
**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION**
Washington, D.C. 20549

FORM 10-K

(Mark One)

ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the fiscal year ended December 31, 2022;

or

TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the transition period from _____ to _____

Commission file number 001-38161



Calyxt, Inc.

(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction of
incorporation or organization)

27-1967997
(I.R.S. Employer
Identification No.)

2800 Mount Ridge Road
Roseville, Minnesota
(Address of principal executive offices)

55113-1127
(Zip Code)

Registrant's telephone number, including area code: (651) 683-2807

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock (\$0.0001 par value)	CLXT	The NASDAQ Stock Market LLC

Securities registered pursuant to Section 12(g) of the Act: None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes No

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes No

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes No

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes No

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth

company” in Rule 12b-2 of the Exchange Act (check one):

Large Accelerated Filer	<input type="checkbox"/>	Accelerated Filer	<input type="checkbox"/>
Non-accelerated Filer	<input checked="" type="checkbox"/>	Smaller Reporting Company	<input type="checkbox"/>
Emerging Growth Company	<input type="checkbox"/>		

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

Indicate by check mark whether the registrant has filed a report on and attestation to its management’s assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report.

If securities are registered pursuant to Section 12(b) of the Act, indicate by check mark whether the financial statements of the registrant included in the filing reflect the correction of an error to previously issued financial statements.

Indicate by check mark whether any of those error corrections are restatements that required a recovery analysis of incentive-based compensation received by any of the registrant’s executive officers during the relevant recovery period pursuant to §240.10D-1(b).

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act). Yes No

Aggregate market value of the common stock held by non-affiliates of the registrant: As of June 30, 2022, the last business day of the registrant’s most recently completed second fiscal quarter, the aggregate market value of shares of common stock held by non-affiliates of the registrant was \$5,446,012 based upon the closing sale price of the registrant’s common stock of \$0.24 on such date.

The number of outstanding shares of the registrant’s common stock on March 1, 2023 was 49,376,160 shares.

DOCUMENTS INCORPORATED BY REFERENCE

The information required by Part III of this Annual Report on Form 10-K, to the extent not set forth herein, is incorporated herein by reference from the registrant’s definitive proxy statement relating to the registrant’s Annual Meeting of Stockholders to be held in 2023, which definitive proxy statement shall be filed with the Securities and Exchange Commission not later than 120 days after the end of the fiscal year covered by this Annual Report on Form 10-K.

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Terms

When the terms the “Company” or “its” are used in this report, unless the context otherwise requires, those terms are being used to refer to Calyxt, Inc. When the term “Collectis,” is used, it is being used to refer to Collectis S.A. (*société anonyme*), the Company’s largest stockholder.

The Company owns the names PlantSpring and BioFactory. The Company also owns the trademarks Calyxt® and Calyno® and owns or licenses other trademarks, trade names, and service marks appearing in this Annual Report on Form 10-K. The names and trademarks Collectis® and TALEN®, along with any other trademarks, trade names, and service marks of Collectis appearing in this report are the property of Collectis. This report also contains additional trade names, trademarks, and service marks belonging to other companies. The Company does not intend its use or display of other parties’ trademarks, trade names, or service marks to imply, and such use or display should not be construed to imply a relationship with, or endorsement or sponsorship of these other parties.

Cautionary Note Regarding Forward-Looking Statements

This Annual Report on Form 10-K contains “forward-looking statements” within the meaning of the federal securities laws, including Section 27A of the Securities Act of 1933, as amended (the Securities Act), and Section 21E of the Securities Exchange Act of 1934, as amended (the Exchange Act). The Company may also make forward-looking statements in other reports filed with the Securities and Exchange Commission (SEC), in materials delivered to stockholders, and in press releases. In addition, the Company’s representatives may from time-to-time make oral forward-looking statements.

The Company has made these forward-looking statements in reliance on the safe harbor provisions of the U.S. Private Securities Litigation Reform Act of 1995. In some cases, you can identify these statements by forward-looking words such as “anticipates,” “believes,” “continue,” “estimates,” “expects,” “intends,” “may,” “might,” “plans,” “predicts,” “projects,” “should,” “targets,” “will,” or the negative of these terms and other similar terminology. Forward-looking statements in this report include statements about the Company’s proposed merger with Cibus Global, LLC (Cibus) and the transactions contemplated in connection with the merger (Transactions); Calyxt’s future financial performance, including its liquidity and capital resources, cash runway and its ability to continue as a going concern; its product pipeline and development; its business model and strategies for the development, commercialization and sales of commercial products; commercial demand for its synthetic biology solutions; the development and deployment of its PlantSpring technology platform; the ability to scale production capability for its BioFactory production system; potential development agreements, partnerships, customer relationships, and licensing arrangements and their contribution to its financial results, cash usage, and growth strategies; and anticipated trends in its business. These and other forward-looking statements are predictions and projections about future events and trends based on the Company’s current expectations, objectives, and intentions and are premised on current assumptions. The Company’s actual results, level of activity, performance, or achievements could be materially different than those expressed, implied, or anticipated by forward-looking statements due to a variety of factors, including, but not limited to: adverse impacts if the conditions to the closing of the Transactions are not satisfied or if consummation of the Transactions is delayed; Calyxt’s ability to realize anticipated benefits of the proposed Transactions; Calyxt’s ability to maintain its continued listing on the Nasdaq Capital Market; any adverse impact of the Company’s cost reduction measures and the proposed Transactions on its relationship with employees and third-parties, including ongoing negotiations with potential customers; the impact of increased competition, including competition from a broader array of synthetic biology companies; competition for customers, partners, and licensees and the successful execution of development and licensing agreements; disruptions at its key facilities, including disruptions impacting its BioFactory production system; changes in customer preferences and market acceptance of its products; changes in market consensus as to what attributes are required for a product to be considered “sustainable”; the impact of adverse events during development, including unsuccessful pilot production of plant-based chemistries or field trials; the impact of improper handling of its product candidates during development; failures by third-party contractors; inaccurate demand forecasting or milestone and royalty payment projections; the effectiveness of commercialization efforts by commercial partners or licensees; disruptions to supply chains, including raw material inputs for its BioFactory; the impact of changes or increases in oversight and regulation; disputes or challenges regarding intellectual property; proliferation and continuous evolution of new technologies; management changes; changes in macroeconomic and market conditions, including inflation, supply chain constraints, and rising interest rates; dislocations in the capital markets and challenges in accessing liquidity and the impact of such liquidity challenges on the Company’s ability to execute on its business plan; and other important factors discussed in Part I, Item 1A, “Risk Factors” of this Annual Report on Form 10-K, which should be considered an integral part of Part II, Item 7, “Management’s Discussion and Analysis of Financial Condition and Results of Operations.”

Any forward-looking statements made by the Company in this Annual Report on Form 10-K are based only on currently available information and speak only as of the date of this report. Except as otherwise required by securities and other applicable laws, the Company does not assume any obligation to publicly provide revisions or updates to any forward-looking statements, whether as a result of new information, future developments or otherwise, should circumstances change.

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Market Data

Unless otherwise indicated, information contained in this Annual Report on Form 10-K concerning the Company's industry and the markets in which it operates is based on information from various sources, including independent industry publications. In presenting this information, the Company has also made assumptions based on such data and other similar sources, and on its knowledge of, and its experience to date in, the potential markets for its product. The industry in which the Company operates is subject to a high degree of uncertainty and risk due to a variety of factors, including those described in the section entitled "Risk Factors" in this Annual Report on Form 10-K. These and other factors could cause results to differ materially from those expressed in the estimates made by the independent parties and by the Company.

Website Disclosure

The Company uses its website (www.calyxt.com), its corporate Twitter account (@Calyxt_Inc) and its corporate LinkedIn account (<https://www.linkedin.com/company/calyxt-inc>) as routine channels of distribution of company information, including press releases, analyst presentations, and supplemental financial information, as a means of disclosing material non-public information and for complying with its disclosure obligations under Regulation FD. Accordingly, investors should monitor the Company's website and its corporate Twitter and LinkedIn accounts in addition to following press releases, filings with the SEC, and public conference calls and webcasts.

Additionally, the Company provides notifications of announcements as part of its website. Investors and others can receive notifications of new press releases posted on the Company's website by signing up for email alerts.

None of the information provided on the Company's website, in its press releases or public conference calls and webcasts, or through social media is incorporated into, or deemed to be a part of, this Annual Report on Form 10-K or in any other report or document it files with the SEC, and any references to its website or to its corporate Twitter and LinkedIn accounts are intended to be inactive textual references only.

PART I

Item 1. Business.

Company Overview

Calyxt, Inc. was founded in 2010 and incorporated in Delaware. Calyxt is a plant-based synthetic biology company. The Company leverages its proprietary PlantSpring™ technology platform to engineer plant metabolism to produce innovative, high-value, and sustainable materials and products for use in helping customers meet their sustainability targets and financial goals. The Company's primary focus and commercialization strategy is on engineering synthetic biology solutions through its PlantSpring technology platform for manufacture using its proprietary and differentiated BioFactory™ production system for a diverse base of target customers across a range of end markets, including the cosmeceutical, nutraceutical, and pharmaceutical industries. The Company also commercializes its PlantSpring technology platform by licensing elements of the platform and historically developed traditional agriculture seed-trait product candidates, as well as selectively developing product candidates for customers in traditional agriculture.

The production of the Company's plant-based chemistries occurs in its proprietary BioFactory production system. This strategic initiative was announced in October 2021. In the context of the Company's PlantSpring technology platform and BioFactory production system, the term "sustainable", as used in this Annual Report, refers to the plant-based chemistry production methods that use plant biomass as a raw material and are therefore renewable and do not completely use up or destroy natural resources.

The Company also out-licenses elements of the PlantSpring technology platform, has historically developed seed-trait product candidates for the traditional agriculture market, and may selectively develop products for customers in traditional agriculture. For example, in the third quarter of 2021, the Company announced it had entered into a research collaboration with a global food ingredient manufacturer based in Asia to develop an improved soybean capable of producing oil that would serve as a commercial alternative to palm oil.

The Company was previously focused on the development of traits for traditional agriculture that it planned to commercialize using either a vertically integrated or licensing business model. The Company's first commercial product, a high oleic soybean, was launched in this manner in the first quarter of 2019. In August 2020, the Company announced it was winding down the vertically integrated soybean product line. The wind-down of this product line was completed in late 2021 with the final sales of soybean grain to a large soybean processor. The Company's second product, an improved digestibility alfalfa, was developed with and licensed to S&W Seed Company (S&W). S&W is pursuing regulatory clearance for their product candidate and is targeting commercialization in 2023 at which time the Company expects to begin to receive initial royalty payments. The Company intends to use this licensing strategy for other historically developed, traditional agriculture seed-trait product candidates.

The Company has historically operated in a single segment primarily within the United States and its assets are located within the United States.

Prior to its initial public offering (IPO) on July 25, 2017, the Company was a wholly owned subsidiary of Collectis. As of December 31, 2022, Collectis owned 49.1 percent of the Company's issued and outstanding common stock. Collectis has certain contractual rights as well as rights pursuant to the Company's certificate of incorporation and bylaws, in each case, for so long as it maintains threshold beneficial ownership levels in the Company's shares. See "Risk Factors—Although Collectis and its affiliates hold less than a majority of the Company's outstanding common stock, Collectis possesses certain rights that prevent other stockholders from influencing significant decisions."

On September 22, 2022, the Company announced that the Board of Directors of the Company (the Board) had begun evaluating potential strategic alternatives to maximize shareholder value, including financing alternatives, merger, reverse merger, other business combinations, sale of assets, licensing, or other transactions.

On January 13, 2023, the Company and Calypso Merger Subsidiary, LLC, a Delaware limited liability company and wholly-owned subsidiary of the Company (Merger Subsidiary) entered into an Agreement and Plan of Merger (the Merger Agreement) with Cibus Global, LLC, a Delaware limited liability company (Cibus) and certain other parties thereto.

Pursuant to the Merger Agreement, following the Transactions, Calyxt will be organized in an "Up-C" structure and re-named "Cibus, Inc." and its only material asset will consist of common units of Cibus. If the Transactions are completed, the business of Cibus will continue as the primary business of the combined organization and the equity holders of Cibus will own a substantial majority of the issued and outstanding common stock of the Company.

The closing of the Transactions is subject to the approval of Calyxt's stockholders, the approval of Cibus' members, the receipt of required regulatory approvals (to the extent applicable) and satisfaction of other customary closing conditions. The closing is currently expected to occur in the second quarter of 2023. Additional information regarding the Transactions is included in Calyxt's registration statement on Form S-4 initially filed with the SEC in February 2023.

In connection with the Transactions, beginning at the earlier of March 15, 2023 and the date Calyxt's unrestricted cash balance first drops below \$1,500,000, Calyxt can request, and Cibus has agreed to provide, an unsecured, interest-free revolving line of credit of up to \$3,000,000 in cash, which amount may be increased to \$4,000,000 if Cibus elects to extend the outside date (as defined in the Merger Agreement) to June 30, 2023 (the Interim Funding). Funds can be drawn by Calyxt in \$500,000 increments and may only be used to fund operating expenses incurred in the ordinary course of business consistent with past practice and consistent with the negative covenants in the Merger Agreement. The full outstanding balance of the Interim

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Funding will be reduced to zero in connection with the closing of the Transactions, if consummated. The full outstanding balance of the Interim Funding will be forgiven by Cibus if the Merger Agreement is terminated for any reason other than certain under certain conditions, as detailed in the Merger Agreement. The Interim Funding is subject to acceleration in connection with certain bankruptcy events.

As a result of the Company's substantially narrowed operational focus and in light of the available Interim Funding from Cibus in connection with the proposed Transactions, the Company believes it has sufficient cash to fund operations through the end of the second quarter of 2023.

If, for any reason, the Transactions are not completed, the Company will reconsider its available alternatives at such time and could pursue one of the following courses of action, which the Company currently believes to be the most likely alternatives:

- *Dissolve and liquidate.* The Company may decide to dissolve and liquidate its assets. In such a circumstance, Calyxt would be required to pay all of its debts and contractual obligations and to set aside certain reserves for potential future claims. In light of Calyxt's current capital resources, it is highly unlikely, in this case, that substantial resources, if any, would be available for distributions to stockholders.
- *Pursue another strategic transaction.* The Company may decide to resume the process of evaluating a potential merger, reorganization or other business combination transaction or to sell or otherwise dispose of certain of the Company's assets. Any of these alternatives would be costly and time-consuming and would require that Calyxt obtain additional near-term funding in parallel to, or as part of, such a strategic transaction. The Company expects that it would be difficult to secure such funding in a timely manner, on favorable terms or at all.
- *Operate the business.* Although substantially less likely than the alternatives above, the Calyxt board could elect to seek to continue to operate the Company's business. This alternative would require that Calyxt obtain additional near-term funding, which the Company expects would be difficult to secure in a timely manner, on favorable terms or at all. If pursued, Calyxt would likely need to significantly delay or further scale back operations beyond its already narrowly focused operational activities.

Current Operational Focus

Prior to the announcement of the Transactions, the Company's primary focus was on the development of synthetic biology products for its customers using its PlantSpring technology to develop various plant-based chemistries for production in its proprietary BioFactory production system. In light of the proposed Transactions and recent capital resource constraints, the Company has substantially scaled back its operations and has focused its current business activities on ensuring it has cash sufficient to achieve a closing of the proposed Transactions. Accordingly, Calyxt's management has implemented cost reduction and other cash-focused measures, including reduction of headcount, reductions of capital expenditures, and renegotiation or termination of professional services agreements. To conserve cash, Calyxt has also strategically evaluated its arrangements with suppliers and service providers and has, in several instances, transitioned such relationships to lower cost alternative providers.

In limiting operations to core activities, the Company has focused its continuing operations on

- scaling production of a single Plant Cell Matrix™ (PCM™) structures with its manufacturing partner, Evologic Technologies GmbH (Evologic);
- licensing efforts with respect to its PlantSpring technology and plant traits, including the TALEN™ technology; and
- continuing to progress its three current customer projects—(1) its research collaboration with a leading global food ingredient manufacturer to develop a soybean trait to serve as an alternative to palm oil, (2) its plant-based chemistry pilot project for a major consumer packaged goods company, and (3) supporting late-stage development activities for its improved digestibility alfalfa trait, which was developed with and licensed to S&W Seed Company.

The Company has suspended non-core activities, such as efforts toward the development and integration of artificial intelligence and machine learning capabilities (AIML) and the initiation, development and commercialization of additional synthetic biology products, or chemistries, beyond those involved in the continuing operations identified above.

The PlantSpring Technology Platform and Calyxt's Development Process

The PlantSpring technology platform is founded on the Company's more than a decade of experience engineering plant metabolism and incorporates its scientific knowledge and its proprietary systems, tools and technologies. PlantSpring also has the potential to incorporate AIML capabilities.

PlantSpring offers the potential to unleash the natural capabilities of plants—the original biological systems—and make available commercial innovations that produce unique plant-based chemistries from plant species, including rare or undomesticated species, in a manner that the Company believes is more robust and sustainable than other methods of production. Plants naturally produce many chemistries that may be valuable inputs for end products. Of the approximately 170,000 known and classified compounds derived from plants, bacteria, and fungi, approximately 78 percent are derived from plants. Moreover, some estimates suggest that there may be up to one million additional chemical compounds yet to be discovered.

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However, the yield of plant-based chemistries that occurs naturally may be insufficient for commercialization using traditional production methods, the plant that produces the chemistry may be scarce in nature or difficult to harvest, or there may be a socioeconomic concern with the harvest of the plant producing the chemistry. Additionally, the quality or quantity of a natural plant chemistry may be inconsistent, varying considerably over each variety, harvest, or field, and can be impacted by different contaminants in the soil where grown.

In PlantSpring, the Company identifies metabolic pathways to produce plant-based chemistries, designs strategies to reprogram host cells, engineers plant cell metabolism to optimally produce targeted compounds or plant traits.

The Company uses an efficient development process to deliver innovation through the PlantSpring technology platform, leveraging its extensive knowledge of plants and their metabolism when developing a plant-based chemistry or plant trait. The Company's synthetic biology product development process is comprised of three primary stages: Design, Engineer, and Verify, and activities within each stage are as follows:

- Design – identify metabolic pathways to produce the target compound and the genes controlling these pathways, develop strategies for the optimized expression of the target genes, and design the technical approach to achieve the production of the targeted compound or trait. A metabolic pathway is a linked series of chemical reactions occurring within a cell. The reactants, products, and intermediates of an enzymatic reaction are known as metabolites, which are modified by a sequence of chemical reactions catalyzed by enzymes.
- Engineer – direct changes in the plant cells using one or more genetic transformation and plant tissue culture techniques, and enhancements of genes in that plant species.
- Verify – use a combination of analytical tools to verify the compound or trait produced against the intended specification. The analytical tools used include natural product chemistry, metabolomics, genomics, gene expression tools, and other analytics.

The typical timeline to complete the Design-Engineer-Verify process is currently estimated at 12 months. The Company is in the process of scaling plant-based chemistry production beyond the laboratory with its third-party manufacturing partner, Evologic Technologies GmbH.

Commercialization Strategies

The Company contemplates three commercialization strategies for its PlantSpring technology platform: (i) the development and sale of high-value synthetic biology products from the Company's proprietary BioFactory production system, (ii) the licensing of elements of the PlantSpring technology platform and historically developed, traditional agriculture seed-trait product candidates, and (iii) selective product development for customers in traditional agriculture. In light of the Company's capital resource constraints, the implementation of these strategies has been limited to implementation of the core activities described under "—Current Operational Focus."

The BioFactory Production System

The BioFactory production system is a bioreactor-based production system that is designed to be capable of continuous production of plant-based chemistries. The bioreactor can be of any size depending upon factors including yield and titer necessary to reach the required commercial scale. For production, multicellular PCM structures are placed inside the bioreactor, and growth media provides the PCM structures with nutrition. A PCM structure is a living system of various cell types, which is designed to emulate the intercellular metabolism of an entire plant, that grows over time and produces and stores, or excretes, the target chemistries. The growth media is the feedstock of the BioFactory production system and contains the essential inputs to support growth of the PCM structures and necessary chemistry production.

In 2022, the Company signed an agreement with an infrastructure partner, Evologic. Under the terms of the agreement, Evologic will work alongside Calyxt to grow and scale Calyxt's proprietary PCM structures and is currently scaling one PCM for Calyxt.

In combination with the Company's Design-Engineer-Verify stages of the development process, the Company estimates that the timeline to achieve commercial availability of a potential product is currently approximately 36 months, subject to potential regulatory extensions for certain industries.

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As a result, the Company believes that in combination its PlantSpring technology platform and its BioFactory production system are capable of unlocking the power of plants to produce high value and complex plant-based chemistries and plant traits that are finite, are difficult to source sustainably, and may not be able to be produced through other production systems or cannot be produced as efficiently in single cell plant culture systems.

Technology Licensing & Product Development for Agriculture

The Company maintains the capability to implement broad technology licensing arrangements and to selectively develop agricultural products. Potential commercial opportunities, include the licensing of elements of the PlantSpring technology platform as well as historically developed, traditional agriculture seed-trait product candidates.

With respect to licensing opportunities for select elements of the PlantSpring technology platform, the opportunities span the Company's intellectual property portfolio built for more than a decade as a leading plant-based biotechnology company, including multiple gene editing platforms, plant breeding, and other capabilities. The Company's PlantSpring technology platform has been utilized to drive industry-leading modernization of the hemp species, including improved characteristics for protein and oil production and use in advanced materials. Hemp can also contribute to enhancing a wide variety of materials, including strengthening plastics, reducing petroleum-based content, and providing greater strength and longevity compared to other plant-based fabrics like linen or cotton. The Company has successfully transformed the hemp genome and also has produced "pollen-proof" (seedless) hemp with its triploid breeding technology. Combined, the Company's hemp advancements offer significant potential advantages in innovation, crop management, and harvest yield.

Additional technology-licensing activity may also continue in connection with the licensing of historically developed, traditional agriculture seed-trait product candidates, including soybeans with improved fatty-acid profiles; an improved digestibility alfalfa, which has been licensed for commercialization to S&W; wheat with a higher fiber content than traditionally bred varieties, and its second generation soybean product, which has an improved fatty acid profile compared to commodity soybeans and the Company's initial soybean product launched in 2019. Among the Company's other development successes are a soybean with improved flavor to help enable wider adoption for plant-based protein applications and controlling the production of storage sugars in potatoes to improve fry quality and reduce acrylamide. While the Company will pursue licensing opportunities for these product candidates, it does not intend to invest in further development until specific licensee customers are contracted with.

The potential to opportunistically develop seed-trait product candidates for customers focused on traditional outdoor agriculture market also remains. In 2021, the Company entered into a research collaboration with a global food ingredient manufacturer based in Asia to develop an improved soybean capable of producing an oil that would serve as a commercial alternative to palm oil. The food ingredient manufacturer is funding the Company's development costs over the term of the agreement and holds an option for future development and commercialization. The Company achieved the first \$100 thousand milestone payment in the fourth quarter of 2022, with the overall project scheduled for completion in the first quarter of 2024, at which time the second milestone payment of \$100 thousand would be due.

To manage prioritization of resources and to drive returns on its investment, the Company has developed a set of criteria by which all agricultural seed trait licensing and seed trait development opportunities are evaluated, which include the size of the overall opportunity, the nature of the product to be developed, and the amount of cash it expects to receive both up front and over time. At present, no new investments are being made in light of the limited implementation of the Company's core activities described under "—Current Operational Focus."

Research and Development

The Company's proprietary technologies and intellectual property portfolio are focused on the PlantSpring technology platform, the BioFactory production system, TALEN, and other adjacent technologies, data analytics, plant breeding, systems, and work processes.

The Company's Research and Development (R&D) team has technical expertise primarily in biochemistry, bioinformatics, chemistry, genetics and genetic engineering, molecular biology, plant physiology, tissue culture techniques, and other related fields. The Company's R&D activities are conducted principally at its Minnesota facility.

Historically, the Company's R&D cash usage has included investments in the development, enhancement and deployment of AIML capabilities, expenses to continue to enhance the capabilities of its PlantSpring technology platform and BioFactory production system, and various expenses and capital expenditures to expand its BioFactory production system from lab through various pilot vessel sizes. In light of Calyxt's capital resource constraints, it has limited R&D cash usage. The Company's current R&D cash usage primarily consists of expenses to continue to scaling production of a single PCM structure with its manufacturing partner, Evologic.

The Company has made substantial investments in R&D. For more information on R&D expenses, see the Company's consolidated financial statements and related financial statement schedules on page F-1.

Market and Industry Overview

Calyxt believes that its technology platforms have the potential to revolutionize how the world uses plants, providing innovation opportunities in the space where customers' needs to consume finite resources and their enhanced focus on the sustainability of the planet intersect. The global economy today faces numerous sustainability challenges, as evidenced by metrics such as carbon pollution, water scarcity, and soil erosion. To address their sustainability goals, many companies must produce products differently, and plant-based chemistries represent a differentiated and a more sustainable alternative to many products and materials in use today. More than 20 percent of the world's 2,000 largest public companies have committed to carbon-neutrality, supporting a shift to plant-based solutions.

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The synthetic biology industry has expanded significantly over the past several years. New companies are being formed, investment capital is being deployed, and the number of public exits for once-private synthetic biology companies have accelerated. Companies within this group are pursuing novel methods of production to replace current approaches to the production of various compounds or products. Examples of such compounds include plant-based proteins, colorants, advanced materials, pharma-grade products (such as vaccine adjuvants and antibiotics), and many others. The Company believes it is the only company in the synthetic biology industry that has exclusively used plants as its core innovation species, with most competitors focused on single-cell organisms including yeast, bacteria (such as *e coli*), and algae.

The Company believes that potential end markets for plant-based sustainable solutions are broad and diverse because plant-based synthetic biology can be used to produce compounds and products with many desirable sustainability features. These end markets include the cosmeceutical, nutraceutical, and pharmaceutical industries.

Intellectual Property

Intellectual property protection is key to the Company. As of December 31, 2022, the Company's patent estate is composed of patents and patent applications owned by the Company and in-licensed from other parties. Most of the in-licensed patents and patent applications are licensed from Collectis or the University of Minnesota. The license from Collectis includes technologies invented at Collectis, technologies invented by the Company when it was a wholly owned subsidiary of Collectis, and technologies licensed to Collectis from third parties. The Company also has access to additional patents and patent applications through in-licensing agreements with other research institutions and universities.

The Company's patent portfolio is categorized into three major platforms: PlantSpring, BioFactory and other products, and Licensing. Some patents and patent applications are applicable to multiple platforms, and as such are included in multiple categories.

The PlantSpring platform elements of the Company's patent portfolio is intellectual property used with its PlantSpring platform and includes gene-editing technologies and hemp breeding technologies. This portion of the Company's patent portfolio includes more than 160 patents and patent applications worldwide.

The BioFactory and products platform elements of the Company's patent portfolio includes outputs from its BioFactory, gene edited crops, and its PCM structures. This portion of the Company's patent portfolio includes approximately 45 patents and patent applications worldwide.

The technologies available for licensing within the Company's patent portfolio includes in-licensed technology and Calyxt-originated IP, and includes gene-editing technologies (e.g., TALEN[®]), gene-edited traits for agriculture, and hemp breeding technologies. This portion of the Company's patent portfolio includes approximately 490 patents and patent applications worldwide.

The Company is actively involved in the prosecution and protection of its technology. The Company's global patent portfolio includes 67 patent families comprised of 369 patents and 113 patent applications. Of those patents, 47 have been issued in the United States, with the remaining issued in key geographies outside the United States, primarily Europe, Japan, and China. This number also includes European patents validated in individual European countries. Of those patent applications, 26 are pending in the United States, with the remaining pending as international applications or country-specific applications in key geographies outside the United States.

Individual patent terms extend for varying periods of time, depending upon the date of filing of the patent application, the date of patent issuance, and the legal term of patents in the countries in which they are obtained. The issued patents that the Company has licensed in will expire on dates ranging from 2023 to 2037. If patents are issued on the pending patent applications owned by the Company or that it has in-licensed, the resulting patents are projected to expire on dates ranging from 2023 to 2043. The Company does not believe that the expiration of any patents expected to occur during 2023 would have a material effect on the Company's business, including any impact on its future operations and financial position. For more information regarding the risks related to the Company's intellectual property, please see "Risk Factors—Risks Related to Intellectual Property."

License Agreement with Collectis

Through its license agreement with Collectis, the Company has access to intellectual property that broadly covers the use of engineered nucleases for plant gene editing. This intellectual property covers methods to edit plant genes using "chimeric restriction endonucleases," which include TALEN, CRISPR/Cas9, zinc finger nucleases, and some types of meganucleases. The Company believes this umbrella intellectual property applies broadly across gene editing in plants and makes this license an important element in the gene editing intellectual property space.

Under its license agreement with Collectis, the Company has exclusive sublicense rights (subject to existing non-exclusive sublicenses to third parties) to intellectual property exclusively licensed to Collectis from the University of Minnesota in the field of researching, developing, and commercializing agricultural and food products, including traits, seeds, and feed and food ingredients (excluding any application in connection with animals or animal cells). These patent applications cover the use of DNA replicons for gene editing.

The Company has also been granted a non-exclusive license to use the TALEN trademark in connection with its use of licensed products under the agreement. Any improvements it makes to the in-licensed intellectual property are owned by the Company and licensed back to Collectis on an exclusive basis for any use outside of its exclusive agricultural field of use. The exclusivity of the Company's license agreement with Collectis is subject to certain non-exclusive licenses Collectis granted to third parties in the field of research.

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In consideration for the license from Collectis, the Company is required to pay to Collectis, on a product-by-product and country-by-country basis, a royalty of three percent of net sales less certain items as defined, including costs for grain and seed of any products that are covered by the patents licensed from Collectis. In addition, the Company is required to pay Collectis 30 percent of revenue it receives for sublicensing its rights under the agreement to third parties. The Company's payment obligations to Collectis will expire upon the expiration of the last-to-expire valid claim of the patents licensed to the Company by Collectis.

Under the Company's license agreement with Collectis, and as between the parties, Collectis has the first right to control the prosecution, maintenance, defense and enforcement of the licensed intellectual property and the Company will have the right to step in and assume such control with respect to the patents owned by Collectis and exclusively licensed to it under the agreement if Collectis elects to not prosecute, maintain, defend, or enforce such patents. In certain circumstances, if Collectis elects to abandon any patents owned by Collectis and exclusively licensed to the Company under the agreement, it has the right to assume ownership of such patents. In addition, some of the intellectual property that is licensed to the Company by Collectis consists of a sublicense of intellectual property originally licensed to Collectis by the University of Minnesota. The Company's license from Collectis is subject to the license agreement between the University of Minnesota and Collectis and should its activities under such sublicense violate the license agreement between Collectis and the University of Minnesota, the Company is responsible for any related damages that Collectis may incur. In addition, the Company is required to reimburse Collectis for any payments made by Collectis to the University of Minnesota pursuant to the license agreement between the University of Minnesota and Collectis to the extent that such payments are required to be made as a result of its applicable activities. Under the license agreement between Collectis and the University of Minnesota, the University of Minnesota has the first right to control the prosecution and maintenance of the licensed intellectual property.

The Company's license agreement with Collectis is perpetual. However, the agreement may be terminated at any time upon the mutual written agreement of both parties, either party's uncured material breach of the agreement, or upon certain bankruptcy and insolvency related events.

License Agreement between Collectis and Regents of the University of Minnesota—TALEN

In January 2011, Collectis entered into an exclusive license agreement with the University of Minnesota, which was amended in 2012, 2014 and 2015. Pursuant to the agreement, as amended, Collectis and its affiliates were granted an exclusive, worldwide, royalty-bearing, sublicensable license, under certain patents and patent applications owned by the University of Minnesota, to make, use, sell, import, and otherwise dispose of products covered by the licensed patents, in all fields of use. These licensed patents relate to TALEN molecules and their use in gene editing.

Pursuant to the agreement, with respect to the agricultural field, Collectis is required to pay to the University of Minnesota an annual fee, as well as a commercialization fee for every seed variety containing new traits developed using the licensed technology. Collectis is also required to pay the University of Minnesota milestone payments based on the net sales of licensed products in the agricultural field. Collectis must also pay the University of Minnesota certain patent-related expenses for prosecuting and maintaining the licensed patents; and under the Company's license agreement with Collectis, it is obligated to reimburse Collectis for these prosecution costs.

The agreement will expire upon the expiration of the last to expire valid claim of the licensed patents. The University of Minnesota may terminate the agreement upon advance written notice in the event of the insolvency or bankruptcy of Collectis, and immediately upon written notice if Collectis challenges the validity or enforceability of any licensed patent in a court or other applicable authority. Collectis and the University of Minnesota may terminate the agreement by written notice in the event of the other party's breach that has not been cured within a specified number of days after receiving notice of such breach.

Trademarks

As of December 31, 2022, the Company had four registered trademarks in the United States.

Government Regulation and Product Compliance

The Company's PlantSpring technology platform and its BioFactory production system operate in contained environments without the need for outdoor cropping systems. Any regulated materials used under this process, such as specific bacteria, are therefore subject to well-defined regulations in the United States.

The Company's development and production processes involve the use, generation, handling, storage, transportation and disposal of hazardous chemicals and regulated biological materials. The Company is subject to a variety of federal, state, and local laws, regulations and permit requirements governing the use, generation, manufacture, transportation, storage, handling and disposal of these materials in the United States. In the future, to the extent the Company may operate or sell its products outside the United States, the Company would be subject to corresponding international laws and regulations. These laws, regulations and permits can require expensive fees, exposure or pollution control equipment or operational changes to limit actual or potential impact of the Company's technology on the environment and violation of these laws could result in significant fines, civil sanctions, permit revocation or costs from environmental remediation. Future developments, including the commencement of or changes in the processes relating to commercial manufacturing of one or more of the Company's products, more stringent environmental regulation, policies and enforcement, the implementation of new laws and regulations or the discovery of unknown environmental conditions, may require expenditures that could have a material adverse effect on the Company's business, results of operations or financial condition.

Hemp, as defined in the 2018 Farm Bill as *Cannabis sativa* containing a delta-9 tetrahydrocannabinol (THC) concentration of not more than 0.3 percent on a dry weight basis, has been removed from the United States Federal Controlled Substances Act and is legally distinct from marijuana/cannabis, which is *Cannabis sativa* containing a THC concentration of more than 0.3 percent on a dry weight basis. Hemp is recognized as an agricultural crop by the United States federal government. Federal and state laws and regulations on hemp address production, monitoring, manufacturing, distribution, and laboratory testing to ensure that that the hemp has a THC concentration of not more than 0.3 percent on a dry weight basis. Federal laws and regulations also address the transportation or shipment of hemp or hemp products.

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Consistent with the 2018 Farm Bill, the Minnesota Department of Agriculture (MDA) operates a Hemp Program under its United States Department of Agriculture (USDA) approved Minnesota state plan. This plan establishes that a commercial hemp production license is required for growing and processing of hemp in the State of Minnesota. The Company holds an MDA Hemp Program License and has implemented an internal hemp compliance system including procedures, quality control and internal audits. USDA and/or MDA may audit the Company at any time for compliance with license requirements.

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Additionally, Calyxt has obtained USDA permits for specific regulated materials (e.g., bacteria) that are used as part of its PlantSpring technology platform and BioFactory production system. The Company has implemented the required compliance system in order to meet USDA permit conditions and ensure adequate documentation is in place. The USDA may audit the Company at any time for compliance with permit requirements.

The BioFactory production system has the capability of producing a diverse range of plant-derived compounds that may be used for applications in cosmeceuticals, nutraceuticals, pharmaceuticals, and more. As the Company delivers these valuable compounds to its customers, each customer will be responsible for determining for which applications the compounds are utilized and such customer-determined specific uses will determine applicable regulatory requirements. It is anticipated that because the Company's customers would incorporate the purchased compounds into their existing product development processes and areas of applications, the customers will be best positioned to apply their specific expertise in the field to establish regulatory compliance and determine any additional requirements.

The Company also expects to continue to license its technology and develop seed traits for agricultural customers based on their needs. This would include the use of gene editing in crops for outdoor use. Neither the Company, nor its commercial partners, currently deploy the Company's technology for use outside of the United States with the exception of the Company's High Oleic Soybean product, which in addition to having clearance from the USDA and FDA, also has clearance from the Canadian Food Inspection Agency and Health Canada for use in Canada. In today's global market, overall business development strategy for plant biology companies depends, in part, on the availability of regulatory clearance in strategic export markets, which enables broader flexibility for product expansion and is a key consideration in evaluating global trade opportunities. Regulatory predictability is critical in order to establish accurate product launch strategies. The costs of achieving clearance in foreign countries is often high, due to stricter regulatory environments than the United States, and there can be no assurance the Company will be granted clearance on favorable terms, if at all.

Under the Company's partner-driven model, agricultural customers would likely be contractually responsible for obtaining the needed global regulatory clearance for agricultural products developed by the Company or using its licensed technology. Accordingly, outside of permitting expenses incurred in the ordinary course of business, the Company does not expect compliance with government regulations, including environmental regulations, to have a material effect on the Company's capital expenditures, earnings, or competitive position.

Competition

The market for more sustainably produced products is highly competitive. Competition in synthetic biology is largely from fermentation-based companies who generally pursue the development of compounds by combining a single cell organism like a microbe, bacteria, or yeast with another organism's DNA to achieve a desired result. These compounds are then marketed by third parties or directly by the fermentation company. These organizations may have substantially larger budgets for R&D, product commercialization, and regulatory process management and greater available capital resources.

Through its technology licensing, the Company believes that it faces competition from large agricultural biotechnology, seed, and chemical companies, certain of which have been actively involved in new trait discovery, development, and commercialization. Many of the Company's competitors—particularly large chemical companies—have substantially larger budgets for R&D, product commercialization, and regulatory process management as well as substantially greater access to capital. Trait research and development companies as well as research universities and institutions are competitors that typically focus on a limited number of traits and do not generally have the product development, gene editing technologies, and regulatory infrastructure necessary to bring traits to market. They generally out-license trait technologies to large industry players with in-house development and regulatory capabilities at a relatively early stage of development.

The Company competes based on its expertise and the precision, specificity, cost effectiveness and development speed of its proprietary technologies. Nevertheless, certain of the Company's competitors are more established in the synthetic biology industry and many of the Company's current or potential competitors, either alone or with their R&D or collaboration partners, have significantly greater financial resources and expertise in R&D, manufacturing, testing, and marketing approved products than the Company.

The Company's commercial opportunity could be reduced or eliminated if its competitors develop and commercialize products faster, with lower research costs than the Company.

Human Capital

As of December 31, 2022, the Company had 48 employees, 30 of whom were in R&D. None of the Company's employees are represented by a labor union or covered by a collective bargaining agreement. The Company considers its relationship with employees to be good.

The Company's employees are a critical asset. Recognizing the core importance of its personnel, the Company has sought to provide:

- competitive wages and benefits,
- support to employees by promoting health and safety,
- training and development that builds technical and professional skills, and
- a culture of compliance that focuses on adhering to its code of conduct and business ethics and labor policy at all levels.

The Company values and celebrates the diversity of its employee base and provides regular opportunities to learn about contributions of various ethnic and minority groups on the culture and achievements of the United States, including scientific advancements.

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Human capital management strategies have been developed collectively by senior management and are overseen by the Board of Directors. The Company is committed to efforts that ensure that the workplace is respectful, equitable, ethical, and fosters an inclusive work environment across its workforce. This commitment has been reinforced through required diversity and inclusion trainings for all employees.

In connection with the Company's cost reduction measures, Calyxt has undertaken headcount reductions, primarily in the first quarter of 2023. As of January 31, 2023, Calyxt had 28 full-time employees, of which ten employees are within Calyxt's administrative, legal and finance functions.

Seasonality

The Company maintains the capability to implement broad arrangements for technology licensing and product development for agriculture. Technology licensing opportunities span the Company's intellectual property portfolio built over more than a decade as a leading plant-based biology company, including multiple gene editing platforms, plant breeding, and other capabilities. The Company may be exposed to the impact of seasonality that exists with traditional agriculture depending on the arrangement.

Corporate Information

The Company incorporated in Delaware on January 8, 2010, and its largest stockholder is Collectis. The Company's principal executive offices are located at 2800 Mount Ridge Road, Roseville, Minnesota 55113, United States of America, and its telephone number is +1 (651) 683-2807. The Company also maintains a website at www.calyxt.com. The information contained in, or that can be accessed through, its website is not part of this report.

Available Information

The Company files or furnishes periodic reports and amendments thereto, including its Annual Reports on Form 10-K, its Quarterly Reports on Form 10-Q and Current Reports on Form 8-K, proxy statements, and other information with the SEC. On the Company's website located at www.calyxt.com, investors can obtain, free of charge, this Annual Report on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K and all other filings with the SEC as soon as reasonably practicable after it electronically files or furnish such information with the SEC. Information contained on the Company's website is not incorporated into this Annual Report on Form 10-K. In addition, the SEC maintains a website that contains reports, proxy statements and other information regarding issuers that file electronically with the SEC. The website can be accessed at www.sec.gov.

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Item 1A. Risk Factors.

This section includes a discussion of what the Company believes to be the material factors that make an investment in the Company speculative or risky and that could affect its business, operating results, financial condition, and the trading price of the Company's common stock. The risks described below are not the only risks the Company faces. Additional risks and uncertainties not currently known to the Company, or that the Company currently deems to be immaterial, may occur or become material in the future. You should carefully consider these risk factors in connection with Part 2, Item 7, "Management's Discussion and Analysis of Financial Conditions and Results of Operations," the consolidated financials and the other information in this Annual Report.

Risk Related to the Transactions

There is no assurance that the Transactions will be completed in a timely manner or at all. If the Transactions are not consummated, the Company's business could suffer materially and its stock price could decline.

The closing is subject to a number of closing conditions, including the approval by the Company's stockholders of the issuance of shares of Calyxt's common stock pursuant to the Merger Agreement and other customary closing conditions. If the conditions are not satisfied or waived, the merger will not occur or will be delayed.

If the Transactions are not consummated, the Company may be subject to a number of material risks, and its business and stock price could be adversely affected, as follows:

- The Company has incurred and expects to continue to incur significant expenses related to the Transactions even if the Transactions are not consummated;
- The Company could be obligated to pay Cibus a termination fee of up to \$1.0 million under certain circumstances pursuant to the Merger Agreement;
- the market price of Calyxt's common stock may decline to the extent that the current market price reflects a market assumption that the Transactions will be completed; and
- The Company may not be able to pursue an alternate merger or other strategic transaction if the Transactions are not completed.

If the Transactions are not completed, Calyxt's board of directors may decide to pursue a liquidation and dissolution of Calyxt. In such an event and in light of Calyxt's current capital resource constraints, it is unlikely that substantial resources would be available for distributions to stockholders.

While Calyxt has entered into the Merger Agreement with Cibus, the closing of the Transactions may be delayed or may not occur at all, and there can be no assurance that the Transactions, if completed, will deliver the anticipated benefits Calyxt expects or enhance stockholder value. If the Transactions are not completed and the Merger Agreement is terminated under certain circumstances, Calyxt may be required to pay Cibus a termination fee of \$1.0 million. Even if a termination fee is not payable in connection with a termination of the Merger Agreement, Calyxt will have incurred significant fees and expenses, which must be paid whether or not the merger is completed. Further, beginning at the earlier of March 15, 2023 and the date Calyxt's unrestricted cash balance first drops below \$1.5 million, Calyxt can request, and Cibus has agreed to provide the Interim Funding. While the outstanding balance of the Interim Funding will be reduced to zero in connection with the closing of the Transactions, if the Merger Agreement is terminated under certain circumstances, any portion of the Interim Funding that has been drawn would become due and payable.

If for any reason the Transactions are not completed, Calyxt's board of directors may elect to, among other things, attempt to complete another strategic transaction, attempt to sell or otherwise dispose of the various assets of Calyxt, or seek to continue to operate Calyxt's business. Any of these alternatives would be costly and time-consuming and would require that Calyxt obtain additional near-term funding. Calyxt expects that it would be difficult to secure such funding in a timely manner, on favorable terms or at all. Further, in each of the foregoing scenarios, the failure to complete the Transactions may result in negative publicity and a negative impression of Calyxt in the investment community, could significantly harm the market price of Calyxt's Common Stock, may affect Calyxt's relationship with employees, customers and potential customers and other partners in the business community, and may make further impede the ability to raise additional financing.

Calyxt cautions that it is unlikely that Calyxt will be able to obtain additional financing or to find a new strategic partner. If a new strategic partner were identified, Calyxt can provide no assurance that it would be able to close an alternative transaction on terms that are at least as favorable as the terms set forth in the Merger Agreement. Accordingly, there is significant risk that such alternatives, if any, may not be successfully consummated, if pursued. To the extent that Calyxt seeks and is able to raise additional capital through the sale of equity or convertible debt securities, Calyxt stockholders' ownership interest will be diluted, and the terms of these securities may include liquidation or other preferences that adversely affect their rights as a common stockholder. Debt financing or preferred equity financing, if available, may involve agreements that include covenants limiting or restricting Calyxt's ability to take specific actions, such as incurring additional debt, making capital expenditures or declaring dividends. If Calyxt raises funds through strategic transactions or commercial or licensing arrangements with third parties, Calyxt may have to relinquish valuable rights to its intellectual property, technologies, future revenue streams or product candidates or to grant licenses on terms that may not be favorable to it. Even if consummated, it is unlikely that any such transaction will fully address Calyxt's current capital resource constraints and liquidity challenges, and Calyxt may need to significantly delay or further scale back operations beyond its already narrowly focused operational activities. In such circumstances, the Calyxt board of directors may decide that it is in the best interests of the Calyxt stockholders to dissolve the company and liquidate its assets.

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If the Transactions are not completed, the Calyxt board of directors may decide that it is in the best interests of the Calyxt stockholders to dissolve the company and liquidate its assets. In that event, the amount of cash, if any, available for distribution to the Calyxt stockholders would depend on the timing of such decision and the timing of such liquidation since the amount of cash available for distribution continues to decrease as Calyxt funds its operations and incurs fees and expenses related to the merger, including pursuant to the Interim Funding. In addition, if the Calyxt board of directors were to approve and recommend, and the Calyxt stockholders were to approve, a dissolution of Calyxt, it would be required under the DGCL to pay its outstanding obligations, as well as to make reasonable provision for contingent and unknown obligations, prior to making any distributions in liquidation to the Calyxt stockholders. As a result of this requirement, a portion of Calyxt's assets may need to be reserved pending the resolution of such obligations. In addition, Calyxt may be subject to litigation or other claims related to a liquidation and dissolution of the company. If a liquidation and dissolution were pursued, the Calyxt board of directors, in consultation with its advisors, would need to evaluate these matters and make a determination about a reasonable amount to reserve. Accordingly, in such a circumstance and in light of Calyxt's current capital resources, it is highly unlikely that substantial resources, if any, would be available for distributions to stockholders. Calyxt's stockholders would likely lose all or a significant portion of their investment.

Calyxt has engaged in cost reduction and other cash-focused measures, which may result in challenges in managing its business and executing on its business strategy while successfully completing the Transactions.

In light of Calyxt's capital resource constraints in recent quarters, management has implemented cost reduction and other cash-focused measures, including reduction of capital expenditures, headcount reductions, and renegotiation or termination of professional services agreements. To conserve cash, Calyxt has also strategically evaluated its arrangements with suppliers and service providers and has, in several instances, transitioned such relationships to lower cost alternative providers.

During the course of discussions with Cibus regarding, and following the execution of, the Merger Agreement, Calyxt has further streamlined and focused its business activities on preserving cash sufficient to achieve a closing of the Transactions. Accordingly, Calyxt has taken additional steps to reduce its operating expenses and has focused its continuing operations on scaling production of its Plant Cell Matrix with its manufacturing partner, licensing efforts with respect to its PlantSpring technology and plant traits and continuing to progress its three key customer projects.

Calyxt's cost reduction measures have included headcount reductions, which result in the loss of institutional knowledge and expertise as well as reallocations and combinations of certain roles and responsibilities, in each case, which could adversely affect Calyxt's operations. As of January 31, 2023, Calyxt had 28 full-time employees, of which ten are within Calyxt's administrative, legal, and finance functions. Calyxt's ability to continue its day-to-day operations and to successfully complete the merger depends in large part on its ability to retain certain remaining personnel. Despite Calyxt's efforts to retain employees, one or more key employees could terminate their employment with Calyxt on short notice. The loss of the services of certain employees could potentially harm Calyxt's ability to consummate the merger, to continue its day-to-day business operations, including the progression of its key customer projects, or to fulfill its reporting obligations as a Nasdaq-listed public company.

If for any reason the Transactions are not completed and the Calyxt board of directors seeks to continue to operate Calyxt's business, Calyxt will face challenges resulting from its streamlined personnel, who will need to continue to implement Calyxt's managerial, operational, and financial systems, manage its facilities, and progress customer projects and licensing efforts. As a result, Calyxt's management may need to divert a disproportionate amount of its attention away from Calyxt's day-to-day strategic and operational activities and devote a substantial amount of time to managing organizational changes. Further, cash-focused headcount reduction measures may yield unintended consequences, such as attrition beyond Calyxt's intended reduction in headcount and reduced employee morale. In addition, reductions in the size of Calyxt may result in employees who were not affected by the reductions in headcount seeking alternate employment. The loss of the services of certain employees could potentially harm Calyxt's ability to continue its day-to-day business operations, including the progression of its key customer projects, or to fulfill its reporting obligations as a Nasdaq-listed public company.

In addition, cost reduction and cash-focused measures that Calyxt has undertaken may result in weaknesses in Calyxt's infrastructure and operations, an inability to effectively execute on customer acquisition and business development efforts, loss of business opportunities, reduced productivity among remaining employees, and challenges in complying with legal and regulatory requirements.

If the Transactions are not consummated, the negative events referred to above would have a material adverse impact on Calyxt's business, operations, reputation, and long-term viability. Moreover, negative publicity associated with such cost-reduction activities and Calyxt's failure to consummate the merger could adversely affect Calyxt's relationships with its suppliers, service providers, customers and potential customers, employees, and other third parties, which in turn could further adversely affect its operations and financial condition.

The issuance of shares of Common Stock to Cibus Equityholders in the Transactions will dilute substantially the voting power of Calyxt's current stockholders.

If the Transactions are completed, each outstanding equity interest in Cibus will be converted into the right to receive a number of shares of Common Stock equal to the exchange ratios determined pursuant to the Merger Agreement. Immediately following the Transactions, pre-closing holders of Cibus membership units and warrants are expected to own a substantial majority of the issued and outstanding common stock of the Company, and pre-closing Calyxt stockholders are expected to be substantially diluted. Accordingly, the issuance of shares of Common Stock to Cibus equity holders in the merger will significantly reduce the relative voting power of each share of Common Stock held by current Calyxt stockholders. Consequently, Calyxt stockholders as a group will have significantly less influence over the management and policies of the combined organization after the Transactions than prior to the Transactions.

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If the combined company after the Transactions is unable to realize the strategic and financial benefits currently anticipated from the Transactions, the Calyxt Stockholders will have experienced substantial dilution of their ownership interests without receiving the expected commensurate benefit, or receiving only part of the commensurate benefit to the extent the combined organization is able to realize only part of the expected strategic and financial benefits currently anticipated from the Transactions.

The pendency of the Transactions could have an adverse effect on the trading price of Common Stock and Calyxt's business, financial condition, results of operations or business prospects.

While there have been no significant adverse effects to date, the pendency of the Transactions could disrupt Calyxt's businesses in the following ways, including:

- the attention of Calyxt's management may be directed toward the closing of the Transactions and related matters and may be diverted from the day-to-day business operations; and
- third parties may seek to terminate or renegotiate their relationships with Calyxt as a result of the merger, whether pursuant to the terms of their existing agreements with Calyxt or otherwise.

Should they occur, any of these matters could adversely affect the trading price of Calyxt's Common Stock or harm Calyxt's financial condition, results of operations or business prospects.

Risks Related to Calyxt's Financial Position and Need for Additional Capital

If the Transactions are not completed, Calyxt's ability to continue as a going concern will depend on its ability to obtain additional near-term financing, which may not be available on acceptable terms or at all. Failure to obtain this necessary capital when needed may force it to delay, limit or terminate its product development efforts or cease operations.

As of December 31, 2022, Calyxt had \$3.4 million of cash and cash equivalents. Calyxt's net loss was \$16.9 million for the fiscal year ended December 31, 2022, and it used \$19.4 million of cash for operating activities for the fiscal year ended December 31, 2022.

Calyxt has incurred losses since its inception. If the Transactions are not completed and Calyxt does not pursue a liquidation and dissolution or an alternative strategic transaction, Calyxt expects to continue to incur significant expenses and operating losses for the next several years.

In light of Calyxt's capital resource constraints in recent quarters, management has implemented cost reduction and other cash-focused measures to manage liquidity, including reduction of capital expenditures, headcount reductions, and renegotiation or termination of professional services agreements. To conserve cash, Calyxt has also strategically evaluated its arrangements with suppliers and service providers and has, in several instances, transitioned such relationships to lower cost alternative providers. During the course of discussions with Cibus regarding, and following the execution of, the Merger Agreement, Calyxt has streamlined and focused its business activities on preserving cash sufficient to achieve a closing of the merger. In light of these efforts and taking into account the available Interim Funding from Cibus, Calyxt believes it has sufficient cash to fund operations through the end of the second quarter of 2023.

If the Transactions are not completed and Calyxt does not pursue a liquidation and dissolution, its ability to continue as a going concern will depend on its ability to obtain near-term additional public or private equity or debt financing, obtain government or private grants and other similar types of funding, attain further operating efficiencies, and to further reduce or contain expenditures. If Calyxt were unable to raise additional capital in the near term and in a sufficient amount, it would likely need to implement increasingly stringent cost saving measures and significantly delay, scale back, or cease operations, in part or in full. Accordingly, Calyxt's management has concluded there is substantial doubt regarding its ability to continue as a going concern.

If Calyxt were able to raise additional funds through the issuance of additional debt or equity securities in such circumstances, it could result in substantial dilution to its existing stockholders and increased fixed payment obligations, and these securities may have rights senior to those of Calyxt's shares of common stock. Any of these events could significantly harm Calyxt's business, financial condition, and prospects. In light of Calyxt's current stock price and capital resource constraints, there can be no assurance that a potential financing transaction, if any were available, would be sufficient for Calyxt's financing needs.

Calyxt currently has no source of material near-term revenue and may never become profitable.

During the course of discussions with Cibus regarding, and following the execution of, the Merger Agreement, Calyxt has streamlined and focused its business activities on preserving cash sufficient to achieve a closing of the Transactions. Accordingly, Calyxt has taken additional steps to streamline its operations and to reduce its operating expenses. Calyxt has focused its operations on: scaling production of its Plant Cell Matrix with its manufacturing partner; licensing efforts with respect to its PlantSpring technology and plant traits; and continuing to progress its three key current customer projects—(1) its research collaboration with a leading global food ingredient manufacturer to develop a soybean trait to serve as an alternative to palm oil, (2) its plant-based chemistry pilot project for a major consumer packaged goods company, and (3) supporting late-stage development activities for Calyxt's improved digestibility alfalfa trait, which was developed with and licensed to S&W Seed Company. While these three projects are important for Calyxt's overall product development pipeline, none of these projects is expected to generate material revenue in the near term.

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There can be no guarantee that the Transactions will be completed within the anticipated timing or at all. If the Transactions are not completed and Calyxt does not pursue a liquidation and dissolution, its ability to continue as a going concern and advance its operations and key products will depend on its ability to obtain in the near-term additional financing. Over the longer term and until Calyxt can generate cash flows sufficient to support its operating capital requirements, it would expect to finance a portion of future cash needs through (i) any remaining cash on hand, (ii) commercialization activities, which may result in various types of revenue streams from (a) future product development agreements and technology licenses, including upfront and milestone payments, annual license fees, and royalties; and (b) product sales from its proprietary BioFactory production system; (iii) government or other third-party funding, (iv) public or private equity or debt financings, (v) the execution of an alternative strategic transaction, or (v) a combination of the foregoing. However, capital generated by commercialization activities, if any, is expected to be received over a period of time and ramping up over the course of several years, with near-term capital potentially unavailable on reasonable terms, if at all.

Calyxt has a limited operating history, which makes it difficult to evaluate its current business and prospects and to assess its future viability.

Calyxt is an early-stage synthetic biology company with a limited operating history that to date has been focused primarily on R&D and until October 2021 was pursuing prior go-to-market strategies. Calyxt's operating results for periods prior to October 2021 reflect results under its prior go-to-market strategies, which involved different areas of focus, different cost structures, and different sources of revenues, which, in combination with its limited operating history, may make it difficult to evaluate its current business and prospects and to assess its future viability.

In implementing Calyxt's current strategic focus on the development of plant-based synthetic biology products, Calyxt encounters risks and difficulties frequently experienced by companies in rapidly developing and changing emergent industries, including challenges in developing products, determining appropriate investments of its limited resources, capital raising, and gaining customers for its novel products and innovations.

Plant-based synthetic biology product development is a highly speculative endeavor. It entails significant upfront R&D investment to scale the BioFactory production system to sufficient levels to support commercialization, and there is significant risk that Calyxt will not be able to scale the BioFactory to these levels, or at all. If the Transactions are not completed and Calyxt does not pursue a liquidation and dissolution, these risks will be exacerbated by Calyxt's limited capital resources.

To commercialize its products, Calyxt must be successful in using its PCM structures to produce target molecules at commercial scale and at a commercially viable cost. If Calyxt cannot finance and achieve commercial scale production levels or commercially viable production economics for enough products to support its business plan, including through establishing and maintaining sufficient commercial scale and volume, it will be unable to achieve a sustainable business.

Calyxt's commercial scale production costs depend on many factors that could have a negative effect on its ability to sell products developed for customers at competitive prices, including its ability to establish and maintain sufficient commercial scale and volume to attract third party contract manufacturing, referred to as infrastructure partners. There can be no assurance that Calyxt will be able to engage infrastructure partners on acceptable terms, including reasonable costs per unit of production, or at all, or to maintain relationships with existing infrastructure partners.

If the Transactions are not completed and Calyxt does not pursue a liquidation and dissolution and Calyxt is unable to achieve these economies of scale and targeted unit commercial production, its revenues, profitability, and financial condition will be adversely affected.

Risks Related to the Company's Business and its Operations

The Company's operational and financial success depends on its ability to successfully deliver synthetic biology solutions for an expanded group of end markets, which is subject to a variety of risks and uncertainties.

Since the Company's inception, it has deployed its technology platform toward delivering plant-based innovations and solutions, primarily to the agriculture end market. In October 2021, the Company announced a strategic initiative to focus it on engineering plant-based synthetic biology solutions across an expanded group of end markets, including its initial target end-markets—the cosmeceutical, nutraceutical, and pharmaceutical markets—as well as other potential end markets, including advanced materials and chemical industries, in addition to the agriculture end market. This expanded and diversified focus places significant demands on the Company's management, requires adaptations to its operational infrastructure, and necessitates incremental capital expenditures.

During the course of discussions with Cibus regarding, and following the execution of, the Merger Agreement, Calyxt has streamlined and focused its business activities on preserving cash sufficient to achieve a closing of the Transactions. Accordingly, Calyxt has streamlined its operations and to reduce its operating expenses. Calyxt has focused its operations on: scaling production of its Plant Cell Matrix with its manufacturing partner; licensing efforts with respect to its PlantSpring technology and plant traits; and continuing to progress its three key current customer projects—(1) its research collaboration with a leading global food ingredient manufacturer to develop a soybean trait to serve as an alternative to palm oil, (2) its plant-based chemistry pilot project for a major consumer packaged goods company, and (3) supporting late-stage development activities for Calyxt's improved digestibility alfalfa trait, which was developed with and licensed to S&W Seed Company.

If the Transactions are not completed and Calyxt does not pursue a liquidation and dissolution, it would need to execute on its business plan with limited capital resources. If Calyxt fails to effectively and efficiently manage and implement its business strategy, if it is unable to differentiate its offerings and capabilities from competitors in the synthetic biology industry, who may have a more established position in the synthetic biology industry, greater financial and operational resources, and other competitive advantages, or if Calyxt is otherwise not successful in marketing its offerings and capabilities to new target customers, its business, financial condition, and results of operations would be adversely impacted. In addition, to the

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extent Calyxt faces technological and other challenges, including unanticipated costs or delays in the development of compounds intended to be produced using the BioFactory production system, challenges adapting its technology platform for specific customer-driven plant-based chemistry needs, or the inability to effectively or efficiently scale production, its business, financial condition and results of operations would be adversely impacted. The BioFactory production system and Calyxt's ability to produce plant-based chemistries remain relatively unproven and may not be successful at scale or at all.

Market participants, including customers and potential investors, may be skeptical of the viability and benefits of Calyxt's PlantSpring technology platform and its BioFactory production system because they are based on a novel approach and the adoption of complex and emerging technologies. There can be no assurance that Calyxt's technology will be understood, approved, or accepted by customers, regulators, and potential investors or that Calyxt will be able to sell its services and products profitably at competitive prices and with features sufficient to establish demand. If market participants are skeptical of Calyxt's technology, its ability to raise capital and the value of its common stock may be adversely affected.

Moreover, because of the novelty and complexity of the PlantSpring platform and BioFactory production system, achieving broad commercial success may require that the Company overcomes potential customer skepticism regarding its capabilities, particularly in light of the historical challenges of scaling production in the field of synthetic biology. If the Company does not achieve the technical specifications required by its customers or successfully manage new product development processes, or if development work is not performed according to schedule, then its revenue growth from new pipeline products may be prevented or delayed, and its business and operating results may be harmed.

In order for novel products from the PlantSpring technology platform and its BioFactory production system to be successfully commercialized, it will be important for the Company to establish relationships not only with customers, but also with their suppliers in order to gain visibility into market trends, feature and specification demands, and manufacturing, regulatory, and distribution challenges. If the Company is unable to convince potential customers or their suppliers of the value of its synthetic biology products, it will not be successful in entering these markets and its business and results of operations will be adversely affected.

The Company faces significant competition and many of its competitors have substantially greater financial, technical, and other resources than Calyxt.

The market for products developed with synthetic biology is highly competitive, and the Company faces significant direct and indirect competition in several aspects of its business. See "Item 1. Business – Competition." Many of these competitors have substantially greater financial, technical, marketing, sales, distribution, and other resources than the Company. Many competitors engage in ongoing R&D, and technological developments by its competitors could render the Company's technology less competitive or obsolete, resulting in reduced revenues compared to expectations. As a result, the Company may be unable to compete successfully against its current or future competitors, which may result in reductions in revenue, reduced margins, and the inability to achieve market acceptance for its products. The Company expects to continue to face significant competition.

The synthetic biology industry is still emerging and is characterized by rapid and significant technological changes, frequent new product introductions and enhancements, and evolving industry demands and standards. The Company's success depends on its ability to sign and initiate commercial programs using its customer demand-driven approach to selecting compounds for development and scaling the production of those compounds in its BioFactory production system. To compete, the Company's development activity needs to occur on a timely and cost-effective basis, and it will need to continue to advance its technology. However, in light of the Company's efforts to preserve cash, it has presently suspended non-core activities, such as efforts toward the development and integration of artificial intelligence and machine learning capabilities (AIML) and the initiation, development and commercialization of additional synthetic biology products, or chemistries, beyond those involved in the continuing operations identified above.

The Company's ability to compete effectively and to achieve commercial success also depends, in part, on its ability to identify and attract customers who contract with it to develop products for use in their production and contracting with those same third parties for the commercialization of those products. The Company may not be successful in achieving these factors and any such failure may adversely affect its business, results of operations and financial condition. Moreover, the Company's ability to attract and contract with customers has been hampered by the Company's capital resource constraints and cost reduction efforts.

Due to the lead time involved in developing a product for a customer using the Company's platform, its potential customers will be required to make a number of assumptions and estimates regarding the commercial feasibility of the plant-based chemistry, including assumptions and estimates regarding the demand for those end-products and processes that will utilize the plant-based chemistry developed with the Company's technology, the existence or non-existence of products being simultaneously developed by competitors, potential market penetration and obsolescence, whether planned or unplanned. As a result, it is possible that the Company may reach an agreement with a customer who wishes to develop a product that has been displaced by the time of launch, addresses a market that no longer exists or is smaller than previously thought, that end-consumers do not like or otherwise is not competitive at the time of launch, in each case, after the incurrence of significant opportunity costs by the Company to develop such a product. In addition, potential customers will be required to make assumptions about the Company's ability to execute on such product development initiatives, including the Company's ability to continue as a going concern through the product development lifecycle.

In certain circumstances, competitors who license the Company's technology could use those technologies to develop their own products that would compete with products commercialized by the Company's agriculturally focused collaboration partners, which may impact its future royalties.

The Company also anticipates that competition in the synthetic biology industry will increase in the future as new companies enter the market and new technologies become available. The Company's technology may be rendered obsolete or uneconomical by technological advances or entirely different approaches developed by one or more of its competitors that are more effective or that enable them to develop and commercialize products more quickly or with lower expense than the Company is able to. At the same time, the expiration of patents covering existing technologies reduces the barriers to entry for competitors. If for any reason the Company's technology becomes obsolete or uneconomical relative to competitors' technologies, this would prevent or limit its ability to generate revenues from the commercialization of its products.

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If the Company cannot enter into new customer partnerships and successfully execute on the underlying product development projects to bring a customer's plant-based chemistry to commercial scale production and ultimately sell them the product, its business will be adversely affected.

The Company's approach to product development is customer demand-driven and as a result, its success depends on the number, size, and scope of customer collaborations. The Company's ability to win new business depends on many factors, including its reputation in the market, the differentiation of its PlantSpring technology platform and BioFactory production system relative to alternatives, the pricing and efficiency of its offerings relative to alternatives, its financial stability (including market participants' expectations about the Company's ability to continue as a going concern), and its technical capabilities. If the Company fails to establish a position of strength in any of these factors, its ability to either sign new customer agreements may suffer and this could adversely affect its prospects.

During the course of discussions with Cibus regarding, and following the execution of, the Merger Agreement, Calyxt has streamlined and focused its business activities on preserving cash sufficient to achieve a closing of the Transactions. Accordingly, Calyxt has streamlined its operations and to reduce its operating expenses. While licensing efforts with respect to its PlantSpring technology and plant traits remains an operational focus, Calyxt's streamlined workforce and the prioritization of its available resources has substantially limited the number of chemistries being actively pursued by Calyxt. The focus of Calyxt's management on the Transactions and the uncertainty arising from the Transactions has significantly reduced the number of active projects.

In the course of business development discussions, Calyxt may spend considerable time and money engaging in strategic and feasibility assessments, including understanding the technical specifications of a particular plant-based chemistry, customer concerns and limitations, and the legal or regulatory landscape of a potential program or offering, which may not result in a commercial agreement. Even if an agreement is reached, the resulting relationship may not be successful for many reasons, including the Company's inability to complete the development of a plant-based chemistry to the customers' specifications or within the customers' time frames, or unsuccessful development or commercialization of products or processes by its customers. In such circumstances, the Company's revenues from such an agreement might be meaningfully reduced.

Development of new or improved plant-based synthetic biology products that meet customer demand-driven specifications involves risks of failure inherent in the deployment of innovative and complex emerging technologies. Accordingly, if the Company or its infrastructure partners experience any significant delays in the development of new products or if new products do not meet customer specifications, its business, operating results, and financial condition would be adversely affected.

The Company relies on third parties for at-scale production and other services, and any performance issues by such third parties, or the Company's inability to engage third parties on acceptable terms, may impact the Company's ability to successfully meet its commercial obligations.

The Company's current plan is to contract with third-party infrastructure partners for at-scale production of its PCM structures and for other R&D services. In the third quarter of 2022, Calyxt signed an agreement with its first infrastructure partner, Evologic, to further develop and scale its PCM structures. Evologic is currently scaling one of the Company's PCM structures.

Although the Company intends to provide for audit and/or inspection rights for all infrastructure partners and provides infrastructure partners with protocols regarding the production and handing of its plant-based chemistries, it has limited control over the execution of their activities. Poor execution, failure to follow required protocols or regulatory requirements, or mishandling of the plant-based chemistry by these infrastructure partners could impair success, delay production, cause the Company to incur incremental costs, or damage the customer relationship.

Even if the Company's infrastructure partners adhere to protocols, production runs and other R&D activities may fail to succeed for a variety of other reasons. Ultimately, the Company remains responsible for ensuring work performed is conducted in accordance with the applicable protocol and standards, and reliance on infrastructure partners does not relieve the Company of its responsibilities. Should these infrastructure partners fail to comply with these standards, the Company's ability to develop plant-based chemistries in accordance with customer specifications or in a timely manner could be adversely impacted.

Additionally, if the Company is unable to maintain or enter into agreements with infrastructure partners on acceptable terms, or if engagement is terminated prematurely, it may be unable to conduct or complete research, development, and production in the anticipated manner. For example, establishing and operating infrastructure partner facilities may require the Company to make significant capital expenditures, which reduces its cash and places such capital at risk. Also, infrastructure partner agreements may contain terms that commit the Company to pay for other costs and amounts incurred or expected to be earned by the plant operators and owners, which can result in contractual liability and losses for it even if it terminates a particular infrastructure partner arrangement or decides to reduce or stop production under such an arrangement. Further, the Company cannot be sure that contract manufacturers will be available when it needs their services, that they will be willing to dedicate a portion of their capacity to its projects, or that it will be able to reach acceptable price, delivery, and other terms with the infrastructure partners for the provision of their production services.

If the Company's relationship with any of these infrastructure partners is terminated, it may be unable to enter arrangements with alternative infrastructure partners on commercially reasonable terms, or at all. Switching or adding infrastructure partners can involve substantial cost and require extensive management time and focus. In addition, there is a natural transition period when any new infrastructure partner commences work. As a result, delays may occur, which could materially impact the Company's ability to meet desired development timelines, its achievement of product-related revenues, and profitability.

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If the Company's technology licensees are delayed or unsuccessful in their development activities associated with their license of the technology, its financial results could be affected.

The Company's strategy includes licensing its technology and its historically developed seed-trait product candidates for traditional agriculture to third parties. If the Company's licensees are delayed, are unsuccessful in their development and commercialization efforts, or if they fail to devote sufficient time and resources to support the marketing and selling efforts of products developed using the licenses of the Company's technology, it may not receive milestone and/or royalty payments as expected, and its financial results could be harmed. Further, if these licensee customers fail to market the licensed seed-trait products or products developed with the Company's licensed technology at prices that will achieve or sustain market acceptance for those products, its future royalty revenues could be further harmed. If a product is commercialized by a licensee, its performance may also be impacted by numerous risks, including competition from alternative products, product defects, changes in end-consumer demand, changes in law or regulation, or changes in economic conditions. Moreover, licensees have significant discretion in determining the efforts and resources applied to commercializing products utilizing the plant-based chemistries developed by the Company, and they may not commit sufficient resources to successfully advance a product candidate or achieve commercial success. Disputes may arise with licensees that cause the delay or termination of commercial contracts for current or future products or that results in costly litigation or arbitration that diverts management attention and resources.

Any outdoor agriculture product development agreements that the Company may enter in the future may be delayed or may be unsuccessful, which could adversely affect its financial results.

The Company's strategy permits opportunistically entering into product development arrangements with third parties for the development and commercialization of certain outdoor agriculture seed traits. For example, in 2021, the Company announced that it had entered into a research collaboration with a global food ingredient manufacturer based in Asia to develop an improved soybean capable of producing an oil as a commercial alternative to palm oil.

To the extent the Company enters into such product development agreements, their success will depend heavily on the efforts and activities of its customer's commercialization efforts and as a result its ability to achieve milestone payments or generate royalties will not be within its direct control. If an outdoor agriculture product is commercialized by a licensee, its performance may also be impacted by numerous risks, including:

- Adverse weather conditions, natural disasters, crop disease, pests and other natural conditions;
- Climate change that may cause changes in weather patterns and conditions, including changes in rainfall and storm patterns and intensities, water shortages, changes in sea levels, and changes in temperature levels;
- Licensee field trials may be unsuccessful;
- Licensee products, and food containing those products, may fail to meet standards established by third-party non-GMO verification organizations; and
- The unintended presence of the Company's traits in other products or plants may have a negative effect on the licensee's operations.

Risks Related to Intellectual Property

Patents and patent applications involve highly complex legal and factual questions, which, if determined adversely to the Company, could negatively impact its competitive position.

The patent positions of biotechnology companies and other actors in the Company's fields of business can be highly uncertain and involve complex scientific, legal, and factual analyses. The interpretation and breadth of claims allowed in some patents covering biological compositions may be uncertain and difficult to determine and are often affected materially by the facts and circumstances that pertain to the patented compositions and the related patent claims. The issuance and scope of patents cannot be predicted with certainty. Patents, if issued, may be challenged, invalidated, narrowed, or circumvented. Challenges to the Company or its licensors' patents and patent applications, if successful, may result in the denial of it or its licensors' patent applications or the loss or reduction in their scope. In addition, defending against such challenges may be costly and involve the diversion of significant management time. Accordingly, rights under any of the Company or its licensors' patents may not provide it with enough protection against competitive products or processes and any loss, denial, or reduction in scope of any of such patents and patent applications may have a material adverse effect on its business.

Even if not challenged, the Company or its licensors' patents and patent applications may not adequately protect its product candidates or technology or prevent others from designing their products or technology to avoid being covered by the Company or its licensors' patent claims. If the breadth or strength of protection provided by the patents the Company owns or licenses is threatened, it could dissuade companies from partnering with it to develop, and could threaten the ability to successfully commercialize, the Company's product candidates.

If the Company or its licensors fail to obtain and maintain patent protection and trade secret protection of its product candidates and technology, it could lose competitive advantage and competition the Company faces would increase, reducing any potential revenues and have a material adverse effect on its business.

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The Company will not seek to protect its intellectual property rights in all jurisdictions throughout the world and it may not be able to adequately enforce its intellectual property rights even in the jurisdictions where it seeks protection.

Filing, prosecuting, and defending patents in all countries and jurisdictions throughout the world would be prohibitively expensive. Patent protection must be sought on a country-by-country basis, which is an expensive and time-consuming process with uncertain outcomes. The Company's intellectual property rights in some countries outside the United States could be less extensive than those in the United States, assuming that rights are obtained in the United States. In addition, the laws of some foreign countries do not protect intellectual property rights to the same extent as federal and state laws in the United States. Consequently, the Company may not be able to prevent third parties from practicing its inventions in all countries outside the United States, or from selling or importing products made using its inventions in and into the United States or other jurisdictions.

Competitors may use the Company's technologies in jurisdictions where it or its licensors do not pursue and obtain patent protection. Further, competitors may export otherwise infringing products to territories where the Company or its licensors have patent protection, but where the ability to enforce those patent rights is not as strong as in the United States. These products may compete with the Company's products and its intellectual property rights and such rights may not be effective or enough to prevent such competition.

In addition, changes in, or different interpretations of, patent laws in the United States and other countries may permit others to use the Company's discoveries or to develop and commercialize its technology and products without providing any notice or compensation or may limit the scope of patent protection that the Company or its licensors are able to obtain. The laws of some countries do not protect intellectual property rights to the same extent as United States laws and those countries may lack adequate rules and procedures for defending the Company's intellectual property rights.

Furthermore, proceedings to enforce the Company's licensors' and its patent rights and other intellectual property rights in foreign jurisdictions could result in substantial costs and divert its efforts and attention from other aspects of its business, could put the Company or its licensors' patents at risk of being invalidated or interpreted narrowly, could put it or its licensors' patent applications at risk of not issuing and could provoke third parties to assert claims against it or its licensors. The Company may not prevail in any lawsuits that initiates, and the damages or other remedies awarded to it, if any, may not be commercially meaningful, while the damages and other remedies the Company may be ordered to pay such third parties may be significant. Accordingly, the Company's licensors and its efforts to enforce its intellectual property rights around the world may be inadequate to obtain a significant commercial advantage from the intellectual property that it develops or licenses.

Third parties may assert rights to inventions the Company develops or otherwise regards as its own.

Third parties may in the future make claims challenging the inventorship or ownership of the Company or its licensors' intellectual property. The Company has written agreements with R&D partners that provide for the ownership of intellectual property arising from the relationship. Some agreements provide that the Company must negotiate certain commercial rights at a later date and others may not include or clearly address the allocation of intellectual property rights. If the Company cannot successfully negotiate sufficient ownership and commercial rights to the inventions that result from the Company's use of a third-party partner's materials, or if disputes otherwise arise with respect to the intellectual property developed through the use of a partner's samples, the Company may be limited in its ability to capitalize on the full market potential of these inventions. In addition, the Company may face claims by third parties that its agreements with employees, contractors, or consultants obligating them to assign intellectual property to it are ineffective or are in conflict with prior or competing contractual obligations of assignment. Litigation may be necessary to resolve an ownership dispute, and if the Company is not successful, it may be precluded from using certain intellectual property and associated products and technology, which could have a material adverse effect on its business.

In addition, the research resulting in certain of the Company's in-licensed patent rights and technology was funded in part by the United States government. As a result, the United States government has certain rights to such patent rights and technology, which include march-in rights. When new technologies are developed with government funding, the government generally obtains certain rights in any resulting patents, including a non-exclusive license authorizing the government to use the invention or to have others use the invention on its behalf. The government can exercise its march-in rights if it determines that action is necessary because the Company fails to achieve practical application of the government-funded technology, or because action is necessary to alleviate health or safety needs, to meet requirements of federal regulations, or to give preference to United States industry. Any exercise by the government of any of the foregoing rights could have a material adverse effect on the Company's business.

Any infringement, misappropriation, or other violation by the Company of intellectual property rights of others may prevent or delay its product development efforts and may prevent or increase the costs of successful commercialization by the Company, its customers or its licensees.

The Company's success will depend in part on its ability to operate without infringing, misappropriating, or otherwise violating the intellectual property and proprietary rights of third parties. The Company cannot assure that its business operations, products developed, historically developed agriculture-focused product candidates, and methods and the business operations, products, product candidates and methods of its customers or licensees do not or will not infringe, misappropriate, or otherwise violate the patents or other intellectual property rights of third parties.

The biotechnology industry is characterized by extensive litigation regarding patents and other intellectual property rights. Other parties may allege that the Company's product development activities, products, product candidates or the use of its technologies infringe, misappropriate, or otherwise violate patent claims or other intellectual property rights held by them or that it is employing their proprietary technology without authorization. Patent and other types of intellectual property litigation can involve complex factual and legal questions, and their outcome is uncertain. Any claim relating to intellectual property infringement that is successfully asserted against the Company may require it to pay substantial damages, including treble damages and attorneys' fees if it or its partners are found to be willfully infringing another party's patents, for past use of the asserted intellectual property and royalties and other consideration going forward if the Company is forced to take a license. Such a license may not be available on commercially reasonable terms, or at all. Even if the Company was able to obtain a license, it could be non-exclusive, thereby giving its competitors access to the same intellectual property rights or technologies licensed to the Company. In addition, if any such claim were successfully asserted against the Company and it could not obtain a license, the Company or its partners may be forced to stop or delay developing, manufacturing, selling or otherwise commercializing its products, product candidates or other infringing technology, or those it develops with its R&D partners.

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Even if the Company is successful in these proceedings, it may incur substantial costs and divert management time and attention pursuing these proceedings, which could have a material adverse effect on the organization. Furthermore, because of the substantial amount of discovery required in connection with intellectual property litigation, there is a risk that some of the Company's confidential information could be compromised by disclosure during this type of litigation. In addition, there could be public announcements of the results of hearings, motions or other interim proceedings or developments and if securities analysts or investors perceive these results to be negative, it could have a substantial adverse effect on the price of the Company's common stock. Such litigation or proceedings could substantially increase the Company's operating losses and reduce the resources available for development activities or any future sales, marketing, or distribution activities. If the Company is unable to avoid infringing the patent rights of others, it may be required to seek a license, defend an infringement action, or challenge the validity of the patents in court, or redesign its products. Patent litigation is costly and time consuming. The Company may not have enough resources to bring these actions to a successful conclusion.

Any of these risks coming to fruition could have a material adverse effect on the Company's business, results of operations, financial condition, and prospects.

The Company may be unsuccessful in developing, licensing, or acquiring intellectual property that may be required to develop and commercialize its product candidates.

The Company's programs may involve additional product candidates that may require the use of intellectual property or proprietary rights held by third parties; the growth of its business may depend in part on its ability to acquire, in-license or use these intellectual property and proprietary rights. However, the Company may be unable to acquire or in-license any third-party intellectual property or proprietary rights that may be key to development. Even if the Company can acquire or in-license such rights, it may be unable to do so on commercially reasonable terms. The licensing and acquisition of third-party intellectual property and proprietary rights is a competitive area, and several more established companies are also pursuing strategies to license or acquire third-party intellectual property and proprietary rights that the Company may consider attractive or necessary. These established companies may have a competitive advantage over the Company due to their size, capital resources and agricultural development and commercialization capabilities.

In connection with his appointment as chair of the Scientific Advisory Board, Dr. Dan Voytas is no longer the Company's Chief Science Officer, a position he held from the Company's founding in January 2010 through February 2021. The consulting agreement with Dr. Voytas, while he served as Chief Science Officer, and the current engagement letter with Dr. Voytas, as chair of the Scientific Advisory Board, each generally obligates Dr. Voytas to assign to the Company any intellectual property solely or jointly conceived, developed or reduced to practice by him in the course of the performance of his services to the Company. However, the Company does not have any rights, including any assignment or right of first refusal rights, to intellectual property conceived, developed, or reduced to practice by Dr. Voytas outside the course of the performance of his services to the Company, including in connection with his employment at the University of Minnesota.

In addition, companies that perceive the Company to be a competitor may be unwilling to assign or license intellectual property and proprietary rights to the Company. The Company also may be unable to license or acquire third-party intellectual property and proprietary rights on terms that would allow it to make an appropriate return on its investment or at all. If the Company is unable to successfully acquire or in-license rights to required third-party intellectual property and proprietary rights or maintain the existing intellectual property and proprietary rights the Company has, it may have to cease development of the relevant program, product, or product candidate, which could have a material adverse effect on its business.

The Company licenses a portion of its intellectual property from Collectis, its largest stockholder, and the University of Minnesota.

The Company relies on the intellectual property it licenses from Collectis and the University of Minnesota. If it does not comply with obligations under the license agreements, it may be subject to damages, which may be significant, and in some cases Collectis and/or the University of Minnesota may have the right to terminate the license agreement. Any termination of the Company's license agreement with Collectis or the University of Minnesota could have a material adverse effect on its business and results of operations.

Moreover, any enforcement of the licensed intellectual property could be subject to challenge by third parties and if any such challenge is successful, such intellectual property could be narrowed in scope or held to be invalid or unenforceable, which could materially impair any competitive advantage afforded to the Company by such intellectual property. There can be no assurance that Collectis or the University of Minnesota will prosecute and maintain such intellectual property in the best interests of the Company's business or at all, and, if Collectis or the University of Minnesota fails to properly prosecute and maintain such intellectual property, the Company could lose rights to such intellectual property, which would materially impair any competitive advantage afforded to it by such intellectual property. For more information regarding the Company's license agreement with Collectis or the license agreement between Collectis and the University of Minnesota, please see "Business—Intellectual Property."

Risks Related to Regulatory and Legal Matters

Ethical, legal, and social concerns about products using genetically modified or edited plant cells could limit or prevent the use of the Company's products and technologies and could harm its business.

The Company's technologies and products involve the use of genetically modified or edited plant cells. Public perception about the safety of, and ethical, legal, or social concerns over, genetically engineered products, including genetically modified or edited plant genetic materials, could affect public acceptance of the Company's products. If the Company is not able to overcome any such concerns relating to its products, these technologies may not be accepted by its customers or end-users of the customers' products that incorporate the Company's products. In addition, the use of genetically modified or edited plant cells has in the past received negative publicity, which could lead to greater regulation or restrictions on imports of the Company's products. If the Company's technologies and products are not accepted by its customers or their end-users due to negative publicity or lack of public acceptance, the Company's business could be materially harmed.

The Company may become subject to increasing regulation as a result of its hemp development activities, which could require it to incur additional costs associated with compliance requirements.

The Company has developed hemp product candidates and is currently exploring licensing opportunities in the crop. Hemp is legally distinct from marijuana and recognized as an agricultural crop by the United States government. Federal and state laws and regulations on hemp address production, monitoring, manufacturing, distribution, and laboratory testing to ensure that the hemp has a THC concentration of not more than 0.3 percent on a dry weight basis. Federal laws and regulations may also address the transportation or shipment of hemp or hemp products. It is difficult to predict whether regulators, such as the USDA or the MDA, will alter the manner in which they interpret existing federal and state laws and regulations on hemp or institute new regulations, or otherwise modify regulations in a way that will render compliance more burdensome. As the Company continues to pursue hemp as a product candidate, it may become subject to increasing regulation particular to hemp, which could require it to incur additional costs associated with compliance requirements.

The regulatory environment outside the United States varies greatly from jurisdiction to jurisdiction and there is less certainty how the Company's products will be regulated.

The regulatory environment around gene editing and genetic modification in plants is greatly uncertain outside of the United States and varies greatly from jurisdiction to jurisdiction. Each jurisdiction may have its own regulatory framework regarding genetically modified and gene edited products and materials, which continue to evolve, and which may encapsulate the Company's products. To the extent regulatory frameworks outside of the United States are not receptive to the Company's genetic modification and gene editing technologies, this may limit its ability to expand into other global markets.

Complying with the regulatory requirements outside the United States will be costly and time-consuming, and there is no guarantee the Company will be able to commercialize its products outside the United States. Such regulatory requirements may also inhibit the Company's ability to market and sell its products to customers located outside of the United States.

The Company cannot predict whether or when any jurisdiction will change its regulations with respect to its products. Advocacy groups have engaged in publicity campaigns and filed lawsuits in various countries against companies and regulatory authorities, seeking to halt regulatory approval or clearance activities or influence public opinion against genetically engineered and/or gene edited products. In addition, governmental reaction to negative publicity concerning the Company's products could result in greater regulation of genetic research and derivative products or regulatory costs that render its products cost prohibitive.

The scale of the industries in which the Company intends as the end markets for its products may make it difficult to monitor and control the distribution of the Company's products. As a result, the Company's products may be sold inadvertently within jurisdictions where they are not approved for distribution. Such sales may lead to regulatory challenges or lawsuits against the Company, which could result in significant expenses and management attention.

The Company may use biological materials in its business and is subject to numerous environmental, health and safety laws and regulations. Compliance with such laws and regulations and any claims relating to improper handling, storage or disposal of these materials could be time consuming and costly.

The Company is subject to numerous federal, state, local and foreign environmental, health and safety laws and regulations, including those governing laboratory procedures, the handling, use, storage, treatment, manufacture and disposal of hazardous materials and wastes, discharge of pollutants into the environment and human health and safety matters. The Company's R&D processes involve the controlled use of hazardous materials, including biological materials. The Company may be sued for any injury or contamination that results from its use or the use by third parties of these materials, or may otherwise be required to remediate such contamination, and its liability may exceed any insurance coverage and its total assets. Compliance with environmental, health and safety laws and regulations may be expensive and may impair the Company's R&D efforts. If the Company fails to comply with these requirements, it could incur substantial costs and liabilities, including civil or criminal fines and penalties, clean-up costs or capital expenditures for control equipment or operational changes necessary to achieve and maintain compliance. In addition, the Company cannot predict the impact on its business of new or amended environmental, health and safety laws or regulations or any changes in the way existing and future laws and regulations are interpreted and enforced. These current or future laws and regulations may impair the Company's research, development or production efforts or result in increased expense of compliance.

The regulatory environment in the United States is uncertain and evolving and may impact our customers' willingness to utilize the Company's products.

The Company anticipates that its customers will be responsible for any regulatory activities associated with development of compounds commissioned from the Company. Such regulatory activities may involve significant expense and changes in applicable regulatory requirements could result in substantial increases in the time and costs associated with such activities. It is difficult for the Company and its customers to predict whether regulators, such as the USDA or FDA, will alter the manner in which they interpret existing laws and regulations or institute new regulations, or otherwise modify regulations in a way that will subject products utilizing the Company's synthetic biology products to more burdensome standards, thereby substantially increasing the time and costs associated with the regulatory activities of its customers. If the regulatory burden and expense required for the utilization of the Company's products becomes too significant, its customers may seek alternatives that involve lesser regulatory costs.

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If the Company is sued for defective products and if such lawsuits were determined adversely, it could be subject to substantial damages, for which insurance coverage is not available.

The Company expects that some applications of its products will be used as components of customers' end products and therefore its success will be tied, in part, to the success of such end products. The Company cannot be certain that material performance problems, defects, errors or delays will not arise in its products or the end products in which they are used as components.

The Company expects to provide warranties that its products will meet customer specifications. The costs incurred in correcting any failures to meet such specifications may be substantial and could adversely affect the Company's business. If the Company's products or the end products of which they are components, contain defects or are delayed, it may experience:

- a failure to achieve commercial traction with the Company's target customers;
- loss of customer contracts or delays in fulfilling the Company's contractual obligations;
- damage to the Company's brand reputation;•product recalls or replacements;
- inability to attract new customers and collaboration opportunities;
- diversion of resources from the Company's R&D and sales activities; and
- Legal and regulatory claims against the Company, including product liability claims, which could be costly, time consuming to defend, result in substantial damages and result in reputational damage.

Risks Related to Ownership of the Company's Common Stock and its Relationship with Collectis

Although Collectis and its affiliates hold less than a majority of the Company's outstanding common stock, Collectis possesses certain rights that prevent other stockholders from influencing significant decisions.

As of March 1, 2023, Collectis holds 48.5% of the outstanding Common Stock of the Company. At present, through its stock ownership, together with its enumerated rights under the stockholders agreement, Collectis remains Calyxt's controlling stockholder. Pursuant to the stockholders' agreement between the Company and Collectis, Collectis continues to retain substantial rights with respect to the Company for so long as it beneficially owns at least 15 percent of the outstanding shares of the Company's common stock (Continuing Collectis Rights). Accordingly, Collectis will continue to exercise control with respect to the Continuing Collectis Rights even after Collectis' stock ownership is substantially reduced, whether through dilution or otherwise, and, while Collectis' stock ownership serves as a source of voting power, the full scope of Collectis' continuing rights relative to the Company is not directly proportional to its ownership interest in Calyxt's common stock.

The Continuing Collectis Rights include the right to nominate a number of designees for the Company's board of directors representing a majority of the directors, to designate the Chairman of the board of directors, and to have at least one designated director serve on each board committee. In addition, the Continuing Collectis Rights include information rights for Collectis, as well as approval rights over a significant number of key aspects of the Company's operations and management, including certain changes to Calyxt's constitutive documents, the making of any regular or special dividends, the commencement of any voluntary bankruptcy proceeding or any consent to any bankruptcy proceeding, any appointment to or removal from the board of directors, and the consummation of any public or private offering, merger, amalgamation or consolidation of Calyxt, the spinoff of a business of the Company, or any sale, conveyance, transfer or other disposition of Calyxt's assets. The Continuing Collectis Rights are incorporated into, and form a part of, the Company's certificate of incorporation and bylaws, which makes any amendment, repeal, or modification of such rights burdensome.

As of the date on which Collectis and its affiliates no longer beneficially owned more than 50 percent of the outstanding shares of Common Stock of the Company:

- the Company's Board of Directors switched to a staggered board divided into three classes, with directors serving three-year terms;
- no director may be removed by the stockholders except for cause upon a majority vote of the stockholders;
- stockholder action may only be taken upon a majority vote of stockholders at a duly noticed stockholder meeting called in accordance with the Company's bylaws and may not be taken by written consent without a meeting;
- special stockholder meetings may be called only by a majority of the entire board of directors and not by the stockholders;
- the Company became governed by Section 203 of the Delaware General Corporation Law, which, subject to certain exceptions, prohibits a public Delaware corporation from engaging in a business combination (as defined in such section) with an "interested stockholder" (defined generally as any person who beneficially owns 15 percent or more of the outstanding voting stock of such corporation or any person affiliated with such person) for a period of three years following the time that such stockholder became an interested stockholder, unless certain conditions are satisfied; and

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- except as otherwise permitted by applicable law, specified provisions of the Company's Certificate of Incorporation and Bylaws, including those described in this risk factor, may not be repealed, amended, or modified unless such action is approved by a super-majority (66 2/3 percent) stockholder vote of all outstanding voting securities.

In addition, certain provisions of the Company's certificate of incorporation, bylaws, and other agreements may now make it more difficult for the Company's stockholders to influence its decisions or for a third-party to acquire control of the Company, or may discourage a third-party from attempting to acquire control of the Company, in each case, even if these actions were considered beneficial by many stockholders or might involve transactions in which the Company's stockholders might otherwise receive a premium for their shares of the Company's common stock. Further, these provisions could limit the price that investors might be willing to pay in the future for shares of the Company's common stock, possibly depressing the market price of its common stock. As a result, stockholders may be limited in their ability to obtain a premium for their shares. As a result of the foregoing rights, Collectis currently possesses the right to exert extensive influence over important operational decisions of the Company. The extent of Collectis' influence and the nature of its rights could prevent other stockholders from influencing, or seeking to influence, significant decisions of the Company.

Although the Company is no longer considered to be a "controlled company" under the Nasdaq's corporate governance rules, the Company is able to phase-in full compliance with applicable independence requirements.

A "controlled company" pursuant to the Nasdaq's corporate governance rules is a company of which more than 50% of the voting power is held by an individual, group, or another company. Because Collectis no longer holds more than 50% of the voting power of the Company, the Company is no longer considered to be a "controlled company." Pursuant to the controlled company exceptions, the Company's Nominating and Corporate Governance Committee and its Compensation Committee are not currently comprised solely of independent directors. The Company intends, subject to applicable phase-in requirements, to fully comply with the Nasdaq's corporate governance rules. As a result of the applicable phase-in requirements, until the Nominating and Corporate Governance Committee and its Compensation Committee become fully independent, stockholders will continue to not have the same protections afforded to stockholders of companies that have fully independent committees.

If the Company is unable to maintain compliance with Nasdaq's listing requirements, its common stock may be delisted from The Nasdaq Capital Market, which could have a material adverse effect on the Company's financial condition and could make it more difficult for holders of the Company's common stock to sell their shares.

On October 4, 2022, the Company's application to list its common stock on The Nasdaq Capital Market (Nasdaq) was approved by Nasdaq. The Company's common stock was previously listed on The Nasdaq Global Market. The Company is therefore subject to the continued listing requirements of The Nasdaq Capital Market, including requirements with respect to the market value of publicly held shares, market value of listed shares, minimum bid price per share, and minimum stockholder's equity, among others, and requirements relating to board and committee independence. If the Company fails to satisfy one or more of these continued listing requirements, it may be delisted from The Nasdaq Capital Market.

Delisting from Nasdaq, or the possibility of such delisting, may adversely affect the Company's ability to raise additional financing through the public or private sale of equity securities, may significantly affect the ability of investors to trade the Company's securities, and may negatively affect the value and liquidity of the Company's common stock. Delisting, or the possibility of such delisting, also could have other negative results, including the potential loss of investor confidence or interest in business development opportunities.

At the Company's 2022 annual meeting of stockholders on June 1, 2022, the Company's stockholders approved an amendment to the Company's amended and restated certificate of incorporation to effect a reverse stock split of the Company's shares of common stock at a ratio not less than 2-to-1 and not greater than 10-to-1, with the exact ratio set within that range at the discretion of the Company's board of directors. However, there can be no assurance that the reverse stock split, if implemented, will increase the market price of the Company's common stock in proportion to the reduction in the number of shares of the Company's common stock outstanding before the reverse stock split or result in a permanent increase in the market price. In addition, it is possible that the reduced number of issued shares of common stock resulting from a reverse stock split could adversely affect the liquidity of the Company's common stock.

If the Company's common stock becomes subject to the penny stock rules, it would become more difficult to trade shares of the Company's common stock.

The SEC has adopted rules that regulate broker-dealer practices in connection with transactions in penny stocks. Penny stocks are generally equity securities with a price of less than \$5.00, other than securities registered on certain national securities exchanges or authorized for quotation on certain automated quotation systems, provided that current price and volume information with respect to transactions in such securities is provided by the exchange or system. If Calyxt does not retain its listing on Nasdaq and if the price of the Company's common stock is less than \$5.00, the Company's common stock may be deemed a penny stock. The penny stock rules require a broker-dealer, before a transaction in a penny stock not otherwise exempt from those rules, to deliver a standardized risk disclosure document containing specified information. In addition, the penny stock rules require that before effecting any transaction in a penny stock not otherwise exempt from those rules, a broker-dealer must make a special written determination that the penny stock is a suitable investment for the purchaser and receive: (i) the purchaser's written acknowledgment of the receipt of a risk disclosure statement; (ii) a written agreement to transactions involving penny stocks; and (iii) a signed and dated copy of a written suitability statement. These disclosure requirements may have the effect of reducing the trading activity in the secondary market for the Company's common stock, and therefore stockholders may have difficulty selling their shares of the Company's common stock.

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The market price of the Company's common stock has been and could remain volatile, which could adversely affect the market price of its common stock.

The market price of the Company's common stock has experienced, and may continue to experience, volatility in response to various factors, such as:

- the proposed Transactions;
- the Company's strategic initiatives and technologies;
- fluctuations in the Company's financial results or outlook or peer companies;
- changes in estimates of the Company's financial results or recommendations by securities analysts;
- changes in the Company's capital structure, such as future issuances of common stock or the incurrence of debt;
- announcements by the Company or its competitors of significant contracts, acquisitions or strategic partnerships;
- regulatory developments in the United States, and/or other foreign countries;
- litigation involving the Company, its general industry or both;
- additions or departures of key personnel;
- investors' general perception of the Company; and
- changes in general economic, industry and market conditions affecting the Company or Collectis.

Furthermore, stock markets have experienced price and volume fluctuations that have affected, and continue to affect, the market prices of equity securities of many companies. These fluctuations often have been unrelated or disproportionate to the operating performance of those companies. These broad market fluctuations, as well as general economic, political and market conditions, such as recessions, interest rate changes and international currency fluctuations, may negatively affect the market price of the Company's common stock.

Future sales and issuances of the Company's common stock could result in additional dilution of the percentage ownership of its stockholders and could cause the stock price to decline.

From time to time, the Company has sold a substantial number of shares of its common stock, which results in dilution to the Company's stockholders. In the future, the Company may sell additional equity securities in one or more transactions at prices and in a manner the Company determines from time-to-time, to finance its business operations and investments. To the extent the Company raises capital by issuing equity securities, its stockholders may experience substantial dilution.

If Collectis sells a substantial number of shares of the Company's common stock in either the private or public markets, the market price of the Company's common stock could decrease materially. The perception in the public market that these stockholders might sell the Company's common stock could also depress the market price of its common stock and could impair the Company's future ability to obtain capital, especially through an offering of equity securities.

Shares of the Company's common stock issued or issuable under its equity incentive plans to employees and directors have been registered on Form S-8 registration statements and may be freely sold in the public market upon issuance.

Future sales of common stock by Collectis or others of the Company's common stock, or the perception that such sales may occur, could depress the market price of its common stock.

As of December 31, 2022, Collectis owned 49.1 percent of the Company's outstanding shares of common stock. Future sales of these shares in the public market will be subject to the volume and other restrictions of Rule 144 under the Securities Act for so long as Collectis is deemed to be the Company's affiliate, unless the shares to be sold are registered with the SEC. If Collectis were to register its shares with the SEC, it could dispose of them at will. The Company is unable to predict with certainty whether or when Collectis will sell a substantial number of shares of the Company's common stock. The sale by Collectis of a substantial number of shares, or a perception that such sales could occur, could significantly reduce the market price of the Company's common stock.

Collectis and the Company's directors who have relationships with Collectis may have conflicts of interest with respect to matters involving the company.

The Company's certificate of incorporation provides that none of Collectis, or any of its officers, directors, agents, shareholders, members, partners, subsidiaries (other than Calyxt and any future subsidiaries) and their affiliates will be liable to the Company or its stockholders for breach of any fiduciary duty by reason of the fact that Collectis or any such individual directs a corporate opportunity to Collectis or its affiliates instead of the Company, or does not communicate information regarding a corporate opportunity to the Company that such person or affiliate has directed to Collectis or its affiliates.

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The Company's certificate of incorporation also provides that neither Collectis nor any of its affiliates or any of the Company's nonemployee directors will have any duty to refrain from engaging in a corporate opportunity in the same or similar lines of business in which it or any future subsidiaries now engage or propose to engage or otherwise competing with it or any of its future subsidiaries.

The Company's license agreement with Collectis does not restrict Collectis from competing with the Company generally. Collectis could develop and commercialize agricultural and food products that may compete with the Company's current products or products in its pipeline using Collectis intellectual property or technologies other than the gene editing technologies Collectis has licensed to the Company. Collectis could also use the licensed gene editing technologies to develop and commercialize products involving animals and animal cells and these animal-based products may be competitive with the Company's plant-based products in certain circumstances.

One of the Company's directors, Laurent Arthaud, is also a director of Collectis, and Collectis has the right to designate additional directors to serve on the Calyxt board of directors. Mr. Arthaud and any other directors designated by Collectis who have relationships with Collectis will have fiduciary duties to the Company and in addition will have duties to Collectis.

Accordingly, there may be real or apparent conflicts of interest with respect to matters affecting both the Company and Collectis, whose interests, in some circumstances, may be different than the interests of other stockholders or its interests.

The Company's ability to use its net operating losses to offset future taxable income may be subject to certain limitations.

As of December 31, 2022, the Company had approximately \$239.2 million of net operating losses, or NOLs, for federal and state income tax purposes, which may be available to offset federal income tax liabilities in the future. In addition, the Company may generate additional NOLs in future years. The Company has established a full valuation allowance for its deferred tax assets, including NOLs, due to the uncertainty that enough taxable income will be generated to utilize the assets.

The Company's ability to utilize its NOLs may be limited if it experiences an "ownership change" as defined in Section 382 (Section 382) of the Internal Revenue Code of 1986, as amended. An ownership change generally occurs if certain direct or indirect five percent shareholders increase their aggregate percentage ownership of a corporation's stock by more than 50 percentage points over their lowest percentage ownership at any time during the testing period, which is generally the three-year period preceding any potential ownership change.

There is no assurance that the Company will not experience a current or future ownership change under Section 382 that would significantly limit or possibly eliminate its ability to use its NOLs. Current or potential future transactions by the Company involving the sale or issuance of its common stock, or the exercise of Common Warrants (as defined below), or a combination of such transactions, may result in ownership changes under Section 382. In addition, the Company may experience ownership changes as a result of shifts in the direct or indirect ownership of its stock, some of which may be outside of its control.

Under Section 382, a current or future ownership change would subject the Company to an annual limitation that applies to the amount of pre-ownership change NOLs that may be used to offset post-ownership change taxable income. This limitation is generally determined by multiplying the value of a corporation's stock immediately before the ownership change by the applicable long-term tax-exempt rate. Any unused annual limitation may, subject to certain limits, be carried over to later years, and the limitation may under certain circumstances be increased by built-in gains in the assets held by such corporation at the time of the ownership change. This limitation could cause the Company's U.S. federal income taxes to be greater, or to be paid earlier, than they otherwise would be, and could cause some of its NOLs to expire unused. Similar rules and limitations may apply for state income tax purposes. There is also a risk that future legal or regulatory changes may limit the Company's ability to use current or future NOLs to offset its future federal income tax liabilities.

Risk Related to the Organization and Governance of the Company

Changes to the Company's strategic business focus have placed significant demands on the Company's management and the Company's infrastructure.

Since the Company's IPO on July 25, 2017, the strategic focus of the business has undergone changes. In October 2021, the Company announced the launch of a strategic initiative which focused it on engineering synthetic biology solutions. Most recently, in light of the proposed Transactions, the Company has focused its current business activities on ensuring it has cash sufficient to achieve a closing of the proposed Transactions. Accordingly, Calyxt has taken additional steps to reduce its operating expenses. The Company has focused its operations on: scaling production of its Plant Cell Matrix with its manufacturing partner, Evologic; licensing efforts with respect to its PlantSpring technology and plant traits, including the TALEN technology; and continuing to progress its current customer projects. The Company's three key customer projects are (1) its research collaboration with a leading global food ingredient manufacturer to develop a soybean trait to serve as an alternative to palm oil, (2) its plant-based chemistry pilot project for a major consumer packaged goods company, and (3) supporting late-stage development activities for its improved digestibility alfalfa trait, which was developed with and licensed to S&W Seed Company.

The changes to the Company's strategic focus has placed, and may continue to place, significant demands on the Company's management and its operational and financial infrastructure. Managing a significant change in business focus and negotiating the Transactions while overseeing day-to-day operations, each requires significant expenditures and allocation of valuable management resources. If the Company fails to achieve the necessary level of efficiency in its organization as it evolves, its business, financial condition and results of operations would be adversely impacted.

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The Company depends on key management personnel and attracting and retaining other qualified personnel, and its business could be harmed if it loses key management personnel. In addition, Calyxt is substantially dependent on its remaining employees to facilitate the consummation of the Transactions.

The Company's success depends to a significant degree upon the technical skills and continued service of certain members of its management and other key employees. Although Calyxt has significantly streamlined its operations, the loss of the services of the Company's management or key employees may delay or prevent the timely and successful execution of its business strategies and objectives and may have a negative impact on the Company's ability to facilitate the consummation of the Transactions. The Company's business is dependent on its ability to recruit and maintain a highly skilled and educated workforce with expertise in a range of disciplines, including biology, biochemistry, plant genetics, mathematics, and other subjects relevant to its operations. In the event the Transactions are not consummated, the Company's ability to successfully implement its strategic focus will also depend on recruiting and retaining personnel with the necessary background and ability to understand its systems at a technical level to effectively identify and sell to potential new customers. Competition for these highly skilled employees is intense.

If for any reason the Transactions are not completed and the Calyxt Board seeks to continue to operate Calyxt's business, Calyxt will face challenges resulting from its streamlined personnel, who will need to continue to implement Calyxt's managerial, operational, and financial systems, manage its facilities, and progress customer projects and licensing efforts. As a result, Calyxt's management may need to divert a disproportionate amount of its attention away from Calyxt's day-to-day strategic and operational activities and devote a substantial amount of time to managing organizational changes. Further, cash-focused headcount reduction measures may yield unintended consequences, such as attrition beyond Calyxt's intended reduction in headcount and reduced employee morale. In addition, reductions in the size of Calyxt may result in employees who were not affected by the reductions in headcount seeking alternate employment. The loss of the services of certain employees could potentially harm Calyxt's ability to continue its day-to-day business operations, including the progression of its key customer projects, or to fulfill its reporting obligations as a Nasdaq-listed public company.

In addition, cost reduction and cash-focused measures that Calyxt has undertaken may result in weaknesses in Calyxt's infrastructure and operations, an inability to effectively execute on customer acquisition and business development efforts, loss of business opportunities, reduced productivity among remaining employees, and challenges in complying with legal and regulatory requirements.

There can be no assurance that the Company will be successful in attracting or retaining such personnel and the failure to do so could have a material adverse effect on its business, financial condition, and results of operations.

The Company's business and operations would suffer in the event of computer system failures, cyber-attacks, or a deficiency in its cyber-security.

Increased information systems security threats, cyber- or phishing-attacks and more sophisticated, targeted computer invasions pose a risk to the security of the Company's systems and networks, and the confidentiality, availability, and integrity of its data, operations, and communications, and the exposure to such risks is enhanced in the Company's remote work environment as a result of the COVID-19 pandemic. Cyber-attacks against the Company's technology platform and infrastructure could result in exposure of confidential information, the modification of critical data, and/or the failure of critical operations. Likewise, improper or inadvertent employee behavior, including data privacy breaches by employees and others with permitted access to the Company's systems, may pose a risk that sensitive data may be exposed to unauthorized persons or to the public. While the Company attempts to mitigate these risks by employing a number of measures, including security measures, employee training, comprehensive monitoring of networks and systems, maintenance of backup and protective systems, and incident response procedures, if these measures prove inadequate, the Company could be adversely affected by, among other things, loss or damage of intellectual property, proprietary and confidential information, data integrity, and communications or customer data, increased costs to prevent, respond to, or mitigate these cyber security threats and interruptions of its business operations.

The Company's business activities are currently conducted at a limited number of locations, which makes it susceptible to damage or business disruptions caused by natural disasters or acts of vandalism.

The Company's current headquarters and R&D facilities, which include an office, labs, the BioFactory pilot facility, greenhouses, and field-testing plots are in Roseville, Minnesota. The Company takes precautions to safeguard its facilities, including insurance, health and safety protocols, and off-site storage of critical research results and computer data. Although the Company maintains levels of insurance that it believes are customary for its industry, its insurance policies may not cover certain losses, or losses may exceed the Company's coverage limits. A natural disaster, such as a hurricane, drought, fire, flood, tornado, earthquake, or other intentional or negligent acts, including acts of vandalism, could damage or destroy the Company's equipment, inventory, development projects, data, and cause it to incur significant additional expenses to repair or replace the damaged physical facilities, which increase the development schedule for the products under development for customers.

Item 1B. Unresolved Staff Comments

None.

Item 2. Properties

The Company leases a 44,000 square-foot corporate headquarters facility in Roseville, Minnesota. The facility includes office, research laboratories, the first pilot BioFactory production system, greenhouses, and outdoor growing plots. The lease has an initial term that began in May 2018 and expires on the last day of May 2038, with monthly base rent of \$0.1 million for the first five years with scheduled rent increases every five years thereafter until the end of the lease. The Company has the option to extend the term of the lease for four successive additional renewal terms of five years each commencing at the expiration date of the initial term, with monthly base rent set for each of these renewal terms. Collectis has guaranteed all obligations under the lease, as discussed in Note 8 to the Consolidated Financial Statements, “Leases, Other Commitments, and Contingencies”.

Item 3. Legal Proceedings

The Company is not a party to any material pending legal proceedings as of December 31, 2022. From time to time, the Company may be involved in legal proceedings arising in the ordinary course of business.

Item 4. Mine Safety Disclosures.

Not Applicable.

PART II

Item 5. Market for Registrant’s Common Equity, Related Stockholder Matters, and Issuer Purchases of Equity Securities

The Company’s common stock has traded on the NASDAQ Global Market under the ticker symbol of CLXT since its IPO on July 25, 2017. Prior to that time, there was no established public trading market for the Company’s common stock.

Holder of Common Stock

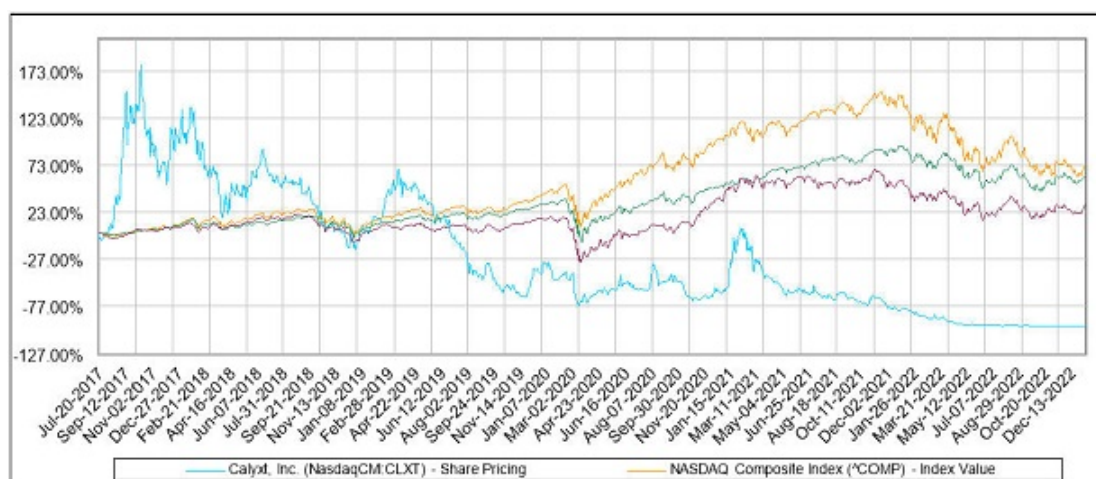
As of February 28, 2023, there were 89 holders of record of 49,376,160 outstanding shares of the Company’s common stock. The number of holders of record of the Company’s common stock does not reflect the number of beneficial holders whose shares are held by banks, depositaries, brokers, or other nominees.

Dividends

The Company has not paid dividends on its common stock and does not currently plan to pay any cash dividends in the foreseeable future.

Stock Performance Graph

The following graph shows a comparison from July 25, 2017 (the date the Company’s common stock commenced trading on The NASDAQ Global Market) through December 31, 2022, of the cumulative total return for its common stock, the Russell 2000 Index, the Standard & Poor’s 500 Stock Index (S&P 500 Index) and the NASDAQ Composite Index (NASDAQ Composite). The graph assumes that \$100 was invested at the close of the market on July 20, 2017, in the Company’s common stock, the S&P 500 Index and the NASDAQ Composite, and data for the S&P 500 Index and the NASDAQ Composite assumes reinvestments of dividends. The stock price performance of the following graph is not necessarily indicative of future stock price performance.



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This performance graph shall not be deemed soliciting material or to be filed with the SEC for purposes of Section 18 of the Exchange Act, or otherwise subject to the liabilities under that Section, and shall not be deemed to be incorporated by reference into any of the Company's filings under the Securities Act or the Exchange Act.

Securities Authorized for Issuance under Equity Compensation Plans

The following table sets forth certain information related to the Company's compensation plans under which shares of its common stock are authorized for issuance as of December 31, 2022:

<u>Plan Category</u>	<u>(A) Number of securities to be issued upon exercise of outstanding options, warrants and rights</u>	<u>Weighted-average exercise price of outstanding options, warrants and rights</u>	<u>Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in column (A))</u>
Equity compensation plans approved by security holders ¹	7,600,659 ²	\$ 7.35 ³	3,112,568 ⁴
Equity compensation plans not approved by security holders ⁵	600,000	—	—
Total	8,200,659	\$ 7.35	3,112,568

¹ Includes the Calyxt, Inc. Equity Incentive Plan (2014 Plan) and the 2017 Omnibus Plan (2017 Plan).

² Includes stock options, RSUs, and the 2022 grant of PSUs. The number of shares underlying the 2022 PSUs included in these amounts is the maximum amount that holders are eligible to earn if the applicable performance metrics are fully achieved under terms of the PSU awards.

³ Represents the weighted average exercise price of options outstanding under the 2014 Plan and the 2017 Plan. Does not take into account outstanding RSUs and PSUs which, when settled, will be settled in shares of the Company's common stock on a one-for-one basis at no additional cost.

⁴ Of these shares, none are available for future issuance from the 2014 Plan and 3,112,568 remain available for future issuance from the 2017 Plan. The total number of Shares available for issuance under the 2017 Plan will be increased on the first day of each Company fiscal year following the effective date of the Company's IPO in an amount equal to the least of (i) 2,000,000 Shares, (ii) 5% of outstanding Shares on the last day of the immediately preceding fiscal year or (iii) such number of Shares as determined by the Board in its discretion. All these shares are available for issuance other than upon exercise of options, warrants, or rights.

⁵ Includes the Calyxt, Inc. 2021 Employee Inducement Plan (Inducement Plan). In July 2021, the Company adopted the Inducement Plan, pursuant to which shares of common stock are issuable upon the settlement of performance stock units (PSUs) granted to Mr. Michael A. Carr in July 2021 as a material inducement to accept employment as the Company's President and Chief Executive Officer. The PSUs will vest if the Company's stock remains above three specified price levels for 30 calendar days over the three-year performance period. The PSUs will be settled in unrestricted shares of the Company's common stock on the vesting date.

Repurchases of Equity Securities by the Issuer or Affiliate Purchasers

There were no repurchases of the Company's equity securities, including any repurchases by affiliates, for the year ended December 31, 2022.

Unregistered Sales of Equity Securities

None.

Item 6. [RESERVED].

Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations

EXECUTIVE OVERVIEW

Calyxt is a plant-based synthetic biology company. The Company leverages its proprietary PlantSpring technology platform to engineer plant metabolism to produce innovative, high-value, and sustainable materials and products for use in helping customers meet their sustainability targets and financial goals. In October 2021, the Company announced the launch of a strategic initiative which focused is on engineering synthetic biology solutions through its PlantSpring platform for manufacture using its proprietary and differentiated BioFactory production system for a diverse base of target customers across a range of end markets, including the cosmeceutical, nutraceutical, and pharmaceutical industries. The Company also commercializes its PlantSpring technology platform by licensing elements of the platform and historically developed traditional agriculture seed-trait product candidates, as well as selectively developing product candidates for customers in traditional agriculture.

The business is described in greater detail in “Item 1. Business—Company Overview.”

The Company is an early-stage company and has incurred net losses since its inception. As of December 31, 2022, the Company had an accumulated deficit of \$212.2 million. The Company’s net losses were \$16.9 million for the year ended December 31, 2022. The Company expects to continue to incur significant expenses and operating losses for the next several years. Those expenses and losses may fluctuate significantly from quarter-to-quarter and year-to-year.

Historically, the Company’s expenses in connection with the execution of its long-term business plan have been primarily driven by:

- R&D expenses associated with developing and enhancing the capabilities of its PlantSpring technology platform;
- R&D expenses and capital expenditures to expand its BioFactory production system;
- regulatory expenses associated with R&D and product development;
- maintaining, protecting, expanding, and defending its intellectual property portfolio, including intellectual property related to the PlantSpring technology platform and BioFactory production system;
- human capital related expenses associated with attracting and retaining skilled personnel; and
- pursuing and negotiating agreements with customers, licensees, and infrastructure partners.

On September 22, 2022, the Company announced that the Board had begun evaluating potential strategic alternatives to maximize shareholder value, including financing alternatives, merger, reverse merger, other business combinations, sale of assets, licensing, or other transactions.

On January 13, 2023, the Company and Merger Subsidiary entered into the Merger Agreement with Cibus. Pursuant to the Merger Agreement, following the Transactions, Calyxt will be organized in an “Up-C” structure and re-named “Cibus, Inc.” and its only material asset will consist of common units of Cibus. If the Transactions are completed, the business of Cibus will continue as the primary business of the combined organization and the equity holders of Cibus will own a substantial majority of the issued and outstanding common stock of the Company.

The closing of the Transactions is subject to the approval of Calyxt’s stockholders, the approval of Cibus’ members, the receipt of required regulatory approvals (to the extent applicable) and satisfaction of other customary closing conditions. The closing is currently expected to occur in the second quarter of 2023. Additional information regarding the Transactions is included in Calyxt’s registration statement on Form S-4 initially filed with the SEC in February 2023.

If, for any reason, the Transactions are not completed, the Company will reconsider its available alternatives at such time and could pursue one of the following courses of action, which the Company currently believes to be the most likely alternatives:

- *Dissolve and liquidate.* The Company may decide to dissolve and liquidate its assets. In such a circumstance, Calyxt would be required to pay all of its debts and contractual obligations and to set aside certain reserves for potential future claims. In light of Calyxt’s current capital resources, it is highly unlikely, in this case, that substantial resources, if any, would be available for distributions to stockholders.
- *Pursue another strategic transaction.* The Company may decide to resume the process of evaluating a potential merger, reorganization or other business combination transaction or to sell or otherwise dispose of certain of the Company’s assets. Any of these alternatives would be costly and time-consuming and would require that Calyxt obtain additional near-term funding in parallel to, or as part of, such a strategic transaction. The Company expects that it would be difficult to secure such funding in a timely manner, on favorable terms or at all.
- *Operate the business.* Although substantially less likely than the alternatives above, the Calyxt board could elect to seek to continue to operate the Company’s business. This alternative would require that Calyxt obtain additional near-term funding, which the Company expects would be difficult to secure in a timely manner, on favorable terms or at all. If pursued, Calyxt would likely need to significantly delay or further scale back operations beyond its already narrowly focused operational activities.

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Current Operational Focus

Prior to the announcement of the Transactions, the Company's primary focus was on the development of synthetic biology products for its customers using its BioFactory production system. In light of the proposed Transactions and recent capital resource constraints, the Company has substantially scaled back its operations and has focused its current business activities on ensuring it has cash sufficient to achieve a closing of the proposed Transactions. Accordingly, Calyxt's management has implemented cost reduction and other cash-focused measures, including reduction of capital expenditures, headcount reductions, and renegotiation or termination of professional services agreements. To conserve cash, Calyxt has also strategically evaluated its arrangements with suppliers and service providers and has, in several instances, transitioned such relationships to lower cost alternative providers.

In limiting operations to core activities, the Company has focused its continuing operations on

- scaling production of a single Plant Cell Matrix with its manufacturing partner, Evologic;
- licensing efforts with respect to its PlantSpring technology and plant traits, including the TALEN technology; and
- continuing to progress its three current customer projects—(1) its research collaboration with a leading global food ingredient manufacturer to develop a soybean trait to serve as an alternative to palm oil, (2) its plant-based chemistry pilot project for a major consumer packaged goods company, and (3) supporting late-stage development activities for its improved digestibility alfalfa trait, which was developed with and licensed to S&W Seed Company.

The Company has suspended non-core activities, such as efforts toward the development and integration of AIML and the initiation, development and commercialization of additional synthetic biology products, or chemistries, beyond those involved in the continuing operations identified above.

RELATIONSHIP WITH COLLECTIS AND COMPARABILITY OF RESULTS

The Company's largest shareholder is Collectis. As of December 31, 2022, Collectis owned 49.1 percent of the Company's issued and outstanding common stock.

Collectis has certain contractual rights as well as rights pursuant to the Company's certificate of incorporation and bylaws, in each case, for so long as it maintains threshold beneficial ownership levels in the Company's shares. See "Risk Factors—Although Collectis and its affiliates hold less than a majority of the Company's outstanding common stock, Collectis possesses certain rights that prevent other stockholders from influencing significant decisions."

In addition, Collectis has guaranteed the lease agreement for the Company's headquarters. However, the Company previously agreed to indemnify Collectis for any obligations under this guaranty, effective upon Collectis' ownership falling to 50 percent or less of the Company's outstanding common stock. Accordingly, the Company's indemnification obligation was triggered in October 2022.

The Company holds an exclusive license from Collectis that broadly covers the use of engineered nucleases for plant gene editing. This intellectual property covers methods to edit plant genes using "chimeric restriction endonucleases," which include TALEN[®], CRISPR/Cas9, zinc finger nucleases, and some types of meganucleases.

FINANCIAL OPERATIONS OVERVIEW

Revenue

Revenue is recognized from sales of products, from licenses of technology, and from product development activities for customers.

Cost of Goods Sold

Cost of goods sold are recognized as products are sold. There are minimal cost of goods sold associated with the Company's technology licensing activities.

Research and Development Expense

The Company's R&D expenses primarily consist of employee-related costs for personnel who research and develop its product candidates, fees for contractors who support product development activities, purchasing material and supplies for its laboratories, licensing, an allocation of facility and information technology expenses, and other costs associated with owning and operating its own laboratories and pilot BioFactory capabilities. This includes the costs of performing activities to discover and develop products and advance the Company's PlantSpring technology platform, including its intellectual property portfolio. BioFactory expenses from lab through pilot, unless incurred related to a specific product sold to a customer, are also classified as R&D expense. R&D expenses also include costs to write and support the research for filing patents. The Company recognizes R&D expenses as they are incurred.

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Selling, General, and Administrative Expense

Selling, general, and administrative (SG&A) expenses consist primarily of employee-related expenses for selling and licensing the Company's products and employee-related expenses for its executive, legal, intellectual property, information technology, finance, and human resources functions. In periods prior to 2021, these expenses also included employee-related and other expenses for selling soybean oil and meal, soybean acreage acquisition, and managing the soybean product supply chain. Other SG&A expenses include facility and information technology expenses not otherwise allocated to R&D expenses, professional fees for auditing, tax and legal services, expenses associated with maintaining patents, consulting costs and other costs of the Company's information systems, and costs to market its products.

Interest, net

Interest, net is comprised of interest income resulting from investments of cash and cash equivalents, short-term investments, unrealized gains and losses on short-term investments, issuance costs associated with the Company's Common Warrants issued in February 2022, and interest expense incurred related to financing lease obligations. It is also driven by balances, yields, and timing of financing and other capital raising activities.

Non-operating income (expenses)

Non-operating income (expenses) are income or expenses that are not directly related to ongoing operations and are primarily comprised of gains and losses from the mark-to-market of Common Warrants, gain from a legal settlement, expenses associated with the evaluation of strategic alternatives, foreign exchange-related transactions, and disposals of land, buildings, and equipment.

Changes Between Revenues and Costs

The Company was previously focused on the development of traits for traditional agriculture that it planned to commercialize using either a vertically integrated or licensing business model. The Company's first commercial product, a high oleic soybean, was launched in this manner in the first quarter of 2019. In August 2020, the Company announced it was winding down the vertically integrated soybean product line. The wind-down of this product line was completed in late 2021 with the final sales of soybean grain to a large soybean processor.

As the Company transitioned its business model, the composition of revenues and costs has evolved, with soybean-related revenues declining to zero, the negative gross profit margins experienced from sales of those products no longer occurring, and the significant working capital investment to support those activities also declining.

To the extent any revenue is generated under the Company's current business model, such revenue would derive from product development activities for customers for both the BioFactory production system and agricultural production and technology licensing arrangements. Any such cash and revenue-generating opportunities associated with these activities would be expected to primarily arise from up-front and milestone payments, annual license fees, and royalties. If and when the BioFactory begins to produce products for customers, it is anticipated that such revenues would grow and surpass revenues from other sources.

During the course of discussions with Cibus regarding, and following the execution of, the Merger Agreement, Calyxt has streamlined and focused its business activities on preserving cash sufficient to achieve a closing of the Transactions. Accordingly, Calyxt has taken additional steps to streamline its operations and to reduce its operating expenses, while focusing on a limited scope of core projects. While these projects are important for Calyxt's overall product development pipeline, none of these projects is expected to generate material revenue in the near term. While the Company continuously implemented cost reduction measures including not filling open positions throughout 2022, the principal impact of these actions affects results of operations beginning in early 2023 following the reduction in employees from 48 to 28, including attrition, in January 2023.

RESULTS OF OPERATIONS FOR THE YEAR ENDED DECEMBER 31, 2022, COMPARED TO THE YEAR ENDED DECEMBER 31, 2021

A summary of results of operations for the years ended December 31, 2022, and 2021 follows:

	Year Ended December 31,			
	2022	2021	\$ Change	% Change
	(In thousands, except percentage values)			
Revenue	\$ 157	\$ 25,987	\$(25,830)	(99)%
Cost of goods sold	—	28,557	(28,557)	(100)%
Gross profit	157	(2,570)	2,727	106%
Research and development	11,553	11,335	218	2%
Selling, general, and administrative	10,974	15,427	(4,453)	(29)%
Loss from operations	(22,370)	(29,332)	6,962	24%
Gain upon extinguishment of Payroll Protection Program loan	—	1,528	(1,528)	(100)%
Interest, net	(87)	(1,414)	1,327	94%
Non-operating income (expenses)	5,566	19	5,547	29,195%
Net loss	\$(16,891)	\$(29,199)	\$ 12,308	42%
Basic and diluted net loss per share	\$ (0.37)	\$ (0.78)	\$ 0.41	53%

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Revenue, Cost of Goods Sold, and Gross Profit

Revenues were \$0.2 million in 2022, a decrease of \$26.0 million, or 99 percent, from 2021. Cost of goods sold was zero in 2022, a decrease of \$28.6 million, or 100 percent, from 2021. Gross profit was \$0.2 million, constituting 100 percent of revenue, in 2022, compared to negative \$2.6 million, or negative 47 percent of revenue, in 2021. The decreases in revenue and cost of goods sold and improvement in gross profit were driven by the late 2021 completion of the wind-down of the Company's soybean product line and transition of the Company's focus to synthetic biology, which remains an early stage field and has not yet generated significant revenue. Revenue in the 2022 was primarily associated with the Company's agreement with a large food ingredient manufacturer to develop a palm oil alternative.

Research and Development Expense

R&D expense was \$11.6 million in 2022, an increase of \$0.2 million, or 2 percent, from 2021. The increase was primarily driven by an increase in allocated SG&A costs of \$2.0 million as the Company adjusted its cost allocation methodology at the beginning of 2022, partially offset by \$0.7 million of cost savings due to the change in the Company's business model, \$0.6 million lower cash compensation expense, and \$0.5 million lower non-cash stock compensation expense.

Selling, General, and Administrative Expense

SG&A expense was \$11.0 million in 2022, a decrease of \$4.5 million, or 29 percent, from 2021. The decrease was driven by cost allocations to R&D expense of \$2.0 million, lower cash compensation expense of \$1.0 million, other expense reductions of \$0.9 million, and a \$0.6 million one-time benefit from the modification of the Company's former CEO's severance agreement. These decreases were partially offset by \$0.8 million in higher rent expense as a result of the adoption of the lease accounting standard.

Gain Upon Extinguishment of Payroll Protection Program Loan

On April 8, 2021, the Company was notified by the U.S Small Business Administration (SBA) that the full principal amount and all accrued interest of the Paycheck Protection Program loan had been forgiven. Accordingly, the Company recognized a gain upon the extinguishment of the Payroll Protection Program Loan (the PPP loan) of \$1.5 million in 2021.

Interest, net

Interest, net was an expense of \$0.1 million in 2022, an improvement of \$1.3 million, or 94 percent, from 2021. The improvement was driven by the adoption of the lease accounting standard, which shifted amounts previously reported as interest expense to SG&A expense

Non-operating income (expenses)

Non-operating income (expenses) were income of \$5.6 million in 2022, an improvement of \$5.5 million from 2021. The improvement was driven by the mark-to-market of the Company's Common Warrants derivative liability, which declined in value due to a decline in stock price in 2022, partially offset by expenses associated with the strategic alternatives review.

Net Loss

Net loss was \$16.9 million in 2022, an improvement of \$12.3 million, or 42 percent, from 2021. The improvement in net loss was driven by the mark-to-market of the Company's Common Warrants derivative liability, the completion of the wind-down of the soybean product line in late 2021, and lower operating expenses. These improvements were partially offset by the gain realized on the forgiveness of the PPP loan in the second quarter of 2021.

Net Loss Per Share

Net loss per share was \$0.37 in 2022, an improvement of \$0.41 per share, or 53 percent, from 2021. The improvement in net loss per share was driven by the improvement in net loss and a year-over-year increase in the weighted average shares outstanding.

LIQUIDITY AND CAPITAL RESOURCES

Liquidity

The Company's primary sources of liquidity are its cash and cash equivalents. As of December 31, 2022, the Company had \$3.5 million of cash, cash equivalents, and restricted cash. The Company's restricted cash balances are cash and cash equivalents deposited in an amount equal to future equipment rent payments, as required under its equipment lease facility. The Company may request the return of excess restricted cash collateral annually in December. The Company's restricted cash was \$0.1 million as of December 31, 2022. Current liabilities were \$1.7 million as of December 31, 2022. The Company's current cash, cash equivalents, and restricted cash is sufficient to cover all of its current liabilities as of December 31, 2022.

The Company's liquidity funds its non-discretionary cash requirements and its discretionary spending. Prior to the wind-down of the Company's soybean go-to-market strategy, working capital was its principal non-discretionary funding requirement. In addition, the Company has contractual obligations related to recurring business operations, primarily related to lease payments for its headquarters and laboratory facilities. The Company's principal discretionary cash spending is for capital expenditures, short-term working capital payments, and professional and other transaction-related expenses incurred as the Company pursues additional financing and evaluates potential alternative transactions.

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The Company incurred net losses of \$16.9 million for the year ended December 31, 2022. As of December 31, 2022, the Company had an accumulated deficit of \$212.2 million and expects to continue to incur losses in the future.

Cash Flows from Operating Activities

<u>In Thousands</u>	<u>Year Ended December 31,</u>			
	<u>2022</u>	<u>2021</u>	<u>\$ Change</u>	<u>% Change</u>
Net loss	\$(16,891)	\$(29,199)	\$ 12,308	42%
Gain upon extinguishment of Payroll Protection Program loan	—	(1,528)	1,528	100%
Depreciation and amortization expenses	1,534	2,338	(804)	(34)%
Stock-based compensation	3,998	2,090	1,908	91%
Unrealized (gain) loss on mark-to-market of common stock warrants	(5,120)	—	(5,120)	NM
Changes in operating assets and liabilities	(2,885)	7,488	(10,373)	(139)%
Net cash used by operating activities	\$(19,364)	\$(18,811)	\$ (553)	(3)%

NM- not meaningful

Net cash used by operating activities was \$19.4 million in 2022, an increase in cash used of \$0.6 million, or three percent, from 2021. The net cash used by operating activities result was driven by a \$12.3 million improvement in net loss, a \$1.9 million increase in non-cash stock compensation, primarily the result of the forfeiture of unvested stock awards in the first quarter of 2021, and the \$1.5 million gain upon extinguishment of the PPP loan in the second quarter of 2021, which were more than offset by a \$5.1 million gain on mark-to-market of the Common Warrants and a \$10.4 million decline in cash provided by operating assets and liabilities due to the completion of the wind-down of the soybean product line in late 2021 and transition of the Company's focus to synthetic biology, which remains an early stage field and has not yet generated significant revenue.

The Company expects cash used by operating activities in 2023 to be lower than 2022 driven by reductions in operating expenses as a result of the Company's cost reduction initiatives and streamlining of operational focus prior to the anticipated closing of the Transactions.

Cash Flows from Investing Activities

<u>In Thousands</u>	<u>Year Ended December 31,</u>			
	<u>2022</u>	<u>2021</u>	<u>\$ Change</u>	<u>% Change</u>
Sales and (purchases) of short-term investments, net	\$ —	\$ 11,698	\$ (11,698)	(100)%
Purchases of land, buildings, and equipment	(1,520)	(497)	(1,023)	(206)%
Net cash (used) provided by investing activities	\$(1,520)	\$ 11,201	\$ (12,721)	(114)%

Net cash used by investing activities was \$1.5 million in 2022, an increase in cash used of \$12.7 million, or 114 percent, from 2021. This increase in cash used by investing activities was driven by the 2021 sale of short-term investments to fund operations and higher capital expenditures.

The Company expects cash used for purchases of land, buildings, and equipment in 2023 to be lower than 2022, driven by reductions in cash expenditures as a result of the Company's cost reduction initiatives and streamlining of operational focus prior to the anticipated closing of the Transactions.

Cash Flows from Financing Activities

<u>In Thousands</u>	<u>Year Ended December 31,</u>			
	<u>2022</u>	<u>2021</u>	<u>\$ Change</u>	<u>% Change</u>
Proceeds from common stock issuance	\$11,538	\$4,380	\$ 7,158	163%
Costs incurred related to the issuance of stock	(1,173)	(501)	(672)	(134)%
Repayments of financing lease obligations	(376)	(364)	(12)	(3)%
Proceeds from the exercise of stock options	—	227	(227)	(100)%
Net cash provided by financing activities	\$ 9,989	\$3,742	6,247	167%

Net cash provided by financing activities was \$10.0 million in 2022, an increase of \$6.2 million, or 167 percent, from 2021. The increase was primarily driven by \$10.0 million of net proceeds from the Follow-On Offering in February 2022.

The Company expects net cash provided by financing activities in 2023 to decrease compared to 2022, as a result of the Company's cost reduction initiatives and streamlining of operational focus prior to the anticipated closing of the Transactions.

Capital Resources

The Company has an effective shelf registration on Form S-3 on file with the SEC and additional capital is accessible from the capital markets, including pursuant to its ATM Facility. However, amounts available under the shelf registration statement, including the ATM Facility, are significantly limited

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because the Company's public float is less than \$75,000,000. Subject to Instruction I.B.6 to Form S-3, which is referred to as the "baby shelf" rules, for so long as the Company's public float is less than \$75,000,000, it may not sell more than the equivalent of one-third of its public float during any 12 consecutive months pursuant to the baby shelf rules.

Such additional liquidity and access to capital resources is subject to market conditions and other factors, including challenges associated with raising sufficient capital to meet the Company's financing needs in light of the Company's current stock price and related constraints.

Prior to December 31, 2022, the Company completed the following capital raising transactions:

- On July 25, 2017, the Company completed its IPO of common stock. In the aggregate, the Company received net proceeds from the IPO of \$58.0 million, all of which have been used to fund R&D costs, build out commercial capabilities, and for general corporate purposes.
- On May 22, 2018, the Company completed a follow-on offering of its common stock. In the aggregate, the Company received net proceeds from the follow-on offering of \$57.0 million.
- On October 20, 2020, the Company completed a follow-on offering of its common stock. In the aggregate, the Company received net proceeds from the follow-on offering of \$14.0 million.
- On September 21, 2021, the Company entered into an ATM Facility. In the aggregate, the Company received net proceeds from the ATM Facility of \$4.1 million through early January 2022.
- During the February 2022 Offering, the Company issued 3,880,000 shares of its common stock, 3,880,000 Pre-Funded Warrants, and 7,760,000 Common Warrants. In the aggregate, the Company received net proceeds of \$10.0 million, after deducting approximately \$0.9 million of underwriting discounts and estimated other offering expenses.
- On October 3, 2022, the Company entered into an amendment to the Open Market Sale Agreement with Jefferies for the ATM Facility that enables it, subject to the applicable baby shelf rules, to offer and sell up to 15,661,000 shares of its common stock. At its discretion, the Company determines the timing and number of shares to be issued under the ATM Facility. During the fourth quarter of 2022, the Company issued approximately 2.0 million shares of common stock under the ATM Facility for proceeds of \$0.1 million net of commissions and payments for other share issuance costs. From December 31, 2022, through the date of this report, the Company has not issued any additional shares under the ATM Facility.

Operating Capital Requirements

The Company has incurred losses since its inception and its net loss was \$16.9 million for the year ended December 31, 2022, and it used \$19.4 million of cash for operating activities for the year ended December 31, 2022.

The Company has incurred losses since its inception. If the Transactions are not consummated for any reason, the Company may decide to dissolve and liquidate its assets. In such a circumstance, Calyxt would be required to pay all of its debts and contractual obligations and to set aside certain reserves for potential future claims. In light of Calyxt's current capital resources, it is highly unlikely, in this case, that substantial resources, if any, would be available for distributions to stockholders.

To the extent the Transactions are not consummated for any reason and the Company is not liquidated and dissolved, it anticipates that it will continue to generate losses for the next several years or until such time as an alternative strategic transaction is consummated.

In the less likely scenario in which the Company seeks to continue to operate its business and until the Company can generate cash flows sufficient to support its operating capital requirements, it would seek to finance a portion of future cash needs through (i) cash on hand, (ii) commercialization activities, which may result in various types of revenue streams from (a) future product development agreements and technology licenses, including upfront and milestone payments, annual license fees, and royalties; and (b) product sales from its proprietary BioFactory production system; (iii) government or other third-party funding, (iv) public or private equity or debt financings, or (v) a combination of the foregoing. However, capital generated by commercialization activities, if any, is expected to be received over a period of time and near-term additional capital may not be available on reasonable terms, if at all.

In connection with the Transactions, beginning at the earlier of March 15, 2023 or the date Calyxt's unrestricted cash balance first drops below \$1,500,000, Calyxt can request, and Cibus has agreed to provide, an unsecured, interest-free revolving line of credit of up to \$3,000,000 in cash, which amount may be increased to \$4,000,000 if Cibus elects to extend the outside date (as defined in the Merger Agreement) to June 30, 2023. Funds can be drawn by Calyxt in \$500,000 increments and may only be used to fund operating expenses incurred in the ordinary course of business consistent with past practice and consistent with the negative covenants in the Merger Agreement. The full outstanding balance of the Interim Funding will be reduced to zero in connection with the closing of the Transactions, if consummated. The full outstanding balance of the Interim Funding will be forgiven by Cibus if the Merger Agreement is terminated for any reason other than certain under certain conditions, as detailed in the Merger Agreement. The Interim Funding is subject to acceleration in connection with certain bankruptcy events.

The Company faces uncertainty regarding the adequacy of its capital resources and presently has limited access to additional financing and expects to rely upon the Interim Funding in order to continue operations through the consummation of the Transactions.

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While alternative public and private transaction structures may be available, these may require additional time and cost, may result in fixed payment obligations, may result in substantial dilution to existing stockholders, particularly in light of the Company's current stock price, may impose operational restrictions on the Company, may grant holders rights senior to those of the Company's shares of common stock, and may not be available on attractive terms. Further, during the pendency of the Transactions, any such transactions could only be entered into with the consent of Cibus. Accordingly, although the Company continuously assesses market conditions and available financing alternatives, in light of the Company's current stock price, the restrictions imposed by the Merger Agreement and the availability of the Interim Funding, the Company does not anticipate any additional third-party funding prior to the consummation of the Transactions.

The Company believes its cash, cash equivalents, and restricted cash as of December 31, 2022, considering continuing actions taken to reduce its operating expenses to enable the proposed Transactions to close, the legal settlement discussed in Note 8 to the consolidated financial statements, and the availability of the Interim Funding are sufficient to fund its operations through the second quarter of 2023. The Company's management has concluded there is substantial doubt regarding its ability to continue as a going concern for a period of 12 months or more from the date of this filing.

The accompanying financial statements have been prepared on a going concern basis, which contemplates the realization of assets and satisfaction of liabilities in the ordinary course of business. The financial statements do not include any adjustments relating to the recoverability and classification of recorded asset amounts or the amounts and classification of liabilities that might result from the outcome of the uncertainties described above.

In light of the Company's current liquidity challenges and capital resource constraints, management has implemented cost reduction and other cash-focused measures to manage liquidity, including reduction of capital expenditures, headcount reductions, and renegotiation or termination of professional services agreements. To conserve cash, the Company has also strategically evaluated its arrangements with suppliers and service providers and has, in several instances, transitioned such relationships to lower cost alternative providers. During the course of discussions with Cibus regarding, and following the execution of, the Merger Agreement, Calyxt has further streamlined and focused its business activities on preserving cash sufficient to achieve a closing of the Mergers. Accordingly, Calyxt has taken additional steps to reduce its operating expenses and has focused its continuing operations on scaling production of its Plant Cell Matrix structures with its manufacturing partner, licensing efforts with respect to its PlantSpring technology and plant traits and continuing to progress its three key customer projects.

If the Company is unable to consummate the Transactions, the Company may have to implement increasingly stringent cost saving measures and significantly delay, scale back, or cease operations, in part or in full. If the Company decided to cease operations and dissolve and liquidate its assets, it is unclear to what extent the Company would be able to pay its existing obligations. In such a circumstance and in light of the Company's current capital resources position, it is unlikely that substantial resources would be available for distributions to stockholders.

CONTRACTUAL OBLIGATIONS, COMMITMENTS, AND CONTINGENCIES

As of December 31, 2022, the Company's contractual obligations consisted of minimum lease payments for its corporate headquarters and laboratory facilities and equipment leases. In the aggregate, \$7.5 million is due within the next five years, of which \$1.5 million is payable in 2023.

Sale-Leaseback of Headquarters and Laboratory Facilities

In September 2017, the Company consummated a sale-leaseback transaction with a third party for its corporate headquarters and laboratory facilities in Roseville, Minnesota, which encompasses approximately 44,000 square feet including office and lab space, the first pilot BioFactory production system, greenhouses, and outdoor research plots. The Company is deemed the owner for accounting purposes. The lease has a term of twenty years with four options to extend its term for five years each subject to there being no default under the lease terms beyond any cure period and the Company occupying the property at the time of extension. In 2017, the Company received \$7.0 million in connection with the sale of the land and uncompleted facility.

The lease commenced in May 2018. Under the lease, the Company pays an annual base rent of eight percent of the total project cost with scheduled increases in rent of 7.5 percent on the sixth, eleventh, and sixteenth anniversaries of the start of the lease commencement as well as on the first day of each renewal term. Currently, the Company pays an annual base rent of \$1.4 million. The first increase will occur during 2023.

The Company is also responsible for all operating costs and expenses associated with the property. If the landlord decides to sell the property, the Company has a right of first refusal to purchase the property on the same terms offered to any third party.

Concurrent with entering the lease, Collectis guaranteed the lease agreement for the Company's headquarters. However, the Company previously agreed to indemnify Collectis for any obligations under this guaranty, effective upon Collectis' ownership falling to 50 percent or less of the Company's outstanding common stock. The Company's indemnification obligation was triggered in October 2022.

Prior to 2022, this lease was considered a failed sale leaseback based on the nature of the transactions and was reported as a financing-type lease. As discussed below in Note 1 to the Consolidated Financial Statements, with the Company's adoption of the New Lease Standard on January 1, 2022, this lease is now considered an operating lease.

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Sale-Leaseback of Equipment

The Company also has an equipment financing arrangement that is considered a financing-type lease which matures in 2023. The Company was required to deposit cash into a restricted account in an amount equal to the future rent payments required by the lease. As of December 31, 2022, this restricted cash totaled \$0.1 million, and will be returned following the payoff of the lease obligations in 2023.

CRITICAL ACCOUNTING ESTIMATES

The accompanying discussion and analysis of the Company's financial condition and results of operations are based upon its consolidated financial statements and the related disclosures, which have been prepared in accordance with accounting principles generally accepted in the United States. The preparation of these consolidated financial statements requires the Company to make estimates, assumptions, and judgments that affect the reported amounts in the Company's consolidated financial statements and accompanying notes. The Company bases its estimates on historical experience and on various other assumptions that it believes to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates under different assumptions or conditions. The Company believes the following policies to be the most critical to understanding its financial condition and results of operations because they require the use of estimates, assumptions, and judgments about matters that are inherently uncertain.

Stock-Based Compensation

The valuation of stock options is a critical accounting estimate that requires the use of judgments and assumptions that are likely to have a material impact on the Company's consolidated financial statements. The Company generally measures the fair value of employee and nonemployee stock-based awards on their grant date and records compensation expense on a straight-line basis over the related service period of the award, which is generally the vesting period. The Company uses the Black-Scholes option pricing model to value its stock option awards, which requires the Company to make predictive assumptions regarding employee exercise behavior, future stock price volatility, and dividend yield. The Company generally measures compensation expense for grants of restricted stock units using the Company's share price on the date of grant. The Company uses a Monte Carlo simulation pricing model when estimating the fair values of PSUs, which requires the Company to make predictive assumptions. The Company estimates fair values and accounts for employee and nonemployee awards in a similar manner.

Due to the limited historical experience of the Company's stock awards program, it has elected to account for forfeitures of awards as they occur. If an award is forfeited prior to vesting, the associated reduction in expense is reflected net in stock-based compensation expense in that period.

Stock Options

The estimated fair values of stock options granted, and the assumptions used for the Black-Scholes option-pricing model were as follows:

	<u>2022</u>	<u>2021</u>
Expected term (in years)	5.5 - 6.9	5.5 - 6.5
Expected volatility	89.7% - 92.8%	80.1% - 91.0%
Risk-free interest rate	1.9% - 3.5%	0.6% - 1.2%

Due to the Company's limited history, it does not always have sufficient historical stock option activity to make predictive assumptions based solely on its stock or stock option activity for the Black-Scholes option pricing model. As a result, the Company may need to use data from other comparable public companies or alternative calculation methods as allowed by generally accepted accounting principles to make predictive assumptions.

The Company estimates its future stock price volatility using the weighted-average historical volatility calculated from a group of comparable public companies over the expected term of the option. The group of comparable public companies is determined by management on an annual basis. When selecting a comparable company, management considers relevant factors including industry and strategy, size, maturity, and financial leverage. The comparable companies used by management to calculate expected volatility may change from year-to-year because of changes in those factors and because a new comparable company may become publicly traded. A one percentage point increase in the Company's volatility assumption, leaving all other assumptions constant, would increase the grant date fair value by one percent.

The expected term of stock options is estimated using the average of the vesting tranches and the contractual life of each grant for employee options, or the simplified method, as the Company has limited historical information to develop reasonable expectations about future exercise patterns and post-vesting employment termination behavior for its stock option grants. The use of the simplified method is dependent upon the type of equity award granted and the term of the award. Management reviews the expected term of stock options before issuance to ensure that the use of the simplified method is appropriate and that the Company does not have sufficient historical exercise data to estimate the expected term using a different method. An increase in the expected term by one year, leaving all other assumptions constant, would increase the grant date fair value by five percent.

The Company estimates the risk-free interest rate based on the United States Treasury zero-coupon yield curve at the date of grant for the expected term of the option. A one percentage point increase in the risk-free interest rate, leaving all other assumptions constant, would not change the grant date fair value.

The Company does not, nor does it expect to pay dividends in the foreseeable future.

Performance Stock Units

From time-to-time the Company issues PSUs to certain individuals in management to align their objectives with stockholders of the Company.

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In March 2022, the Company granted 530,000 PSUs under the 2017 Plan to five employees, including four executive officers. The PSUs include three annual performance periods (2022, 2023, and 2024) and target performance levels for each of those periods linked to the achievement of Company objectives as determined annually for the respective period by the Compensation Committee of the Company's Board of Directors. Once the annual objectives are approved, the associated expense will be recognized on a straight-line basis over the period from the date of grant through the determination date, which can be no later than March 15 of the following year. Earned awards will be settled in shares of Company stock no later than the March 15 determination date in the following calendar year. The grant date for the tranche of awards linked to 2022 performance is May 4, 2022. The Calyxt Board approved the level of performance for the 2022 grant on March 1, 2023, and at the same time established the performance criteria for the 2023 awards. Determination of expense for the 2024 tranche of PSUs will be made when the associated business objectives are determined.

In July 2021, the Company granted 600,000 PSUs under the Inducement Plan to Mr. Michael A. Carr, its President and Chief Executive Officer. The estimated fair values of PSUs granted in 2021, and the assumptions used were as follows:

Estimated fair values of performance stock units granted:	
At least \$12 per share	\$2.16
At least \$15 per share	\$1.89
At least \$20 per share	\$1.55
Assumptions:	
Expected term (in years)	3.0
Expected volatility	90.0%
Risk-free interest rate	0.4%

The Company estimated the fair value of each tranche of the PSUs on the grant date using the Monte Carlo simulation pricing model, which required it to make predictive assumptions as to the expected term of the grant, future stock price volatility, and dividend yield. The expected term represents the expected service period of the PSUs granted. It does not represent a significant accounting estimate. Due to the expected term of the award being three years and the Company having been publicly traded for more than three years, the volatility assumption was based on the historical volatility of the Company's common stock over the expected term. The Company estimates the risk-free interest rate based on the United States Treasury zero-coupon yield curve at the date of grant for the expected term of the PSU.

Valuation of Common Warrants

The Common Warrants have been classified as a liability in the Company's consolidated balance sheet because the warrants include a put option election available to the holder of a Common Warrant that is contingently exercisable if the Company enters into a Fundamental Transaction through a Change of Control Put. If the Change of Control Put is exercised by the holder of a Common Warrant, they may elect to receive either the consideration of the Fundamental Transaction or put the Common Warrant back to the Company in exchange for cash, based on terms and timing specified in the Common Warrant. If the put option is exercised, the Company is required to pay cash to the holder in an amount as determined by the Black Scholes pricing model, with assumptions determined in accordance with the terms of the Common Warrants. Those assumptions were as follows on December 31, 2022:

	As of December 31, 2022
Estimated fair value of Common Warrants:	\$ 0.04
Assumptions:	
Expected term to liquidation (in years)	4.6
Expected volatility	85.0%
Risk-free interest rate	4.0%

A ten percent change in any of the assumptions would not have had a material effect on the Company's results of financial condition or results of operations.

Net Realizable Value of Inventories

Due to the wind-down of its soybean product line in 2021, the Company did not have any inventory balances, nor does it anticipate having any such balances in 2023 based on the nature of its business activities.

Under the Company's prior go-to-market soybean strategy, the determination of the net realizable value of inventories was a critical accounting estimate that required the use of judgments and assumptions that may have had a material impact on the Company's consolidated financial statements. At each period-end, the Company made assumptions regarding projected selling prices of its products considering futures market prices for the underlying agricultural markets and its associated risk management strategies, anticipated costs, and other factors that take into consideration the Company's limited operating history and compare those prices to the current weighted average costs of its inventories. If the Company's costs were higher than the projected selling prices, then a valuation adjustment was recorded.

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Income Tax Valuation Allowances

The determination of the income tax valuation allowances requires the use of judgments and assumptions that may have a material impact on the Company's consolidated financial statements, especially at the early stage of commercialization. The Company provides deferred taxes for deductible and taxable temporary differences. Deferred tax assets are reduced by a valuation allowance when the Company believes it is more likely than not that some portion or all the deferred tax assets will not be realized. Because the Company has generated losses cumulatively, management believes it is more likely than not that some portion or all the deferred tax assets will not be realized and have reflected a full valuation allowance against its net deferred tax assets. If the Company were to generate profits, the valuation allowance may change.

RECENTLY ISSUED ACCOUNTING PRONOUNCEMENTS

For more information on recently issued accounting pronouncements, see the Company's consolidated financial statements and related financial statement schedules on page F-1.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Prior to the Company's shift in business strategy which began in 2020, the Company's primary exposure to market risk was commodity price sensitivity under its former soybean go-to-market strategy. The Company was susceptible to changes in commodity market prices that could impact the selling price for grain inventories, which were carried at historical cost. Prior to the purchase, the Company also had market exposure associated with fixed price grain production agreements. Under this former strategy, the Company managed its exposure to changes in market prices by entering commodity hedges to convert fixed price grain inventories and fixed price grain production agreements to floating market prices. By executing these hedging strategies, the Company could closely match the expected economic terms of the grain sale with the market. In a rising market these positions resulted in losses, and in a falling market these positions resulted in gains once any losses, if any, are recaptured. At time of sale, the gains or losses on the commodity derivatives were realized and fully offset by gains or losses on the grain inventories. As a result of the completed wind-down of the soybean product line in 2021, the Company's market risk related to commodity price sensitivity has been eliminated and the Company no longer holds commodity derivative contracts.

The Company is exposed to potential losses related to the price of its common stock. At each balance sheet date, the fair value of the Company's Common Warrants liability is remeasured using current fair value inputs, one of which is the price of its common stock. During any period, if the price of the Company's common stock increases, there will likely be an increase in the fair value of the associated liability. These potential increases in fair value will result in losses in the Company's consolidated statements of operations from the change in fair value of the Common Warrants liability. Conversely, a decrease in the price of the Company's common stock during any period will likely result in decreases in the fair value of the associated liability. These potential decreases in fair value will result in gains in the Company's consolidated statements of operations from the change in the value of the Common Warrants liability. Given the significant current and historical volatility of the Company's common stock price, any changes period-over-period have and could in the future result in a significant change in the fair value of its Common Warrants liability and significantly impact its net loss during the period of change.

Item 8. Consolidated Financial Statements and Supplementary Data

The consolidated financial statements and related financial statement schedules required to be filed are listed in the Index to Consolidated Financial Statements on page F-1 hereto and are incorporated herein.

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure

None.

Item 9A. Controls and Procedures

Management's Evaluation of Disclosure Controls and Procedures

The Company maintains disclosure controls and procedures that are designed to provide reasonable assurance that information required to be disclosed in its Exchange Act reports is recorded, processed, summarized, and reported within the time periods specified in the Securities and Exchange Commission's rules and forms and that such information is accumulated and communicated to Management, including the Company's principal executive officer and principal financial officer, as appropriate, to allow timely decisions regarding required disclosure.

Under the supervision of the Company's principal executive officer and principal financial officer, it evaluated the effectiveness of its disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) of the Exchange Act) as of December 31, 2022. Based on that evaluation, as of December 31, 2022, the Company's principal executive officer and principal financial officer have concluded that its disclosure controls and procedures were effective.

Management's Annual Report on Internal Control Over Financial Reporting

The Company's management is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in Rules 13a-15(f) and 15d-15(f) of the Exchange Act. The Company's management, including its principal executive officer and principal financial officer, conducted an evaluation of the effectiveness of its internal controls over financial reporting based on the framework set forth in the "Internal Control—Integrated Framework" issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework). Based on an evaluation under that framework, Management concluded that the Company's internal control over financial reporting was effective as of December 31, 2022.

Inherent Limitations on Controls and Procedures

The Company's management, including the principal executive officer and principal financial officer, does not expect that its disclosure controls and procedures and its internal control over financial reporting will prevent all error and all fraud. A control system, no matter how well designed and operated, can only provide reasonable assurances that the objectives of the control system are met. The design of a control system reflects resource constraints; the benefits of controls must be considered relative to their costs. Because there are inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that all control issues and instances of fraud, if any, for the Company have been or will be detected. As these inherent limitations are known features of the disclosure and financial reporting processes, it is possible to design into the processes safeguards to reduce, though not eliminate, these risks. These inherent limitations include the realities that judgments in decision-making can be faulty and that breakdowns occur because of simple error or mistake. Controls can also be circumvented by the individual acts of some persons, by collusion of two or more people, or by management override of the control. The design of any system of controls is based in part upon certain assumptions about the likelihood of future events. While the Company's disclosure controls and procedures and its internal control over financial reporting are designed to provide reasonable assurance of achieving their objectives, there can be no assurance that any design will succeed in achieving its stated goals under all future conditions. Over time, controls may become inadequate because of changes in conditions or deterioration in the degree of compliance with the policies or procedures. Because of the inherent limitations in a cost-effective control system, misstatements due to error or fraud may occur and not be detected.

Changes in Internal Control over Financial Reporting

There have been no changes in the Company's internal control over financial reporting identified in connection with the evaluation required by Rules 13a-13(d) and 15d-15(d) of the Exchange Act that occurred during the fourth quarter ended December 31, 2022, that has materially affected, or are reasonably likely to materially affect, the Company's internal control over financial reporting.

Item 9B. Other Information

None.

Item 9C. Disclosure Regarding Foreign Jurisdictions that Prevent Inspections

Not applicable.

PART III

Item 10. Directors, Executive Officers and Corporate Governance

The information required by this item concerning the Company's directors, executive officers, and corporate governance matters is incorporated by reference to its 2023 Proxy Statement.

The Company's Board of Directors has adopted a Code of Business Conduct and Ethics applicable to all officers, directors, and employees. The Company's Code of Business Conduct and Ethics, Corporate Governance Guidelines, and the charters of its Audit Committee, Compensation Committee, and Nominating and Corporate Governance Committee are available on the Company's website (www.calyxt.com) under "Corporate Governance" in the "Investors" section. The Company will provide a copy of these documents to any person, without charge, upon request. The Company intends to make all required disclosures concerning any amendments to, or waivers from, the Code of Business Conduct and Ethics on its website.

Item 11. Executive Compensation

The information required by this item regarding executive compensation is incorporated by reference to the Company's 2023 Proxy Statement.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters

The information required by this item regarding security ownership of certain beneficial owners and management is incorporated by reference in the Company's 2023 Proxy Statement.

Item 13. Certain Relationships and Related Transactions, and Director Independence

The information required by this item regarding certain relationships and related transactions is incorporated by reference to the Company's 2023 Proxy Statement.

Item 14. Principal Accounting Fees and Services

The information required by this item regarding principal accounting fees and services is incorporated by reference to the Company's 2023 Proxy Statement.

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PART IV

Item 15. Exhibits and Financial Statement Schedules

- (1) Consolidated Financial Statements
- (2) See “Index to Consolidated Financial Statements” in Item 8, which is incorporated into this Item by reference.
- (3) Financial Statement Schedules—Not applicable.
- (4) Schedules not filed with this Annual Report on Form 10-K are omitted because of the absence of conditions under which they are required or because the information called for is shown in the consolidated financial statements or related notes.

(a)(3) Exhibits

Exhibit Number	Description
2.1	Agreement and Plan of Merger, dated January 13, 2023, by and among Calyxt, Inc., Calypso Merger Subsidiary, LLC, Cibus Global, LLC and the other parties thereto
3.1	Amended and Restated Certificate of Incorporation (incorporated by reference to Exhibit 3.1 of the Company’s Annual Report on Form 10-K filed with the SEC on March 14, 2018)
3.2	Amended and Restated Bylaws (incorporated by reference to Exhibit 3.2 of the Company’s Quarterly Report on Form 10-Q filed with the SEC on May 7, 2018)
4.1	Description of the Registrant’s Securities Registered Pursuant to Section 12 of the Securities Exchange Act of 1934 (incorporated by reference to Exhibit 4.1 to the Company’s Annual Report on Form 10-K filed with the SEC on March 5, 2020)
4.2	Form of Pre-Funded Warrant (incorporated by reference to Exhibit 4.1 to the Company’s Current Report on Form 8-K filed with the SEC on February 23, 2022)
4.3	Form of Common Warrant (incorporated by reference to Exhibit 4.2 to the Company’s Current Report on Form 8-K filed with the SEC on February 23, 2022)
10.1	Management Services Agreement between Collectis S.A., Collectis, Inc. and Calyxt, Inc., dated as of January 1, 2016 (incorporated by reference to Exhibit 10.1 of the Company’s Registration Statement on Form S-1 filed with the SEC on June 23, 2017)
10.2	First Amendment to the Management Services Agreement Amendment dated July 25, 2017 between Collectis S.A. and Calyxt, Inc. (incorporated by reference to Exhibit 10.2 of the Company’s Annual Report on Form 10-K filed with the SEC on March 14, 2018)
10.3	Second Amendment to the Management Services Agreement Amendment dated January 29, 2020 between Collectis S.A., Collectis, Inc., Collectis Biologics, Inc. and Calyxt, Inc. (incorporated by reference to Exhibit 10.3 of the Company’s Annual Report on Form 10-K filed with the SEC on March 5, 2020)
10.4	Separation Agreement dated July 25, 2017 between Collectis S.A. and Calyxt, Inc. (incorporated by reference to Exhibit 10.3 of the Company’s Annual Report on Form 10-K filed with the SEC on March 14, 2018)
10.5	Stockholders Agreement dated July 25, 2017 between Collectis S.A. and Calyxt, Inc. (incorporated by reference to Exhibit 10.4 of the Company’s Annual Report on Form 10-K filed with the SEC on March 14, 2018)
10.6	License Agreement dated July 25, 2017 between Collectis S.A. and Calyxt, Inc. (incorporated by reference to Exhibit 10.5 of the Company’s Annual Report on Form 10-K filed with the SEC on March 14, 2018)
10.7#	Exclusive Patent License Agreement between Regents of the University of Minnesota and Calyxt Inc. (f.k.a. Collectis Plant Sciences, Inc.), dated December 15, 2014 (incorporated by reference to Exhibit 10.6 of the Company’s Registration Statement on Form S-1/A filed with the SEC on July 3, 2017)
10.11†	Calyxt, Inc. Equity Incentive Plan (incorporated by reference to Exhibit 10.11 of the Company’s Registration Statement on Form S-1 filed with the SEC on June 23, 2017)
10.12†	Form of Stock Option Agreement pursuant to the Calyxt, Inc. Equity Incentive Plan (incorporated by reference to Exhibit 10.12 of the Company’s Registration Statement on Form S-1 filed with the SEC on June 23, 2017)
10.16†	Calyxt, Inc. 2017 Omnibus Incentive Plan, as amended (incorporated by reference to Annex A of the Company’s Definitive Proxy Statement filed with the SEC on April 6, 2021)
10.17†	Calyxt, Inc. 2017 Stock Option Sub-Plan for French Employees and Directors (incorporated by reference to Exhibit 10.21 of the Company’s Registration Statement on Form S-1/A filed with the SEC on July 3, 2017)
10.18†	Form of Stock Option Agreement pursuant to the Calyxt, Inc. 2017 Omnibus Incentive Plan, as amended (incorporated by reference to Exhibit 10.22 of the Company’s Form 10-Q for the quarter ended June 30, 2020)
10.19†	Form of Restrictive Stock Unit Agreement pursuant to the Calyxt, Inc. 2017 Omnibus Incentive Plan, as amended (incorporated by reference to Exhibit 10.23 of the Company’s Form 10-Q for the quarter ended June 30, 2020)
10.20†	Form of Performance Stock Unit Award Agreement pursuant to the Calyxt, Inc. 2017 Omnibus Incentive Plan, as amended (incorporated by reference to Exhibit 10.1 to the Company’s Quarterly Report on Form 10-Q for the quarter ended June 30, 2019)
10.21†	Calyxt, Inc. 2017 Restricted Stock Unit Sub-Plan for French Employees and Directors (incorporated by reference to Exhibit 10.25 of the Company’s Registration Statement on Form S-1/A filed with the SEC on July 3, 2017)
10.22†	Lease Agreement between Calyxt, Inc., as Tenant, and NLD Mount Ridge LLC, as Landlord, dated September 6, 2017 (incorporated by reference to Exhibit 10.1 of the Company’s Current Report on Form 8-K filed with the SEC on September 7, 2017)

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10.23	Form of Indemnification Agreement (incorporated by reference to Exhibit 10.24 of the Company's Annual Report on Form 10-K for the year ended December 31, 2017)
10.24	Amendment No. 1 to Stockholders Agreement dated May 7, 2018 between Collectis S.A. and Calyxt, Inc. (incorporated by reference to Exhibit 10.1 of the Company's Quarterly Report on Form 10-Q for the quarter ended March 31, 2018)
10.25†	Offer Letter between Calyxt, Inc. and Mr. Michael A. Carr, dated July 13, 2021 (incorporated by reference to Exhibit 10.1 of the Company's Current Report on Form 8-K filed with the SEC on July 15, 2021)
10.26†	Employment Agreement between Calyxt, Inc. and Mr. Bill Koschak, dated December 21, 2018 (incorporated by reference to Exhibit 10.1 of the Company's Current Report on Form 8-K filed with the SEC on January 3, 2019)
10.27†	Employment Agreement between Calyxt, Inc. and Ms. Debra Frimerman, dated January 21, 2019 (incorporated by reference to Exhibit 10.29 to the Company's Annual Report on Form 10-K for the year ended December 31, 2018)
10.28†	Employment Agreement between Calyxt, Inc. and Dr Travis J. Frey, dated May 13, 2019 (incorporated by reference to Exhibit 10.28 to the Company's Annual Report on Form 10-K for the year ended December 31, 2019)
10.29†	Calyxt, Inc. 2021 Short Term Incentive Plan (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on March 18, 2021)
10.30†	Calyxt, Inc. 2021 Executive Severance Plan (incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K filed on March 18, 2021)
10.31†	Separation Agreement between Calyxt, Inc. and James Blome, dated March 18, 2021
10.32†	Employment Agreement between Calyxt, Inc. and Ms. Sarah Reiter, dated October 13, 2020
10.33†	Calyxt, Inc. 2021 Employee Inducement Incentive Plan (incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K filed on July 15, 2021)
10.34†	Form of Performance Stock Unit Agreement under the Calyxt, Inc. 2021 Employee Inducement Incentive Plan (incorporated by reference to Exhibit 10.3 to the Company's Current Report on Form 8-K filed on July 15, 2021)
10.35†	Participation Agreement of Mr. Michael A. Carr under the 2021 Executive Severance Plan (incorporated by reference to Exhibit 10.6 to the Company's Current Report on Form 8-K filed on July 15, 2021)
10.36	Calyxt, Inc. Form of Non-Competition, Non-Solicitation, Confidentiality and Inventions Agreement (incorporated by reference to Exhibit 10.7 to the Company's Current Report on Form 8-K filed on July 15, 2021)
10.37	Open Market Sale AgreementSM dated September 21, 2021, by and between Calyxt, Inc. and Jefferies LLC (incorporated by reference to Exhibit 1.1. to the Company's Current Report on Form 8-K filed on September 21, 2021)
10.38†	Annual Incentive Payment Criteria for Executive Officers—In Respect of Fiscal Year 2021 (incorporated by reference to Exhibit 10.2 to the Company's Quarterly Report on Form 10-Q filed on November 4, 2021)
10.39†	Separation Agreement between Calyxt, Inc. and Sarah Reiter, dated January 20, 2022 (incorporated by reference to Exhibit 10.39 to Calyxt's Annual Report on Form 10-K filed on March 3, 2022).
10.40†	Form of Performance Stock Unit Agreement pursuant to the Calyxt, Inc. 2017 Omnibus Incentive Plan, as amended (incorporated by reference to Exhibit 10.1 of the Company's Current Report on Form 8-K filed with the SEC on March 28, 2022)
10.41†	Calyxt, Inc. 2022 Short Term Incentive Plan (incorporated by reference to the Company's Quarterly Report on Form 10-Q filed with the SEC on May 5, 2022)
10.42	Amendment No. 1 to Open Market Sale AgreementSM, dated October 3, 2022, by and between Calyxt, Inc. and Jefferies LLC (incorporated by reference to the Company's Current Report on Form 8-K filed with the SEC on October 3, 2022)
10.43	Indemnification Agreement, dated November 10, 2017, between Calyxt Inc. and Collectis S.A. (incorporated by reference to the Company's Quarterly Report on Form 10-Q filed with the SEC on November 13, 2017)
10.44†*	Form of Restrictive Stock Unit Agreement pursuant to the Calyxt, Inc. 2017 Omnibus Incentive Plan, as amended
21.1	Subsidiaries of Registrant (incorporated by reference to Exhibit 21.1 to the Company's Annual Report on Form 10-K filed with the SEC on March 5, 2020)
23.1*	Consent of Independent Registered Public Accounting Firm
24.1*	Power of Attorney (included on signature page to this Form 10-K)
31.1*	Certification of the Chief Executive Officer Pursuant to Rules 13a-14(a) and 15d-14(a) of the Securities Exchange Act
31.2*	Certification of the Chief Financial Officer Pursuant to Rules 13a-14(a) and 15d-14(a) of the Securities Exchange Act
32*	Certification of the Chief Executive Officer and Chief Financial Officer Pursuant to 18 U.S.C. Section 1350, as adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
101.INS*	Inline XBRL Instance Document
101.SCH*	Inline XBRL Taxonomy Extension Schema Document
101.CAL*	Inline XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF*	Inline XBRL Taxonomy Extension Definition Linkbase Document

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101.LAB*	Inline XBRL Taxonomy Extension Label Linkbase Document
101.PRE*	Inline XBRL Taxonomy Extension Presentation Linkbase Document
104*	The cover page for the Company's Annual Report on 10-K for the year ended December 31, 2022, has been formatted in Inline XBRL
#	Confidential treatment has been granted for certain information contained in this exhibit. These portions have been omitted and filed separately with the United States Securities and Exchange Commission.
†	Indicates management contract or compensatory plan.
*	Filed herewith

Item 16. Form 10-K Summary

None.

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Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

CALYXT, INC.

Date: March 2, 2023

By: /s/ Michael A. Carr

Name: Michael A. Carr

Title: President and Chief Executive Officer

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated. Each of the undersigned hereby constitute and appoint Michael A. Carr, William F. Koschak, and Debra Frimerman, and each of them, his or her true and lawful attorneys-in-fact and agents, with full and several power of substitution and resubstitution, for him or her and in his or her name, place, and stead in any and all capacities, to sign one or more amendments to this Annual Report on Form 10-K, each in such form as they or any one of them may approve, and to file the same with all exhibits thereto and other documents in connection therewith with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing requisite and necessary to be done so that this Annual Report and any amendments shall comply with the Securities Exchange Act of 1934, as amended, and the applicable rules and regulations adopted or issued pursuant thereto, as fully and to all intents and purposes as he or she might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents, or any of them or their substitute or resubstitute, may lawfully do or cause to be done by virtue hereof.

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/s/ Michael A. Carr</u> Michael A. Carr	President, Chief Executive Officer, and Director (principal executive officer)	March 2, 2023
<u>/s/ William F. Koschak</u> William F. Koschak	Chief Financial Officer (principal financial and accounting officer)	March 2, 2023
<u>/s/ Yves Ribeill</u> Yves Ribeill	Board Chair and Director	March 2, 2023
<u>/s/ Laurent Arthaud</u> Laurent Arthaud	Director	March 2, 2023
<u>/s/ Philippe Dumont</u> Philippe Dumont	Director	March 2, 2023
<u>/s/ Jonathan Fassberg</u> Jonathan Fassberg	Director	March 2, 2023
<u>/s/ Anna Ewa Kozicz-Stankiewicz</u> Anna Ewa Kozicz-Stankiewicz	Director	March 2, 2023
<u>/s/ Kimberly Nelson</u> Kimberly Nelson	Director	March 2, 2023
<u>/s/ Christopher Neugent</u> Christopher Neugent	Director	March 2, 2023

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Report of Independent Registered Public Accounting Firm

To the Shareholders and the Board of Directors of Calyxt, Inc.

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Calyxt, Inc. (the Company) as of December 31, 2022 and 2021, the related consolidated statements of operations, stockholders' equity, and cash flows for each of the three years in the period ended December 31, 2022, and the related notes (collectively referred to as the "consolidated financial statements"). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company at December 31, 2022 and 2021, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2022, in conformity with U.S. generally accepted accounting principles.

The Company's Ability to Continue as a Going Concern

The accompanying consolidated financial statements have been prepared assuming that the Company will continue as a going concern. As discussed in Note 2 to the financial statements, the Company has incurred recurring losses from operations, utilized cash from operations, and has stated that substantial doubt exists about the Company's ability to continue as a going concern. Management's evaluation of the events and conditions and management's plans regarding these matters are also described in Note 2. The consolidated financial statements do not include any adjustments that might result from the outcome of this uncertainty.

Basis for Opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) ("PCAOB") and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. As part of our audits we are required to obtain an understanding of internal control over financial reporting but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control over financial reporting. Accordingly, we express no such opinion.

Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

Adoption of ASU No. 2016-02

As discussed in Notes 1 and 8 to the consolidated financial statements, the Company changed its method of accounting for leases in 2022 due to the adoption of ASU No. 2016-02, Leases.

Critical Audit Matter

The critical audit matter communicated below is a matter arising from the current period audit of the consolidated financial statements that was communicated or required to be communicated to the audit committee and that: (1) relates to accounts or disclosures that are material to the consolidated financial statements and (2) involved our especially challenging, subjective or complex judgments. The communication of the critical audit matter does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing a separate opinion on the critical audit matter or on the accounts or disclosures to which it relates.

Description of the Matter

Common Stock Warrants

As discussed in Note 5 to the consolidated financial statements, the Company entered into a follow-on public offering and issued common warrants to purchase shares of common stock. These warrants were initially recorded as a liability at their fair value on the date issued. Subsequent changes in the fair value of the warrants are recorded in earnings. As of December 31, 2022, the fair value of the warrants was \$291 thousand. The Company has recognized an unrealized gain on the fair value of the warrants of \$5,120 thousand in other income (expense), net in the year ended December 31, 2022.

Auditing the Company's valuation of the common stock warrants was complex due to the degree of judgment required in evaluating the significant assumptions, principally the expected volatility used in the Black-Scholes model.

How We Addressed the Matter in Our Audit

To test the Company's valuation of the warrants determined by the Black-Scholes model, we performed audit procedures that included, among others, assessing the methodology used and testing significant assumptions and the underlying data used by the Company in its analysis, including assessing the completeness and accuracy of such underlying data. We involved internal valuation specialists in assessing the fair value methodology applied and evaluating the reasonableness of the assumptions used by management, including evaluating significant assumptions by comparing them to independently developed estimates. We performed sensitivity analyses of significant assumptions to evaluate the changes in the fair value of the warrants that would result from changes in the assumptions. Furthermore, we assessed the appropriateness of the disclosures in the consolidated financial statements.

/s/ Ernst & Young LLP

We have served as the Company's auditor since 2015.

Minneapolis, Minnesota

March 2, 2023

CALYXT, INC.
CONSOLIDATED BALANCE SHEETS
(In Thousands, Except Par Value and Share Amounts)

	December 31,	
	2022	2021
Assets		
Current assets:		
Cash and cash equivalents	\$ 3,427	\$ 13,823
Restricted cash	99	499
Prepaid expenses and other current assets	606	859
Total current assets	4,132	15,181
Non-current restricted cash	—	99
Land, buildings, and equipment	4,516	21,731
Operating lease right-of-use assets	13,615	—
Other non-current assets	158	183
Total assets	\$ 22,421	\$ 37,194
Liabilities and stockholders' equity		
Current liabilities:		
Accounts payable	\$ 340	\$ 1,260
Accrued expenses	173	339
Accrued compensation	107	2,522
Due to related parties	175	172
Current portion of financing lease obligations	97	370
Common stock warrants	291	—
Other current liabilities	479	191
Total current liabilities	1,662	4,854
Financing lease obligations	—	17,506
Operating lease obligations	13,447	—
Other non-current liabilities	79	702
Total liabilities	15,188	23,062
Stockholders' equity:		
Common stock, \$0.0001 par value; 275,000,000 shares authorized; 48,944,771 shares issued and 48,844,619 shares outstanding as of December 31, 2022, and 38,874,146 shares issued and 38,773,994 shares outstanding as of December 31, 2021	5	4
Additional paid-in capital	220,422	211,263
Common stock in treasury, at cost; 100,152 shares as of December 31, 2022, and December 31, 2021	(1,043)	(1,043)
Accumulated deficit	(212,151)	(196,092)
Total stockholders' equity	7,233	14,132
Total liabilities and stockholders' equity	\$ 22,421	\$ 37,194

See accompanying notes to the Consolidated Financial Statements.

CALYXT, INC.
CONSOLIDATED STATEMENTS OF OPERATIONS
(In Thousands Except Shares and Per Share Amounts)

	Year Ended December 31,		
	2022	2021	2020
Revenue	\$ 157	\$ 25,987	\$ 23,851
Cost of goods sold	—	28,557	35,127
Gross profit	157	(2,570)	(11,276)
Operating expenses:			
Research and development	11,553	11,335	11,082
Selling, general, and administrative	10,974	15,427	20,789
Restructuring costs	—	—	685
Total operating expenses	22,527	26,762	32,556
Loss from operations	(22,370)	(29,332)	(43,832)
Gain upon extinguishment of Payroll Protection Program loan	—	1,528	—
Interest, net	(87)	(1,414)	(878)
Non-operating income (expenses)	5,566	19	(126)
Loss before income taxes	(16,891)	(29,199)	(44,836)
Income taxes	—	—	—
Net loss	\$ (16,891)	\$ (29,199)	\$ (44,836)
Basic and diluted net loss per share	\$ (0.37)	\$ (0.78)	\$ (1.32)
Weighted average shares outstanding - basic and diluted	45,997,525	37,475,763	33,882,406
Anti-dilutive stock options, restricted stock units, performance stock units, and common stock warrants	15,960,659	6,001,405	5,552,418

See accompanying notes to the Consolidated Financial Statements.

CALYXT, INC.
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY
(In Thousands Except Shares Outstanding)

	Shares Outstanding	Common Stock	Additional Paid-In Capital	Shares in Treasury	Accumulated Deficit	Accumulated Other Comprehensive Income (Loss)	Total Stockholders' Equity
Balances at December 31, 2019	32,951,329	\$ 3	\$185,588	\$(1,043)	\$ (122,057)	\$ 17	\$ 62,508
Net loss	—	—	—	—	(44,836)	—	(44,836)
Stock-based compensation	—	—	4,971	—	—	—	4,971
Issuance of common stock and payment of minimum employee taxes withheld upon net share settlement of restricted stock units	381,507	—	212	—	—	—	212
Issuance of common stock from the follow-on offering, net of \$1.0 million of issuance costs	3,750,000	1	14,036	—	—	—	14,037
Shares withheld for net share settlement	(17,792)	—	—	—	—	—	—
Other comprehensive income	—	—	—	—	—	(17)	(17)
Balances at December 31, 2020	37,065,044	4	204,807	(1,043)	(166,893)	—	36,875
Net loss	—	—	—	—	(29,199)	—	(29,199)
Stock-based compensation	—	—	2,090	—	—	—	2,090
Issuance of common stock and payment of minimum employee taxes withheld upon net share settlement of restricted stock units	270,303	—	227	—	—	—	227
Issuance of common stock from ATM Facility, net of \$0.5 million of issuance costs	1,438,647	—	4,139	—	—	—	4,139
Shares withheld for net share settlement	—	—	—	—	—	—	—
Balances at December 31, 2021	38,773,994	4	211,263	(1,043)	(196,092)	—	14,132
Net loss	—	—	—	—	(16,891)	—	(16,891)
Stock-based compensation	—	—	3,998	—	—	—	3,998
Issuance of common stock and payment of minimum employee taxes withheld upon net share settlement of restricted stock units	304,517	—	—	—	—	—	—
Issuance of common stock from ATM Facility, net of offering expenses	2,006,108	—	111	—	—	—	111
Issuance of common stock and pre-funded warrants in registered offering, net of \$0.5 million of offering costs	3,880,000	1	5,050	—	—	—	5,051
Issuance of common stock upon exercise of pre-funded warrants	3,880,000	—	—	—	—	—	—
Cumulative effect of adoption of lease accounting standard	—	—	—	—	832	—	832
Balances at December 31, 2022	48,844,619	\$ 5	\$220,422	\$(1,043)	\$(212,151)	\$ —	\$ 7,233

See accompanying notes to the Consolidated Financial Statements.

CALYXT, INC.
CONSOLIDATED STATEMENTS OF CASH FLOWS
(In Thousands)

	Year Ended December 31,		
	2022	2021	2020
Operating activities			
Net loss	\$(16,891)	\$(29,199)	\$(44,836)
Adjustments to reconcile net loss to net cash used by operating activities:			
Gain upon extinguishment of Payroll Protection Program loan	—	(1,528)	—
Depreciation and amortization	1,534	2,338	1,869
Stock-based compensation	3,998	2,090	4,971
Unrealized (gain) loss on mark-to-market of common stock warrants	(5,120)	—	—
Changes in operating assets and liabilities:			
Accounts receivable	—	4,887	(3,765)
Due to/from related parties	3	(594)	(211)
Inventory	—	1,383	1,211
Prepaid expenses and other current assets	389	3,331	(3,122)
Accounts payable	(229)	(360)	(148)
Accrued expenses	(166)	(2,542)	347
Accrued compensation	(2,415)	572	(231)
Other	(467)	811	243
Net cash used by operating activities	(19,364)	(18,811)	(43,672)
Investing activities			
Sales and (purchases) of short-term investments, net	—	11,698	(11,698)
Purchases of land, buildings, and equipment	(1,520)	(497)	(1,786)
Net cash (used) provided by investing activities	(1,520)	11,201	(13,484)
Financing activities			
Proceeds from common stock issuance	11,538	4,380	15,000
Costs incurred related to the issuance of stock	(1,173)	(501)	(963)
Proceeds from Payroll Protection Program loan	—	—	1,518
Repayments of financing lease obligations	(376)	(364)	(360)
Proceeds from the exercise of stock options	—	227	212
Net cash provided by financing activities	9,989	3,742	15,407
Net decrease in cash, cash equivalents, and restricted cash	(10,895)	(3,868)	(41,749)
Cash, cash equivalents, and restricted cash - beginning of period	14,421	18,289	60,038
Cash, cash equivalents, and restricted cash — end of period	\$ 3,526	\$ 14,421	\$ 18,289

See accompanying notes to the Consolidated Financial Statements.

CALYXT, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

1. ORGANIZATION AND SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Overview

Calyxt, Inc. was founded in 2010 and incorporated in Delaware. Calyxt is a plant-based synthetic biology company. The Company leverages its proprietary PlantSpring™ technology platform to engineer plant metabolism to produce innovative, high-value, and sustainable materials and products for use in helping customers meet their sustainability targets and financial goals. The Company's primary focus and commercialization strategy is on engineering synthetic biology solutions through its PlantSpring technology platform for manufacture using its proprietary and differentiated BioFactory™ production system for a diverse base of target customers across a range of end markets, including the cosmeceutical, nutraceutical, and pharmaceutical industries. The Company also commercializes its PlantSpring technology platform by licensing elements of the platform and historically developed traditional agriculture seed-trait product candidates, as well as selectively developing product candidates for customers in traditional agriculture.

Prior to its IPO on July 25, 2017, the Company was a wholly owned subsidiary of Collectis. As of December 31, 2022, Collectis owned 49.1 percent of the Company's issued and outstanding common stock. Collectis has certain contractual rights as well as rights pursuant to the Company's certificate of incorporation and bylaws, in each case, for so long as it maintains threshold beneficial ownership levels in the Company's shares. See "Risk Factors—Although Collectis and its affiliates hold less than a majority of the Company's outstanding common stock, Collectis possesses certain rights that prevent other stockholders from influencing significant decisions."

Basis of Presentation and Use of Estimates

The Company has prepared its consolidated financial statements in accordance with accounting principles generally accepted in the United States (U.S. GAAP or GAAP) and has included the accounts of Calyxt and its subsidiary.

The preparation of consolidated financial statements in conformity with U.S. GAAP requires the Company to make estimates and assumptions that affect the reported amounts in the consolidated financial statements and accompanying notes, including those related to revenue recognition, the net realizable value of inventories, stock-based compensation, and valuation allowances on deferred tax assets. Actual results could materially differ from these estimates.

Cash, Cash Equivalents, Restricted Cash, and Investments

All investments purchased with an original maturity of three months or less are accounted for as cash equivalents. The Company's restricted cash balances are cash and cash equivalents deposited in an amount equal to the future rent payments as required under the Company's equipment lease facility. The Company may request the return of excess restricted cash collateral annually in December. The amount of the restricted cash balance the Company expects to have returned in 2023 is reflected as a current asset.

The Company periodically invests its cash in high grade, highly liquid securities, and investment funds. The Company considers securities purchased with more than ninety days to their original maturity at issuance to be short-term investments. These short-term investments are classified as available-for-sale securities based on the Company's intent to generally match maturities with Calyxt's projected monthly cash usage. The Company held these securities to their planned maturity or liquidated them earlier in response to variations in the Company's monthly cash usage.

The Company ensures the credit risk in this portfolio is in accordance with its internal policies and if necessary, makes changes to investments to ensure credit risk is minimized. The Company has not experienced any counterparty credit losses.

Accounts Receivable

Accounts receivable are unsecured and are recorded at net realizable value. The Company makes judgments as to its ability to collect outstanding receivables based upon patterns of collectability, historical experience, and its evaluation of specific accounts and will provide an allowance for credit losses when collection becomes doubtful. The Company performs credit evaluations of its customers' financial condition on an as-needed basis. Payment is generally due fifteen or thirty days from the invoice date depending upon the product, and accounts past 30 days are individually analyzed for collectability. When all collection efforts have been exhausted, the account is written off.

Inventory

Inventories are recorded at the lower of cost or net realizable value and include all costs of seed production and grain the Company purchased as well as costs to store and transport the grain. As of December 31, 2020, inventory included the costs to process the grain into finished products. Consideration received from growers when they purchase seed is recorded as a reduction of inventory.

The Company evaluates inventory balances for obsolescence or estimated net realizable value on a regular basis based on the age of the inventory and its sales forecasts. At each period-end, the Company made assumptions regarding projected selling prices for its products considering futures market prices for the underlying agricultural markets and its associated risk management strategies, anticipated costs, and other factors that take into consideration its limited operating history and compare those prices to the current weighted average inventory costs. If the Company's costs were higher than the projected selling prices, then a valuation adjustment was recorded.

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Prior to the commercialization of its high oleic soybean products, the Company expensed all grain costs as R&D.

Forward Purchase Contracts

Under the Company's former go-to-market soybean strategy, it would enter into hedging contracts to convert fixed price grain inventories and fixed price grain production agreements to floating prices, consistent with how the grain was sold.

The seed contracts often required the Company to pay prices for the seed produced at commodity futures market prices plus a premium. The seed growers had the option to fix their price with the Company throughout the term of the agreement. The Company paid a portion of the seed cost in December each year and the remainder upon delivery in either the first or second quarter of the following year.

The grain grower contracts required the Company to pay prices for all grain produced at commodity futures market prices plus a premium. The grain growers had the option to fix their price with the Company throughout the term of the agreement. The grain grower contracts allowed for delivery of grain to the Company at harvest, if so specified when the agreement was executed, otherwise delivery occurred on a date that was elected by the Company through August 31, 2021. The Company paid for grain within a contractually determined number of days following delivery and final pricing.

Upon delivery, the inventory was carried at historical cost but sold at prevailing market prices. As a result, the Company entered into hedging arrangements by selling futures contracts which converted its market exposure to these fixed prices to floating prices. By executing these hedging strategies, the Company could closely match the expected economic terms of the grain sale with the market, which helped stabilize margins until such inventory was sold. The Company did not account for these economic hedges as accounting hedges. All unrealized gains or losses on outstanding hedging contracts were recognized in Cost of Goods sold. The Company expected that any gains or losses from these hedging arrangements would be offset by gains or losses on the grain inventories when such grain inventories were sold.

Prior to August 1, 2020, the Company designated all of its commodity derivative contracts as cash flow hedges based on the nature of its business activities. As a result, all gains or losses associated with recording those commodity derivative contracts at fair value were recorded as a component of accumulated other comprehensive income (loss) (AOCI). The Company reclassified amounts from AOCI to cost of goods sold when the underlying products were sold to which those hedges related. For the year ended December 31, 2020, the Company reclassified a nominal amount from AOCI to cost of goods sold, and there were no such reclassifications in 2021 or 2022.

Land, Buildings, and Equipment

Land, buildings, and equipment are stated at cost less accumulated depreciation. Assets under capital lease are stated at the lesser of their net present value of future lease payments or fair market value. Repair and maintenance costs are expensed as incurred. The cost and accumulated depreciation of property and equipment retired, or otherwise disposed of, are removed from the related accounts, and any residual values are charged to expense. Depreciation is recorded using the straight-line method over estimated useful lives as follows:

Buildings and improvements	10-20 years
Leasehold improvements	Shorter of lease term or 15 years
Office furniture and equipment	7 years
Assets under capital lease	4-20 years
Computer equipment and software	3-5 years
Vehicles	3-6 years

Impairment of Long-Lived Assets

The Company has a single asset group and reviews its long-lived assets for impairment whenever events or changes in circumstances indicate that the carrying amount of that asset group may not be recoverable. If the impairment tests indicate that the carrying value of the asset group is greater than the expected undiscounted cash flows to be generated by the asset group, further analysis is performed to determine the fair value of the asset group. To the extent the fair value of the asset group is less than its carrying value, an impairment loss is recognized equal to the amount the carrying value exceeds the fair value of the asset group. If the Company's plans or intentions change with regard to a specific asset within the asset group, that asset's remaining useful life is assessed, and depreciation is accelerated if necessary. Assets to be disposed of are carried at the lower of their carrying value or fair value less costs to sell. Fair value is measured using a discounted cash flow model or independent appraisals, as appropriate. The Company has not recognized any impairment losses in these consolidated financial statements.

Revenue Recognition

The Company accounts for a contract as revenue when it has approval and commitment to perform from both parties, the rights of the parties are identified, payment terms are established, the contract has commercial substance, and collectability of the consideration is probable. Changes to contracts are assessed for whether they represent a modification or should be accounted for as a new contract. The Company considers the following indicators, among others, when determining if it is acting as a principal in the transaction and recording revenue on a gross basis: (i) the Company is primarily responsible for fulfilling the promise to provide the specified good or service, (ii) the Company has inventory risk before the specified good

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or service has been transferred to a customer or after transfer of control to the customer and (iii) the Company has discretion in establishing the price for the specified good or service. If a transaction does not meet the Company's indicators of being a principal in the transaction, then the Company is acting as an agent in the transaction and the associated revenues are recognized on a net basis.

The Company recognizes revenue when control of the good or service has passed to the customer. The following indicators are evaluated in determining when control has passed to the customer: (i) the customer has legal title to the product, (ii) the Company has transferred physical possession of the product or service to the customer, (iii) the Company has a right to receive payment for the good or service, (iv) the customer absorbs the significant risks and rewards of ownership of the good and (v) the customer has accepted the good.

The Company generally does not incur costs to obtain new contracts.

Performance Obligations

A performance obligation is a promise in a contract to transfer a distinct good or service to the customer. A contract's transaction price is allocated to each distinct performance obligation and recognized as revenue when, or as, the performance obligation is satisfied. The Company's contracts may contain multiple performance obligations if a promise to transfer the individual good or service is separately identifiable from other promises in the contracts and, therefore, is considered distinct. Performance obligations that are not considered distinct are combined with other goods or services in the contract until that combination meets the distinct criteria above. For contracts with multiple performance obligations, the Company determines the standalone selling price of each performance obligation and allocates the total transaction price using the relative selling price basis.

The following is a description of the principal goods and services from which the Company generates revenue:

Product Sales

Historically, the Company sold soybean grain, oil, and meal. The Company recognized sales revenue at the point in time that title transferred to the customer, which was based on shipping terms. Sales included shipping and handling charges if billed to the customer and were reported net of trade promotion and other costs, including estimated allowances for returns, unsalable products, and prompt pay discounts. Sales, use, value-added, and other excise taxes were not recognized in revenue. Trade promotions were recorded based on estimated participation and performance levels for offered programs at the time of sale. The Company generally did not allow a right of return.

During 2021 and 2020, the Company sold soybean grain to a processor and subsequent to the sale they utilized the Company's rented third-party storage facility to hold the grain until such time they requested it be delivered. The Company was responsible for all handling charges and delivery activities. In those instances, the Company recognized revenue from the sale of grain to the processor upon the transfer of the control of the grain, which was determined to be at the time of the issuance of the purchase order and assignment of warehouse receipts to the customer. The Company determined that the reason for the arrangement was substantive, in that the customer had requested the arrangement, the product was separately identified as belonging to the customer, the product was ready for physical transfer, and the Company did not have the ability to use the product or direct it to another customer. The Company concluded that any remaining performance obligations (e.g., for custodial services) were immaterial in relation to the contract. The Company concurrently accrued all estimated future storage, handling, and delivery costs associated with that sale. All arrangements of this nature were completed prior to December 31, 2021.

In certain transactions occurring in the third quarter of 2020, the Company sold grain to a processor with a commitment to provide consideration to the processor in exchange for the soybean meal resulting from the grain crushing activity. The Company determined the consideration payable to the processor was not in exchange for a distinct good or service, as the soybean meal was considered highly interrelated to the grain because they both possess Calyxt specific genetic traits, and the transactions were entered into in contemplation of one another, and therefore, were not considered to be distinct within the context of the contract. For these transactions, the Company recognized revenue from the sale of grain in the amount of the final net cash settlement with the processor, as the consideration payable to the processor was treated as a reduction of revenue.

Technology Licensing

The Company recognizes revenue from license agreements, which may consist of nonrefundable up-front payments, milestone payments, annual licensing fee payments, royalty payments, and payments for services.

Nonrefundable up-front payments are deferred and recognized as revenue over the term of the license agreement. If a license agreement is terminated before the original term of the agreement is fulfilled, all remaining deferred revenue is recognized at termination.

Annual licensing fee payments are generally associated with services in the contract and are recognized over time as the customer receives the benefits of the services. If necessary, the Company establishes and increases a contract asset as the revenue is recognized. For these types of payments, the Company recognizes revenue using an input method, such as the completed contract or time elapsed methods, or an output method, such as the work performed or units produced methods. The Company will apply each method of revenue recognition consistently for like contracts and assess any revenue estimates periodically for cumulative adjustments.

In certain instances, the receipt of payments in these arrangements are dependent upon the achievement of certain scientific, regulatory, commercial, or other milestones. The Company recognizes milestone payments when the triggering event has occurred, there are no further contingencies or services to be provided with respect to that event, and the counterparty has no right to refund of the payment.

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Royalty revenues are expected to arise following the commercialization of products developed using the licensed technology by the counterparty to the license agreement. The royalties may be a percentage of sales or another measurement achieved by the licensee. Royalty revenues will be recognized at the later of (i) when the licensee is generating sales subject to royalty payments or (ii) the performance obligation to which the sales-based or usage-based royalties relates has been satisfied.

Product Development Agreements

The Company recognizes revenue from product development agreements, which may consist of nonrefundable up-front payments, milestone payments, annual payments, and payments for services.

Nonrefundable up-front payments are recognized as revenue over the term of the development agreement. If a development agreement is terminated before the original term of the agreement is fulfilled, all remaining deferred revenue is recognized at termination.

In certain instances, the receipt of payments in these arrangements are dependent upon the achievement of certain scientific, regulatory, commercial, or other milestones. Milestone payments are considered variable consideration which are evaluated against the Company's performance obligations for determination of when it is appropriate to recognize revenue. For purposes of revenue recognition, the Company considers whether the performance obligation is achieved, which may be (i) when a triggering event has occurred, (ii) there are no further contingencies or services to be provided with respect to that event, and (iii) the customer has no right to require refund of their payment. The Company recognizes milestone payments as revenue when it is highly probable that any revenue recognized will not be subsequently reversed.

Annual payments are generally associated with services in the contract and are recognized over time as the customer receives the benefits of the services. If necessary, the Company establishes and increases a contract asset as the revenue is recognized. For these types of payments, the Company recognizes revenue using an input method, such as the completed contract or time elapsed methods, or an output method, such as the work performed or units produced methods. The Company will apply each method of revenue recognition consistently for like contracts and assess any revenue estimates periodically for cumulative adjustments.

Agreements for the performance of R&D services and cost reimbursements are recognized as revenue over time based on work performed.

Collaborative Arrangements

For arrangements that do not represent contracts with a customer, the Company analyzes the transaction to assess whether the arrangement involves joint operating activities performed by parties that are both active participants in the activities and exposed to significant risks and rewards that are dependent on the commercial success of such activities. The Company had no such arrangements as of December 31, 2022.

Advertising Costs

The Company expenses advertising costs as incurred.

Research and Development Expenses

The Company recognizes R&D expenses as incurred. These expenses consist of direct costs for R&D and R&D-related allocations of overhead costs such as facilities and information technology costs. Costs incurred in connection with customer-funded activities are expensed as incurred. Costs to acquire technologies that are utilized in R&D that have no alternative future use are expensed as incurred. Prior to the commercialization of the Company's soybean product, the Company expensed all grain costs as R&D.

Patents

The Company expenses patent costs, including related legal costs, as incurred. Costs to write and support the research for filing patents are recorded as R&D expenses in the statements of operations. Costs to maintain, in-license, and defend patents are recorded as SG&A expenses in the statements of operations.

Stock-Based Compensation

The Company generally measures the fair value of employee and nonemployee stock-based awards on their grant date and records compensation expense on a straight-line basis over the related service period of the award, which is generally the vesting period. The Company uses the Black-Scholes option pricing model to value its stock option awards. The Company generally measures compensation expense for grants of restricted stock units using the Company's share price on the date of grant. The Company uses a Monte Carlo simulation pricing model when estimating the fair values of PSUs. The Company estimates fair values and accounts for employee and nonemployee awards in a similar manner.

Due to the Company's limited history, it does not always have sufficient historical stock option activity to make predictive assumptions based solely on its stock or stock option activity for the Black-Scholes option pricing model. As a result, the Company may need to use data from other comparable public companies or alternative calculation methods to make predictive assumptions.

The Company estimates its future stock price volatility using the weighted-average historical volatility calculated from a group of comparable public companies over the expected term of the option. The group of comparable public companies is determined by management on an annual basis. When

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selecting a comparable company, management considers relevant factors including industry and strategy, size, maturity, and financial leverage. The comparable companies used by management to calculate expected volatility may change from year-to-year because of changes in those factors and because a new comparable company may become publicly traded.

The expected term of stock options is estimated using the average of the vesting tranches and the contractual life of each grant for employee options, or the simplified method, as the Company has limited historical information to develop reasonable expectations about future exercise patterns and post-vesting employment termination behavior for its stock option grants.

Due to the limited historical experience of the Company's stock awards program, it has elected to account for forfeitures of awards as they occur. If an award is forfeited prior to vesting, the associated reduction in expense is reflected net in stock-based compensation expense in that period. Stock-based compensation expense is recorded in R&D and SG&A expenses in the Company's consolidated statements of operations.

Income Taxes

Current income taxes are recorded based on statutory obligations for the current operating period for the jurisdictions in which the Company has operations.

Deferred taxes are provided on an asset and liability method, whereby deferred tax assets are recognized for deductible temporary differences and deferred tax liabilities are recognized for taxable temporary differences. Temporary differences are the differences between the reported amounts of assets and liabilities and their tax basis. Deferred tax assets are reduced by a valuation allowance when the Company believes it is more likely than not that some portion or all the deferred tax assets will not be realized. Deferred tax assets and liabilities are adjusted for the effects of changes in tax laws and rates on the date of enactment.

Foreign Currency Transactions

Transactions in foreign currencies are translated at the exchange rates effective on the transaction dates. Assets and liabilities denominated in foreign currencies are translated at the period-end exchange rate. Foreign currency gains and losses are recognized in non-operating expenses in the consolidated statements of operations.

Foreign currency fluctuations affect the Company's foreign currency cash flows related primarily to payments to Collectis. The Company's principal foreign currency exposure is to the euro. The Company does not hedge these exposures, and it does not believe that the current level of foreign currency risk is significant to its operations.

Net Loss Per Share

Due to the Company's net loss position for the years ended December 31, 2022, 2021, and 2020, all its outstanding stock options, restricted stock units, PSUs, and Common Warrants are considered anti-dilutive and excluded from the calculation of net loss per share. Accordingly, the treasury method was not used in determining the number of anti-dilutive stock options and restricted stock units.

Recently Issued Accounting Pronouncements

In February 2016, the Financial Accounting Standards Board (FASB) issued Accounting Standard Update (ASU) No. 2016-02, Leases (Topic 842) and in July 2018, ASU No. 2018-10, Codification Improvements to Topic 842, Leases, and ASU 2018-11, Leases (Topic 842) – Targeted Improvements (collectively, the New Lease Standard). The New Lease Standard requires lessees to record assets and liabilities on the balance sheet for all leases with terms longer than 12 months. The New Lease Standard establishes ROU model that requires a lessee to recognize a ROU asset and lease liability on the balance sheet for all leases with a term longer than 12 months. Leases will be classified as either finance or operating, with the classification affecting the pattern of expense recognition in the income statement.

The Company adopted the New Lease Standard as of January 1, 2022, using the transition method which does not require revisions to comparative periods. The Company elected to implement the transition package of practical expedients permitted within the New Lease Standard, which among other things, allows it to carryforward the historical lease classification. In addition, the Company elected the hindsight practical expedient to determine the lease term for existing leases and it also made an accounting policy election to not record leases with an initial term of 12 months or less on its consolidated balance sheet.

The Company's adoption of the New Lease Standard required it to remove the previously reported amounts for land, buildings, and equipment associated with its headquarters and laboratory facility lease as well as the associated liability. The Company assessed the elements of its lease agreement and upon adoption, recorded an operating lease associated with the sale leaseback of land component of the lease, and a second operating lease associated with the building component of the lease. The Company recorded operating lease assets and liabilities of \$14.1 million within its consolidated balance sheet as of January 1, 2022. The New Lease Standard had no impact on the Company's consolidated statements of operations or cash flows. The \$0.8 million cumulative effect of the adoption of the New Lease Standard was recorded to stockholders' equity. See Note 8 for further information regarding the Company's leases.

In June 2016, the FASB issued ASU No. 2016-13, "Financial Instruments – Credit Losses (Topic 326)" (ASU 2016-13). ASU 2016-13 creates accounting requirements on how to account for credit losses on most financial assets and certain other instruments. This will require the estimation of

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lifetime expected credit losses and corresponding recognition of allowance for losses on trade and other receivables, loans, and other instruments held at amortized cost. The ASU requires certain recurring disclosures and is effective for annual periods, and interim periods within those annual periods, beginning on or after December 15, 2023. The Company is analyzing the impact of this standard on its results of operations and financial position.

2. GOING CONCERN

The Company has incurred losses since its inception. The Company's net loss was \$16.9 million for the year ended December 31, 2022, and it used \$19.4 million of cash for operating activities for the year ended December 31, 2022. The Company's primary sources of liquidity are its cash and cash equivalents, with additional liquidity accessible, subject to market conditions and other factors, including limitations that may apply to the Company under applicable SEC and Nasdaq Capital Market (Nasdaq) regulations, from the capital markets, including under the Open Market Sale AgreementSM with Jefferies LLC (as amended, the ATM Facility).

As of December 31, 2022, the Company had \$3.5 million of cash, cash equivalents, and restricted cash. The Company's restricted cash is associated with its equipment financing leases and was \$0.1 million as of December 31, 2022, and will be returned following the payoff of the lease obligations in 2023. Current liabilities were \$1.7 million as of December 31, 2022.

On October 3, 2022, the Company entered into an amendment to the Open Market Sale Agreement with Jefferies for the ATM Facility that enables it, subject to the applicable baby shelf rules described below, to offer and sell up to 15,661,000 shares of its common stock. At its discretion, the Company determines the timing and number of shares to be issued under the ATM Facility. During the fourth quarter of 2022, the Company issued approximately 2.0 million shares of common stock under the ATM Facility for proceeds of \$0.1 million net of commissions and payments for other share issuance costs. From December 31, 2022, through the date of this report, the Company has not issued any additional shares under the ATM Facility.

During the February 2022 Offering, the Company issued 3,880,000 shares of its common stock, Pre-Funded Warrants to purchase up to 3,880,000 shares of its common stock, and Common Warrants to purchase up to 7,760,000 shares of its common stock in the Follow-On Offering. In the aggregate, the Company received net proceeds of \$10.0 million, after deducting approximately \$0.9 million of underwriting discounts and estimated other offering expenses.

The Company has incurred losses since its inception and anticipates that it will continue to generate losses for the next several years. Over the longer term and until the Company can generate cash flows sufficient to support its operating capital requirements, it expects to finance a portion of future cash needs through (i) cash on hand, (ii) commercialization activities, which may result in various types of revenue streams from (a) future product development agreements and technology licenses, including upfront and milestone payments, annual license fees, and royalties; and (b) product sales from its proprietary BioFactory production system; (iii) government or other third-party funding, (iv) public or private equity or debt financings, or (v) the execution of an alternative strategic transaction pursuant to the board of directors' ongoing evaluation process, or (vi) a combination of the foregoing. However, capital generated by commercialization activities, if any, is expected to be received over a period of time and near-term additional capital may not be available on reasonable terms, if at all.

Although the Company has access to the ATM Facility, based on the Company's public float, as of the date of the filing of this Annual Report, the Company is only permitted to utilize a "shelf" registration statement for primary offerings, including the registration statement under which the ATM Facility is operated, subject to Instruction I.B.6 to Form S-3, which is referred to as the "baby shelf" rules. For so long as the Company's public float is less than \$75,000,000, it may not sell more than the equivalent of one-third of its public float during any 12 consecutive months pursuant to the baby shelf rules. While alternative public and private transaction structures may be available, these may require additional time and cost, may result in substantial dilution to existing stockholders, particularly in light of the Company's current stock price, may impose operational restrictions on the Company, and may not be available on attractive terms or at all. Accordingly, the Company continuously assesses market conditions and available financing alternatives.

The Company's ability to continue as a going concern will depend on its ability to obtain additional public or private equity or debt financing, obtain government or private grants and other similar types of funding, to consummate an alternative strategic transaction, attain further operating efficiencies, reduce or contain expenditures, and, ultimately, to generate revenue.

The Company believes that its cash, cash equivalents, and restricted cash as of December 31, 2022, considering continuing actions taken to reduce its operating expenses to enable the Transactions to close, the legal settlement discussed in Note 8 to the consolidated financial statements, and funding to be provided by Cibus are sufficient to fund its operations through the second quarter of 2023. The Company's management has concluded there is substantial doubt regarding its ability to continue as a going concern because it will need to raise additional capital to support its business plan for a period of 12 months or more from the date of this filing.

The accompanying financial statements have been prepared on a going concern basis, which contemplates the realization of assets and satisfaction of liabilities in the ordinary course of business. The financial statements do not include any adjustments relating to the recoverability and classification of recorded asset amounts or the amounts and classification of liabilities that might result from the outcome of the uncertainties described above.

Management has implemented various cost reduction and other cash-focused measures to manage liquidity. If the Company is unable to raise additional capital in a sufficient amount or on acceptable terms or to consummate an alternative strategic transaction, the Company may have to implement increasingly stringent cost saving measures and significantly delay, scale back, or cease operations, in part or in full. If the Company raises additional funds through the issuance of additional debt or equity securities, including as part of a strategic alternative, it could result in substantial dilution to its existing stockholders and increased fixed payment obligations, and these securities may have rights senior to those of the Company's shares of common stock. Any of these events could significantly harm the Company's business, financial condition, and prospects.

3. FINANCIAL INSTRUMENTS MEASURED AT FAIR VALUE AND CONCENTRAIONS OF CREDIT RISK

Financial Instruments Measured at Fair Value and Financial Statement Presentation

Financial instruments including cash and cash equivalents, restricted cash, accounts payable, and all other current liabilities have carrying values that approximate fair value. The Company measures Common Warrants on a quarterly basis. The accounting guidance establishes a three-tier hierarchy, which prioritizes the inputs used in the valuation methodologies in measuring fair value as of the measurement date as follows:

Level 1: Fair values are based on unadjusted quoted prices in active trading markets for identical assets and liabilities.

Level 2: Fair values are based on observable quoted prices other than those in Level 1, such as quoted prices for similar assets or liabilities in active markets or quoted prices for identical assets or liabilities in inactive markets.

Level 3: Fair values are based on at least one significant unobservable input for the asset or liability.

Fair Value Measurements and Financial Statement Presentation

As of December 31, 2021, the Company had no financial instruments measured at fair value. The fair values of the Company's financial instruments measured at fair value and their respective levels in the fair value hierarchy as of December 31, 2022, were as follows:

In Thousands	December 31, 2022				December 31, 2022			
	Fair Values of Assets				Fair Values of Liabilities			
	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3	Total
Other items reported at fair value:								
Common stock warrants	\$ —	\$ —	\$ —	\$—	\$ —	\$ —	\$ 291	\$291
Total	\$ —	\$ —	\$ —	\$—	\$ —	\$ —	\$ 291	\$291

The Company estimates the fair value of the Common Warrants as of the date of issuance and at the end of every fiscal period using a Black-Scholes option pricing model, which requires it to make predictive assumptions regarding future stock price volatility and dividend yield. The Company estimates the risk-free interest rate based on the United States Treasury zero-coupon yield curve for the remaining life of the Common Warrants. The Company estimates its future stock price volatility using its historical volatility over the remaining life of the Common Warrants. The Company does not pay dividends and does not expect to pay dividends in the foreseeable future.

The estimated fair values of the Common Warrants, and the assumptions used for the Black-Scholes option pricing model were as follows:

	As of December 31, 2022
Estimated fair value of Common Warrants:	\$ 0.04
Assumptions:	
Expected term to liquidation (in years)	4.6
Expected volatility	85.0%
Risk-free interest rate	4.0%

As of December 31, 2022, the Company had no other financial instruments measured at fair value.

The non-current portion of the Company's financing lease obligations are also considered a financial instrument, which the Company measures at fair value for disclosure purposes. It is a Level 2 liability and as of December 31, 2021, it had a fair value of \$14.5 million. There is no non-current portion of the financing lease obligation at December 31, 2022.

Concentrations of Credit Risk

The Company invests its cash, cash equivalents, and restricted cash in highly liquid securities and investment funds. The Company diversifies the risk associated with investing in securities by allocating its investments to a diverse portfolio of short-dated, high investment-grade securities, which it classifies as short-term investments that are recorded at fair value in its consolidated financial statements. The Company maintains the credit risk in this portfolio in accordance with its internal policies and if necessary, makes changes to investments to minimize credit risk. The Company has not experienced any counterparty credit losses. As of December 31, 2022, the Company did not hold any short-term investments.

4. RELATED-PARTY TRANSACTIONS

The Company is party to several agreements that govern its relationship with Collectis, some of which require the Company to make payments to Collectis. Pursuant to the Company's management services agreement with Collectis, it incurred no management fee expenses in 2022, and it incurred nominal management fee expenses in 2021 and 2020.

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Collectis has also guaranteed the lease agreement for the Company's headquarters. Collectis' guarantee of the Company's obligations under the lease will terminate at the end of the second consecutive calendar year in which the Company's tangible net worth exceeds \$300 million. The Company agreed to indemnify Collectis for any obligations incurred by Collectis under its guaranty of the obligations under the lease, effective upon Collectis' ownership falling to 50 percent or less of the Company's outstanding common stock. This indemnification obligation was triggered in October 2022.

TALEN[®] is the Company's primary gene editing technology. TALEN[®] technology was invented by researchers at the University of Minnesota and Iowa State University and exclusively licensed to Collectis. The Company obtained an exclusive license for the TALEN[®] technology for commercial use in plants from Collectis. The Company also licenses other technology from Collectis. Collectis is entitled to royalties on any revenue the Company generates from sales of products less certain amounts as defined in the license agreement, royalties on certain cumulative revenue thresholds, and a percentage of any sublicense revenues. The Company has incurred nominal license and royalty fees for the years ended December 31, 2022, 2021, and 2020.

5. STOCKHOLDERS' EQUITY

Preferred Stock

Preferred stock of 50.0 million shares, with a \$0.0001 par value, is authorized but unissued.

Follow-on Public Offerings

During the February 2022 Offering, the Company issued 3,880,000 shares of its common stock, Pre-Funded Warrants to purchase up to 3,880,000 shares of its common stock, and Common Warrants to purchase up to 7,760,000 shares of its common stock. The aggregate offering price for each share of common stock and accompanying Common Warrant was \$1.41 per share. The aggregate offering price for each Pre-Funded Warrant and accompanying Common Warrant was \$1.4099 per share. In the aggregate, the Company received net proceeds of \$10.0 million, after deducting approximately \$0.9 million of underwriting discounts and estimated other offering expenses.

Pre-Funded Warrants

Each Pre-Funded Warrant entitled the holder to purchase one share of the Company's common stock at an exercise price of \$0.0001 per share. The Pre-Funded Warrants were recorded as a component of stockholders' equity within additional paid-in capital. The Pre-Funded Warrants were exercised in full on May 4, 2022, and subsequently settled with the counterparty.

Common Stock Warrants

Each Common Warrant entitles the holder to purchase one share of common stock at an exercise price of \$1.41 per share. The Common Warrants became exercisable on August 23, 2022, and expire on August 23, 2027. The Common Warrants are recorded as a liability in the Company's consolidated balance sheet. Per the terms of the Common Warrants, a holder of an outstanding warrant is not entitled to exercise any portion of such warrant if, upon exercise of such portion of the warrant, the holder's ownership of the Company's common stock (together with its affiliates) or the combined voting power of the Company's securities beneficially owned by such holder (together with its affiliates) would exceed the 4.99 percent after giving effect to the exercise.

Warrant transactions for the year ended December 31, 2022, are as follows:

	Number of Pre-Funded Warrants	Weighted Average Exercise Price	Number of Common Warrants	Weighted Average Exercise Price
Outstanding as of December 31, 2021:				
Issued	3,880,000	\$0.0001	7,760,000	\$ 1.41
Forfeited/canceled	—	—	—	—
Exercised	3,880,000	\$0.0001	—	—
Outstanding as of December 31, 2022:	—	—	7,760,000	\$ 1.41
Exercisable as of December 31, 2022:	—	—	7,760,000	\$ 1.41

On October 20, 2020, the Company completed a follow-on offering of its common stock. It sold an aggregate of 3,750,000 shares of common stock at a price of \$4.00 per share. In the aggregate, the Company received net proceeds from the follow-on offering of \$14.0 million, after deducting \$1.0 million of placement and agent fees and other offering expenses. As part of the follow-on offering, Collectis purchased 1,250,000 shares of common stock for a value of \$5.0 million, the proceeds of which are included in the net proceeds of \$14.0 million.

ATM Facility

On September 21, 2021, the Company entered into an ATM Facility with Jefferies LLC, as sole selling agent. The Company issued approximately 1.4 million shares of common stock under the ATM Facility in 2021. In the aggregate, the Company received net proceeds from the ATM Facility of \$4.1 million through early January 2022.

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On October 3, 2022, the Company entered into an amendment to the Open Market Sale Agreement that enables it, subject to the applicable baby shelf rules, to offer and sell up to 15,661,000 shares of its common stock. At its discretion, the Company determines the timing and number of shares to be issued under the ATM Facility. During the fourth quarter of 2022, the Company issued approximately 2.0 million shares of common stock under the ATM Facility for proceeds of \$0.1 million net of commissions and payments for other share issuance costs. From December 31, 2022, through the date of this report, the Company has not issued any additional shares under the ATM Facility.

6. STOCK-BASED COMPENSATION

The Company uses broad-based stock plans to attract and retain highly qualified officers and employees and to help ensure that management's interests are aligned with those of its shareholders. The Company has also granted equity-based awards to directors, nonemployees, and certain employees of Collectis.

In December 2014, the Company adopted the 2014 Plan, which allowed for the grant of stock options, and in June 2017, it adopted the 2017 Plan, which allowed for the grant of stock options, restricted stock units, PSUs, and other types of equity awards.

On February 19, 2021, James Blome ceased serving as the Company's Chief Executive Officer. The Company recorded a benefit to earnings from a \$2.5 million recapture of non-cash stock compensation expense from the forfeiture of Mr. Blome's unvested stock options, restricted stock units, and PSUs.

On July 16, 2021, the Company filed a Registration Statement on Form S-8 with the SEC which registered an additional 4,299,904 shares of common stock that may be issued or delivered and sold pursuant to the 2017 Plan and 600,000 shares of common stock that may be issued or delivered and sold pursuant to the Calyxt, Inc. Inducement Plan. Shares of common stock are issuable under the Inducement Plan upon the settlement of PSUs which were granted to Mr. Michael A. Carr in July 2021 as a material inducement to accept employment as the Company's President and Chief Executive Officer.

As of December 31, 2022, 2,718,149 shares were registered and available for grant under effective registration statements, while 3,112,568 shares were available for grant in the form of stock options, restricted stock, restricted stock units, and PSUs under the 2017 Plan. Stock-based awards currently outstanding also include awards granted under the 2014 Plan and the Inducement Plan. No further awards will be granted under either the 2014 Plan or the Inducement Plan.

Stock Options

The estimated fair values of stock options granted, and the assumptions used for the Black-Scholes option pricing model were as follows:

	Year ended December 31,		
	2022	2021	2020
Estimated fair values of stock options granted	\$ 0.86	\$ 3.61	\$ 3.24
Assumptions:			
Risk-free interest rate	1.9% - 3.5%	0.6% - 1.2%	0.3% - 1.7%
Expected volatility	89.7% - 92.8%	80.1% - 91.0%	77.4% - 81.2%
Expected term (in years)	5.5 - 6.9	5.5 - 6.5	6.0 - 10.0

The Company estimates the fair value of each option on the grant date, or other measurement date if applicable, using a Black-Scholes option pricing model, which requires it to make predictive assumptions regarding employee exercise behavior, future stock price volatility, and dividend yield. The Company estimates the risk-free interest rate based on the United States Treasury zero-coupon yield curve at the date of grant for the expected term of the option. The Company estimates its future stock price volatility using the weighted-average historical volatility calculated from a group of comparable public companies over the expected term of the option. The expected term of stock options is estimated using the average of the vesting tranches and the contractual life of each grant for employee options, or the simplified method, as the Company has limited historical information to develop reasonable expectations about future exercise patterns and post-vesting employment termination behavior for its stock option grants. The use of the simplified method is dependent upon the type of equity award granted and the term of the award. The Company does not pay dividends and does not expect to pay dividends in the foreseeable future.

Option strike prices are set at 100 percent or more of the closing share price on the date of grant and generally vest over three to six years following the grant date. Options generally expire 10 years after the date of grant.

Information on stock option activity is as follows:

	Options Exercisable	Weighted- Average Exercise Price Per Share	Options Outstanding	Weighted- Average Exercise Price Per Share
Balance as of December 31, 2021	2,789,110	\$ 10.23	4,658,405	\$ 9.47
Granted			1,609,000	1.12
Exercised			—	—
Forfeited or expired			(425,952)	7.02
Balance as of December 31, 2022	3,396,624	\$ 9.94	5,841,453	\$ 7.35

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Stock-based compensation expense related to stock option awards was as follows:

<u>In Thousands</u>	<u>Year ended December 31,</u>		
	<u>2022</u>	<u>2021</u>	<u>2020</u>
Stock-based compensation expense	\$2,031	\$1,850	\$3,371

As of December 31, 2022, options outstanding and exercisable had no aggregate intrinsic value and the weighted average remaining contractual term was 5.0 years as of that date.

Net cash proceeds from the exercise of stock options less shares used for minimum withholding taxes and the intrinsic value of options exercised were as follows:

<u>In Thousands</u>	<u>Year ended December 31,</u>		
	<u>2022</u>	<u>2021</u>	<u>2020</u>
Net cash proceeds	\$—	\$ 227	\$ 212
Intrinsic value of options exercised	\$—	\$ 344	\$ 179

As of December 31, 2022, unrecognized compensation expense related to non-vested stock options was \$3.1 million. This expense will be recognized over 22 months on average.

Restricted Stock Units

The Company grants restricted stock units which generally vest over three to five years after the date of grant. Information on restricted stock unit activity is as follows:

	<u>Number of Restricted Stock Units Outstanding</u>	<u>Weighted- Average Grant Date Fair Value</u>
Unvested balance at December 31, 2021	571,303	\$ 6.15
Granted	1,077,600	1.26
Vested	(303,728)	6.39
Forfeited	(115,969)	4.14
Unvested balance at December 31, 2022	1,229,206	\$ 1.99

The total grant-date fair value of restricted stock unit awards that vested was as follows:

<u>In Thousands</u>	<u>Year ended December 31,</u>		
	<u>2022</u>	<u>2021</u>	<u>2020</u>
Grant-date fair value	\$1,940	\$1,489	\$3,122

Information on the weighted average grant date fair value of restricted stock units issued was as follows:

<u>In Thousands</u>	<u>Year ended December 31,</u>		
	<u>2022</u>	<u>2021</u>	<u>2020</u>
Weighted average grant date fair value	\$1.26	\$4.59	\$6.54

Stock-based compensation expense related to restricted stock units was as follows:

<u>In Thousands</u>	<u>Year ended December 31,</u>		
	<u>2022</u>	<u>2021</u>	<u>2020</u>
Stock-based compensation expense	\$1,318	\$224	\$1,155

As of December 31, 2022, unrecognized compensation expense related to restricted stock units was \$1.2 million. This expense will be recognized over 22 months on average.

The Company accounts for stock-based compensation awards granted to employees of Collectis as deemed dividends. The Company recorded deemed dividends as follows:

<u>In Thousands</u>	<u>Year ended December 31,</u>		
	<u>2022</u>	<u>2021</u>	<u>2020</u>
Deemed dividends from grants to Collectis employees	\$ 90	\$(289)	\$1,168

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Performance Stock Units

From time-to-time, the Company issues PSUs to certain individuals in management in order to align their objectives with stockholders of the Company. Depending upon the type of PSU award, the Company uses a Monte Carlo simulation pricing model when estimating the fair values of these awards.

2022 Grant

In March 2022, the Company granted 530,000 PSUs under the 2017 Plan to five employees including four executive officers. The PSUs include three annual performance periods (2022, 2023, and 2024) and target performance levels for each of those periods linked to the achievement of Company objectives as determined annually for the respective period by the Compensation Committee. Once the annual objectives are approved, the associated expense will be recognized on a straight-line basis over the period through the determination date, which can be no later than March 15 of the following year. Earned awards will be settled in shares of Company stock no later than the March 15 determination date in the following calendar year. The grant date for the tranche of awards linked to 2022 performance is May 4, 2022. Determination of expense for the 2023 and 2024 tranches of PSUs will be made when the associated business objectives are determined. See Note 14 for more information about the vesting of these PSU awards.

2021 Grant

In July 2021, the Company granted 600,000 PSUs under the Inducement Plan to Mr. Carr. The PSUs will vest if the Company's stock remains above three specified price levels for 30 calendar days over the three-year performance period. The PSUs will be settled in unrestricted shares of the Company's common stock on the vesting date.

The estimated fair values of PSUs granted in 2021 and the assumptions used were as follows:

Estimated fair values of performance stock units granted:

At least \$12 per share	\$2.16
At least \$15 per share	\$1.89
At least \$20 per share	\$1.55
Assumptions:	
Expected term (in years)	3.0
Expected volatility	90.0%
Risk-free interest rate	0.4%

The Company estimated the fair value of each tranche of the PSUs on the grant date using the Monte Carlo simulation pricing model, which required it to make predictive assumptions as to the expected term of the grant, future stock price volatility, and dividend yield. The expected term represents the expected service period of the PSUs granted. Expected volatility was based on the historical volatility of the Company's common stock over the expected term. The Company estimates the risk-free interest rate based on the United States Treasury zero-coupon yield curve at the date of grant for the expected term of the option.

2019 Grant forfeitures

In June 2022, PSU grants made to two executive officers in 2019 were forfeited because the underlying performance criteria were not met. These PSUs contained a market condition and had a five-year service period. The Company will continue to expense these PSUs over the remaining service period for these two executive officers. During 2021, the Company recognized a benefit from the forfeiture of 166,667 PSUs held by Mr. Blome, its former Chief Executive Officer.

PSU activity for the year ended December 31, 2022, is as follows:

	Number of PSUs
Outstanding as of December 31, 2021:	745,000
Issued	530,000
Forfeited/canceled	(145,000)
Awarded	—
Outstanding as of December 31, 2022:	<u>1,130,000</u>

Stock-based compensation expense related to PSUs is as follows:

<u>In Thousands</u>	<u>Year ended December 31,</u>		
	<u>2022</u>	<u>2021</u>	<u>2020</u>
Stock-based compensation expenses	\$ 649	\$ 16	\$ 445

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As of December 31, 2022, unrecognized compensation expense related to PSUs was \$0.9 million. This expense will be recognized over 19 months on average.

7. INCOME TAXES

The following table reconciles the United States statutory income tax rate to the Company's effective income tax rate:

	Year ended December 31,		
	2022	2021	2020
United States statutory rate	21.0%	21.0%	21.0%
State tax, net of federal benefit	1.0%	1.0%	4.2%
Stock-based compensation	(1.7%)	(0.7%)	(0.5%)
Officer compensation	(1.4%)	1.5%	(1.0%)
Deferred rate change	— %	— %	— %
R&D credit	2.2%	1.4%	0.8%
PPP Loan	— %	1.1%	— %
Unrealized (gain) loss on mark-to-market of common stock warrants	6.4%	— %	— %
Other	— %	0.1%	(0.1)%
Change in valuation allowance	(27.5%)	(25.4%)	(24.4%)
Effective income tax rate	— %	— %	— %

Deferred assets and liabilities consist of the following:

In Thousands	December 31,		
	2022	2021	2020
Net operating losses	\$ 40,914	\$ 38,671	\$ 33,392
Stock-based compensation	2,950	2,724	2,531
Financing lease obligations	—	3,820	4,574
Operating lease ROU liabilities	2,921	—	—
Tax credit carry forwards	3,685	3,210	2,577
Capitalized R&D	2,183	—	—
Compensation	14	514	339
Derivative liability	—	—	703
Other	124	143	391
Gross deferred tax assets	52,791	49,082	44,507
Less valuation allowance	(49,843)	(45,369)	(39,898)
Net deferred tax assets	2,948	3,713	4,609
Fixed assets	(89)	(3,667)	(4,609)
Operating lease ROU assets	(2,859)	—	—
Other	—	(46)	—
Gross deferred tax liabilities	(2,948)	(3,713)	(4,609)
Net deferred tax asset or liability	\$ —	\$ —	\$ —

The Company provides for a valuation allowance when it is more likely than not that it will not realize a portion of the deferred tax assets. The Company has established a full valuation allowance for deferred tax assets described above due to the uncertainty that enough taxable income will be generated in the taxing jurisdiction to utilize the assets. Therefore, the Company has not reflected any benefit of such deferred tax assets in the accompanying consolidated financial statements.

The Company has \$239.2 million of tax loss carryforwards. Of this amount, \$55.2 million are state operating loss carryforwards and \$184.0 million are federal operating loss carryforwards. The federal carryforward periods are as follows: \$142.0 million do not expire and \$41.9 million expire between 2032 and 2037. The state net operating losses will expire between 2027 and 2041, with some amounts having indefinite carryover. The Company also has federal and state R&D credit carryovers of \$2.6 million and \$1.3 million, which will expire between 2032 and 2042.

The Company is subject to federal income taxes in the United States as well as various state and local jurisdictions. The Company has reviewed its tax positions and concluded that no liability for uncertain tax positions is required as of December 31, 2022. The Company will classify any future interest and penalties as a component of income tax expense if incurred.

The Company does not expect the amount of uncertain tax positions to change significantly in the next 12 months. The Company's major taxing jurisdictions are in the United States, at both the federal and state levels. The number of years open for examination varies depending on the tax jurisdiction but are generally from three to five years.

8. LEASES, COMMITMENTS, AND CONTINGENCIES

Litigation and Claims

In the fourth quarter of 2022, the Company reached a settlement with one of its technology vendors regarding alleged intellectual property infringement. As a result of the settlement, the Company received \$0.75 million in the fourth quarter of 2022. See Note 14 for further information regarding this legal settlement.

The Company is not currently a party to any other material pending legal proceedings.

Sale-Leaseback of Headquarters and Laboratory Facilities

In September 2017, the Company consummated a sale-leaseback transaction with a third party for its corporate headquarters and laboratory facilities in Roseville, Minnesota, which encompasses approximately 44,000 square feet including office and lab space, the first pilot BioFactory production system, greenhouses, and outdoor research plots. The Company is deemed the owner for accounting purposes. The lease has a term of twenty years and includes four options to each extend the lease for five years subject to there being no default under the lease terms beyond any cure period and the Company occupying the property at the time of extension. In 2017, the Company received \$7.0 million in connection with the sale of the land and uncompleted facility.

The lease commenced in May 2018. Under the lease, the Company pays an annual base rent of eight percent of the total project cost with scheduled increases in rent of 7.5 percent on the sixth, eleventh, and sixteenth anniversaries of the start of the lease commencement as well as on the first day of each renewal term. Currently, the Company pays an annual base rent of \$1.4 million. The first increase will occur during 2023.

The Company is also responsible for all operating costs and expenses associated with the property. If the landlord decides to sell the property, the Company has a right of first refusal to purchase the property on the same terms offered to any third party.

Concurrent with entering the lease, Collectis guaranteed the lease agreement for the Company's headquarters. However, the Company previously agreed to indemnify Collectis for any obligations under this guaranty, effective upon Collectis' ownership falling to 50 percent or less of the Company's outstanding common stock. Accordingly, the Company's indemnification obligation was triggered in October 2022.

Prior to 2022, this lease was considered a failed sale leaseback based on the nature of the transactions and was reported as a financing-type lease.

As discussed in Note 1, Recently Issued Accounting Pronouncements, the Company adopted the New Lease Standard as of January 1, 2022, using the transition method which does not require revisions to comparative periods. The Company elected to implement the transition package of practical expedients permitted within the New Lease Standard, which among other things, allows it to carryforward the historical lease classification. In addition, the Company elected the hindsight practical expedient to determine the lease term for existing leases and it also made an accounting policy election to not record leases with an initial term of 12 months or less on its consolidated balance sheet.

The Company's adoption of the New Lease Standard required it to remove the previously reported amounts for land, buildings, and equipment associated with its headquarters and laboratory facilities lease as well as the associated liability. The Company assessed the elements of its lease agreement and upon adoption, recorded an operating lease associated with the sale leaseback of land underlying the headquarter facility, and a second operating lease associated with the building. The Company recorded operating lease assets and liabilities of \$14.1 million within its consolidated balance sheet as of January 1, 2022. The New Lease Standard had no impact on the Company's consolidated statements of operations or cash flows. The \$0.8 million cumulative effect of the adoption of the New Lease Standard was recorded to stockholders' equity.

The impact of adoption of the New Lease Standard on the Company's December 31, 2021, consolidated balance sheet was as follows:

	As Reported December 31, 2021	Adoption of Lease Standard	As Adjusted December 31, 2021
Assets			
Land, buildings, and equipment	\$ 21,731	\$ (16,543)	\$ 5,188
Operating lease right-of-use assets	—	14,090	14,090
	<u>\$ 21,731</u>	<u>\$ (2,453)</u>	<u>\$ 19,278</u>
Liabilities and stockholders' equity			
Current portion of financing lease obligations	\$ 370	\$ (4)	\$ 366
Other current liabilities	191	276	467
Financing lease obligations	17,506	(17,371)	135
Operating lease obligations	—	13,814	13,814
Accumulated deficit	(196,092)	832	(195,260)
	<u>\$ (178,025)</u>	<u>\$ (2,453)</u>	<u>\$ (180,478)</u>

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Sale-Leaseback of Equipment

The Company also has an equipment financing arrangement that is considered a financing-type lease which matures in 2023. The Company was required to deposit cash into a restricted account in an amount equal to the future rent payments required by the lease. As of December 31, 2022, restricted cash totaled \$0.1 million, and will be returned following the payoff of the lease obligations in 2023.

Recognition of Lease Liabilities

The Company records its operating lease liabilities at the present value of the future lease payments over the lease term. If the lease term includes options to extend or terminate the lease, those elements are included in the determination of lease term when it is reasonably certain that the option will be exercised. The rate used to determine the present value of future lease payments is the rate stated in the lease agreement, or if not stated, the Company's incremental borrowing rate is used, up to an effective rate that enables the lease liability to amortize to zero over the lease term. Rent expense for operating leases is recorded in SG&A expense in the consolidated statements of operations and in operating cash flows in the consolidated statements of cash flows. The Company also records operating lease ROU assets at an initial amount equal to the operating lease liability. Those ROU assets are amortized to lease expense within SG&A over the lease term using the effective interest method to ensure the ROU asset amortizes to zero concurrent with the associated liability, and the ROU asset amortization expense is also reported in operating cash flows in the consolidated statements of cash flows.

The Company records its financing lease liabilities at the present value of the future lease payments over the lease term. If the lease term includes options to extend or terminate the lease, those elements are included in the determination of lease term when it is reasonably certain that the option will be exercised. The rate used to determine the present value of future lease payments is the rate stated in the lease agreement, or if not stated, the Company's incremental borrowing rate is used, up to an effective rate that enables the lease liability to amortize to zero over the lease term. Expense associated with financing leases is recorded in interest, net in the consolidated statements of operations and in operating cash flows in the consolidated statements of cash flows.

The Company is obligated under a non-cancellable operating lease for office and laboratory space at its facility in Roseville, Minnesota. The lease has a remaining term of 15.3 years and has a ROU asset of \$13.6 million as of December 31, 2022.

The Roseville, Minnesota lease includes four options to each extend the lease for five years. These options to extend the lease are not recognized as part of the ROU assets and operating lease liabilities as it is not reasonably certain that the Company will exercise those options. The Company's agreement does not include options to terminate the lease.

Lease Expense

The components of lease expense were as follows:

In Thousands	Year Ended December 31,		
	2022	2021	2020
Finance lease costs	\$ 75	\$1,431	\$1,435
Operating lease costs	1,548	46	83
Variable lease costs	942	NA	NA
Total	<u>\$2,565</u>	<u>\$1,477</u>	<u>\$1,518</u>

NA- not applicable prior to the New Lease Standard

Operating lease cost for short-term leases was not material for the year ended December 31, 2022.

Other Lease Information

Other information related to leases was as follows:

In Thousands except for lease term and discount rate	Year Ended December 31, 2022	
	Operating	Financing
Cash paid for amounts included in the measurement of lease liabilities:		
Operating cash flows	\$ 276	\$ —
Financing cash flows	\$ —	\$ 376
Weighted average remaining lease term (years)	15.3	0.4
Weighted average discount rate	7.9%	8.1%

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As of December 31, 2022, future minimum payments under operating and finance leases were as follows:

<u>In Thousands</u>	<u>Operating Leases</u>	<u>Financing Leases</u>	<u>Total Leases</u>
2023	\$ 1,446	\$ 100	\$ 1,546
2024	1,480	—	1,480
2025	1,479	—	1,479
2026	1,479	—	1,479
2027	1,479	—	1,479
Thereafter	16,991	—	16,991
Total including interest	24,354	100	24,454
Less: imputed interest	(10,540)	(3)	(10,543)
Total	<u>\$ 13,814</u>	<u>\$ 97</u>	<u>\$ 13,911</u>

9. EMPLOYEE BENEFIT PLAN

The Company provides a 401(k) defined contribution plan for all regular full-time employees who have completed two months of service. The Company matches employee contributions up to certain amounts and those matching contributions vest immediately.

<u>In Thousands</u>	<u>Year Ended December 31,</u>		
	<u>2022</u>	<u>2021</u>	<u>2020</u>
Employee benefit plan expenses	<u>\$259</u>	<u>\$274</u>	<u>\$309</u>

10. SUPPLEMENTAL INFORMATION

Certain balance sheet amounts are as follows:

<u>In Thousands</u>	<u>As of December 31,</u>	
	<u>2022</u>	<u>2021</u>
Cash, cash equivalents, and restricted cash:		
Cash and cash equivalents	\$3,427	\$13,823
Restricted cash	99	499
Non-current restricted cash	—	99
Total	<u>\$3,526</u>	<u>\$14,421</u>

<u>In Thousands</u>	<u>As of December 31,</u>	
	<u>2022</u>	<u>2021</u>
Prepaid expenses and other current assets:		
Common warrants – financing costs	\$ 396	\$ —
Prepaid expenses and other current assets	210	859
Total	<u>\$ 606</u>	<u>\$ 859</u>

<u>In Thousands</u>	<u>As of December 31,</u>	
	<u>2022</u>	<u>2021</u>
Other current liabilities:		
Operating lease obligations – current	\$ 367	\$ —
Other current liabilities	112	191
Total	<u>\$ 479</u>	<u>\$ 191</u>

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<u>In Thousands</u>	<u>As of December 31,</u>	
	<u>2022</u>	<u>2021</u>
Land, buildings, and equipment:		
Land under capital lease	\$ —	\$ 5,690
Buildings	900	804
Buildings under capital lease	—	3,812
Leasehold improvements	364	215
Leasehold improvements under capital lease	—	10,023
Office furniture and equipment	7,803	5,409
Office furniture and equipment under capital lease	414	1,788
Computer equipment and software	912	831
Construction in progress	—	849
Vehicles	—	38
Total land, buildings, and equipment	<u>10,393</u>	<u>29,459</u>
Less accumulated depreciation and amortization	<u>(5,877)</u>	<u>(7,728)</u>
Total	<u>\$ 4,516</u>	<u>\$21,731</u>

Certain statements of operations amounts are as follows:

<u>In Thousands</u>	<u>Year Ended December 31,</u>		
	<u>2022</u>	<u>2021</u>	<u>2020</u>
Revenue:			
Soybean grain	\$—	\$25,930	\$12,976
Soybean meal	—	—	8,628
Soybean oil	—	—	2,220
Other	157	57	27
Total	<u>\$157</u>	<u>\$25,987</u>	<u>\$23,851</u>

<u>In Thousands</u>	<u>Year Ended December 31,</u>		
	<u>2022</u>	<u>2021</u>	<u>2020</u>
Stock-based compensation expense:			
Research and development	\$ 946	\$1,465	\$1,132
Selling, general, and administrative	3,052	625	3,839
Total	<u>\$3,998</u>	<u>\$2,090</u>	<u>\$4,971</u>

<u>In Thousands</u>	<u>Year Ended December 31,</u>		
	<u>2022</u>	<u>2021</u>	<u>2020</u>
Interest, net:			
Interest expense	\$(75)	\$(1,431)	\$(1,435)
Interest income	60	17	557
Common stock warrants – financing cost amortization	(72)	—	—
Total	<u>\$(87)</u>	<u>\$(1,414)</u>	<u>\$(878)</u>

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Supplemental statement of cash flows information is as follows:

In Thousands	Year Ended December 31,		
	2022	2021	2020
Interest paid	\$ 69	\$1,425	\$1,455

Non-cash transactions not reported in the consolidated statement of cash flows are as follows:

In Thousands	Year Ended December 31,		
	2022	2021	2020
Receivable from Jefferies for shares issued under ATM Facility	\$ (260)	\$260	\$—
Non-cash additions to land, buildings, and equipment	\$ (691)	\$691	\$—
Cumulative effect of adoption of lease accounting standard on stockholders' equity	\$ 832	\$—	\$—
Establishment of operating lease right-of-use assets and associated operating lease liabilities	\$14,090	\$—	\$—

11. SEGMENT INFORMATION

The Company operates in a single reportable segment, the development and commercialization of products derived from plant cells. The chief operating decision maker is the Company's Chief Executive Officer, who makes resource allocation decisions and assesses business performance based on financial information presented on a consolidated basis. There are no segment managers who are held accountable by the chief operating decision maker, or anyone else, for operations, operating results, and planning for levels or components below the consolidated unit level. Accordingly, the Company has determined that it operates in a single reportable segment, the development and commercialization of products derived from plant cells. The Company's current commercial focus is North America, and all revenue in 2022 was recognized in the United States.

12. LONG-TERM DEBT

The Company's long-term debt was comprised of a \$1.5 million promissory note pursuant to the PPP loan established by the Coronavirus Aid, Relief, and Economic Security Act (the CARES Act) implemented by the SBA. The Company received the funds under the PPP loan on April 19, 2020. Subject to certain conditions, the PPP loan and accrued interest were eligible to be forgiven in whole or in part by applying for forgiveness pursuant to the CARES Act and the Paycheck Protection Program. In order to be eligible for forgiveness, the proceeds of the PPP loan were required to be applied to certain eligible expenses, including payroll costs, interest on certain mortgage obligations, rent payments on certain leases, and certain qualified utility payments, with not more than 40 percent of the amount applied to non-payroll costs.

The Company applied the proceeds from the PPP loan toward qualifying expenses. On October 21, 2020, as modified December 29, 2020, the Company applied for forgiveness of the full principal amount and all accrued interest. On April 8, 2021, the Company was notified by the SBA that the full principal amount and all accrued interest of the PPP loan had been forgiven. Accordingly, the Company recognized a gain upon the extinguishment of the PPP loan for \$1.5 million during the second quarter of 2021.

13. RESTRUCTURING COSTS

On August 4, 2020, the Company approved a move to a streamlined go-to-market strategy for its soybean product line. The impact of the action included staffing adjustments related to soybean processing and product sales, as well as the gradual exit of all supply chain contractual commitments that were not associated with the soybean go-to-market strategy. In the fiscal year ended December 31, 2020, the Company recorded \$0.7 million of restructuring costs for severance and other related payments, and also recorded a \$0.9 million recapture benefit of non-cash stock compensation expense from the forfeiture or modification of unvested stock awards. The Company did not incur any other material costs from the disposal of any assets or contractual terminations in the years ended December 31, 2021, and 2020. As of December 31, 2020, all severance and transitional expenses were recorded, with \$0.4 million to be paid during 2021. As of December 31, 2021, all amounts related to the restructuring had been paid.

14. SUBSEQUENT EVENTS

Merger with Cibus Global LLC

On January 13, 2023, the Company and Cibus Global, LLC entered into a definitive merger agreement under which the Company and Cibus will merge in an all-stock transaction. As a part of the proposed merger, beginning at the earlier of March 15, 2023 and the date the Company's unrestricted cash balance first drops below \$1,500,000, the Company can request, and Cibus has agreed to provide, an unsecured, interest-free revolving line of credit of up to \$3,000,000 in cash, which amount may be increased to \$4,000,000 under certain conditions.

In connection with the Transactions (as defined in Note 14), beginning at the earlier of March 15, 2023 and the date Calyxt's unrestricted cash balance first drops below \$1,500,000, Calyxt can request, and Cibus has agreed to provide, an unsecured, interest-free revolving line of credit of up to \$3,000,000 in cash, which amount may be increased to \$4,000,000 if Cibus elects to extend the outside date (as defined in the Merger Agreement) to June 30, 2023 (the Interim Funding.) Funds can be drawn by Calyxt in \$500,000 increments and may only be used to fund operating expenses incurred in the ordinary course of business consistent with past practice and consistent with the negative covenants in the Merger Agreement. The full outstanding

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balance of the Interim Funding will be reduced to zero in connection with the closing of the Transactions, if consummated. The full outstanding balance of the Interim Funding will be forgiven by Cibus if the Merger Agreement is terminated for any reason other than certain under certain conditions, as detailed in the Merger Agreement. The Interim Funding is subject to acceleration in connection with certain bankruptcy events.

Modification of Stock Options

On March 1, 2023, the Company's Board of Directors approved the modification of the award terms of all outstanding stock options that have 90-day post-separation exercise periods from the current 90 days to five years from date of grant. These modifications may result in additional stock compensation expense that will be recognized immediately for vested awards or over the remaining service period for unvested awards as of that date.

Grant of Restricted Stock Units

On March 1, 2023, the Company's Board of Directors authorized the grant of an aggregate of 3,487,503 RSUs. These awards will vest upon completion of the Transactions, and accordingly, the expense associated with these awards will be recognized over the period from the date of grant to the estimated closing date of the Transactions.

Performance Stock Units

On March 1, 2023, the Company's Board of Directors determined the 2022 tranche of PSUs would vest at 100%.

Litigation and Claims

In the fourth quarter of 2022, the Company reached a settlement with one of its technology vendors regarding alleged intellectual property infringement. The Company received the final installment of \$0.75 million in the first quarter of 2023.

CALYXT, INC.
2017 OMNIBUS INCENTIVE PLAN
NOTICE OF RESTRICTED STOCK UNIT AWARD

###PARTICIPANT_NAME###

Subject to the terms and conditions set forth in this notice of grant (the “Notice”) and the Restricted Stock Agreement (the Notice and Restricted Stock Agreement constituting this “Award Agreement”), Calyxt, Inc., a Delaware corporation (the “Company”) has granted you an award of RSUs (the “Award”). The Award is granted under and is subject to the Calyxt, Inc. 2017 Omnibus Incentive Plan, as amended (the “Plan”). Unless otherwise defined in this Agreement, the terms used in this Agreement shall have the meanings defined in the Plan. The provisions of the Plan shall control in the event of a conflict among the provisions of the Plan, this Notice, the Award Agreement and any descriptive materials provided to you.

Date of Grant:	###GRANT_DATE###
Total Number of Units:	###TOTAL_AWARDS###
Vesting Commencement Date:	###GRANT_DATE###
First Vest Date:	###FIRST_VEST_DATE###
Vesting/Exercise Schedule:	Subject to Sections 2(n) and 19(g) of the Plan and Section 8 of the Award Agreement, so long as your Continuous Service Status does not terminate, the RSUs shall vest and be settled in accordance with the provisions of the Award Agreement.
Transferability:	You may not transfer this Award.

You are advised to consult with your own tax advisors in respect of any tax consequences arising in connection with this Award. In addition, your rights to any Shares underlying this Award will be earned only as you provide services to the Company over time, that the grant of this Award is not as consideration for services you rendered to the Company prior to the Date of Grant, and that nothing in this Notice or the attached documents confers upon you any right to continue your employment or consulting relationship with the Company for any period of time, nor does it interfere in any way with your right or the Company’s right to terminate that relationship at any time, for any reason, with or without cause. However, there is no guarantee that the Internal Revenue Service will agree with the valuation, and by signing below, you agree and acknowledge that the Company and the Administrator shall not be held liable for any applicable costs, taxes, or penalties associated with this Award if, in fact, the Internal Revenue Service were to determine that this Award constitutes deferred compensation under Section 409A of the Code.

Participant acknowledges and agrees that by clicking the “Accept Grant Online” button on the “Notice and Award Agreement”, it will act as the Participant’s electronic signature to this Agreement and will constitute Participant’s acceptance of and agreement with all of the terms and conditions of the Award, as set forth in the Notice, the Award Agreement, and the Plan.

THE COMPANY:

CALYXT, INC.

By:

Name:

Title:

2017 OMNIBUS INCENTIVE PLAN

RESTRICTED STOCK UNIT AGREEMENT

Participant acknowledges and agrees that by clicking the “Accept Grant Online” button on the “Notice and Award Agreement”, it will act as the Participant’s electronic signature to this Agreement and will constitute Participant’s acceptance of and agreement with all of the terms and conditions of the Award, as set forth in the Notice, the Award Agreement, and the Plan.

1. **Grant of RSU Award.** Calyxt, Inc., a Delaware corporation (the “Company”), hereby grants to ###PARTICIPANT_NAME### (“Participant”), the number of restricted stock units (“RSUs” or “Award”) set forth in the Notice of Restricted Stock Unit Award Grant (the “Notice”), subject to the terms, definitions and provisions of the Calyxt, Inc. 2017 Omnibus Incentive Plan, as amended (the “Plan”) adopted by the Company, which is incorporated in this agreement (this “Agreement”) by reference. Unless otherwise defined in this Agreement, the terms used in this Agreement shall have the meanings defined in the Plan.

2. **Issuance of RSUs.** Each RSU shall represent the right to receive one Share upon the vesting of such RSU, as determined in accordance with and subject to the terms of this Agreement and the Plan.

3. **Vesting of RSUs.** Provided that the Participant’s Continuous Service Status does not terminate, this Award shall vest as follows:

###VEST_SCHEDULE_TABLE###

(each date above, a “Vesting Date”), *provided* that in the event that a Triggering Event occurs during the vesting period, 100% of the total number of RSUs shall immediately vest.

In all cases, in no event will more than 100% of the RSUs vest.

4. **Tax Liability; Withholding Requirements; Compliance with Applicable Laws.** As a condition to the settlement of RSUs and as further set forth in Section 15 of the Plan, Participant agrees to make adequate provision for federal, state or other tax withholding obligations, if any, which arise upon the grant, vesting or disposition of shares of the RSUs, dividend distribution thereon, whether by withholding, direct payment to the Company, or otherwise. Regardless of any action the Company takes with respect to any or all income tax, social security, payroll tax, or other tax-related items related to Participant’s participation in the Plan and legally applicable to Participant (“Tax-Related Items”), Participant acknowledges that the ultimate liability for **all** Tax-Related Items is and remains Participant’s responsibility and may exceed the amount actually withheld. Participant further acknowledges that the Company (a) makes no representations or undertakings regarding the treatment of any Tax-Related Items in connection with any aspect of the Award, including, but not limited to, the grant, vesting, settlement of the Award, the issuance of Shares upon settlement of the Award and the subsequent sale of Shares acquired pursuant to such issuance and (b) does not commit to and is under no obligation to structure the terms of the grant or any aspect of the Award to reduce or eliminate Participant’s liability for Tax-Related Items or achieve any particular tax result.

In the event Participant fails to make adequate provision for applicable tax withholding obligations (or where the amount of money provided is insufficient to satisfy the applicable obligations), Participant authorizes the Company, in its discretion, to satisfy the obligations with regard to all Tax-Related Items by (i) withholding from Participant's wages or other cash compensation paid to Participant, (ii) withholding through a net settlement or sell-to-cover transaction with respect to the Participant's Shares or (iii) a combination of the foregoing. Notwithstanding anything in this Agreement to the contrary, the Company may, in its discretion, determine and notify the Participant that obligations with regard to all Tax-Related Items must be satisfied by withholding through a net settlement or sell-to-cover settlement on the Participant's behalf, to which the Participant hereby consents.

If Participant's obligation is satisfied through a sell-to-cover settlement as described in the foregoing paragraph, the Company, on the Participant's behalf, shall endeavor to sell only the number of Shares required to satisfy Participant's obligations for Tax-Related Items; however, Participant agrees that the Company may sell more Shares than necessary to cover the Tax-Related Item, and that in such event, the Company shall reimburse Participant for the excess amount withheld, in cash and without interest.

(c) The Company shall have no obligation to issue or deliver any Shares upon the vesting of the RSUs unless such issuance or delivery would comply with the Applicable Laws, including any applicable federal or state securities laws or any other law or regulation, with such compliance determined by the Company in consultation with its legal counsel. As a condition to the settlement of this Award, the Company may require Participant to make any representation and warranty to the Company as may be required by the Applicable Laws.

(d) Subject to compliance with Applicable Laws, this Award shall be deemed to be settled upon the satisfaction of any applicable withholding obligations.

5. **Terms and Conditions.** It is understood and agreed that the Award evidenced hereby is subject to the following terms and conditions:

(a) **Voting Rights.** The Participant shall have no voting rights or any other rights as a shareholder of the Company with respect to the RSUs unless and until the Participant becomes the record owner of the Shares underlying such RSUs.

(b) **Dividends.** If a dividend is paid on Shares during the period commencing on the Grant Date and ending on the date on which the Shares underlying the RSUs are distributed to the Participant pursuant to Section 3, the Participant shall be eligible to receive an amount equal to the dividend that the Participant would have received had the Shares underlying the RSUs been distributed to the Participant as of the time at which such dividend is paid; *provided, however*, that no such amount shall be payable with respect to any RSUs that are forfeited. Such amount shall be paid to the Participant on the date on which the Shares underlying the RSUs are distributed to the Participant in the same form (cash, Shares or other property) in which such dividend is paid to holders of Shares generally. Any Shares that the Participant is eligible to receive pursuant to this Section 4(b) are referred to herein as "**Dividend Shares.**"

(c) **Distribution on Vesting.** Subject to the provisions of this Agreement, upon the vesting of any of the RSUs, the Company shall deliver to the Participant, as soon as reasonably practicable after the applicable Vesting Date (or the Termination Date (as defined below), as applicable), one Share for each such RSU and the number of Dividend Shares (as determined in accordance with Section 5(b)); *provided* that such delivery of Shares shall be made no later than March 15 of the calendar year immediately following the year in which the applicable Vesting Date (or the Termination Date, as applicable) occurs. Upon such delivery, such Shares (including Dividend Shares) shall be fully assignable, alienable, saleable and transferrable by the Participant; *provided* that any such assignment, alienation, sale, transfer or other alienation with respect to such Shares shall be in accordance with applicable securities laws and any applicable Company policy.

6. **No Right to Continued Service.** The grant of an Award shall not be construed as conferring upon the Participant any right to continue his or her employment or consulting relationship with the Company for any period of time, nor does it interfere in any way with the Participant's right or the Company's right to terminate that relationship at any time, for any reason, with or without cause.

7. **No Right to Future Awards.** Any Award granted under the Plan shall be a one-time Award that does not constitute a promise of future grants. The Company, in its sole discretion, maintains the right to make available future grants under the Plan.

8. **Termination of Relationship.** Following the date of termination of Participant's Continuous Service Status for any reason, including the Participant's death or Disability (the "**Termination Date**"), other than a termination for Cause, Participant may continue to hold the vested portion of the Award, only as set forth in the Notice and this Section 8. The unvested portion of the Award on the Termination Date shall be forfeited on such date. Notwithstanding the foregoing, any Award granted to an individual who is nominated to become a Director and is not an Employee or Consultant or a director of a Parent at the time of grant shall be forfeited in its entirety if such individual does not commence providing services to the Company within 12 months after the date of grant of such Award.

9. **Non-Transferability of RSUs.** This Award may not be transferred in any manner otherwise than by will or by the laws of descent or distribution. The terms of this Award shall be binding upon the executors, administrators, heirs, successors and assigns of Participant.

10. **Not Salary, Pensionable Earnings or Base Pay.** The Participant acknowledges that the Award shall not be included in or deemed to be a part of (a) salary, normal salary or other ordinary compensation, (b) any definition of pensionable or other earnings (however defined) for the purpose of calculating any benefits payable to or on behalf of the Participant under any pension, retirement, termination or dismissal indemnity, severance benefit, retirement indemnity or other benefit arrangement of the Company or any Subsidiary or (c) any calculation of base pay or regular pay for any purpose.

11. **Forfeiture Upon Breach of Certain Other Agreements.** The Participant's breach of any non-competition, non-solicitation, confidentiality, non-disparagement, assignment of inventions or other intellectual property agreement that the Participant may be a party to with the Company or any Affiliate, in addition to whatever other equitable relief or monetary damages that the Company or any Affiliate may be entitled to, shall result in automatic rescission, forfeiture, cancellation or return of any Shares (whether or not vested) held by the Participant.

12. **Recoupment/Clawback.** This Award may be subject to recoupment or “clawback” as may be required by Applicable Laws or by any applicable Company policy or arrangement, as it may be established or amended from time to time.

13. **Effect of Agreement.** Participant acknowledges receipt of a copy of the Plan and represents that he or she is familiar with the terms and provisions thereof (and has had an opportunity to consult counsel regarding the Award terms), and hereby accepts this Award and agrees to be bound by its contractual terms as set forth herein and in the Plan. Participant hereby agrees to accept as binding, conclusive and final all decisions and interpretations of the Plan Administrator regarding any questions relating to this Award. In the event of a conflict between the terms and provisions of the Plan and the terms and provisions of the Notice and this Agreement, the Plan terms and provisions shall prevail.

14. **Miscellaneous.**

(a) **Governing Law; Waiver of Jury Trial** This Agreement and all acts and transactions pursuant hereto and the rights and obligations of the parties hereto shall be governed, construed and interpreted in accordance with the laws of the State of Delaware, without giving effect to principles of conflicts of law. BY RECEIPT OF THIS AWARD, THE PARTICIPANT WAIVES ANY RIGHT THAT THE PARTICIPANT MAY HAVE TO TRIAL BY JURY IN RESPECT OF ANY LITIGATION BASED ON, ARISING OUT OF, UNDER OR IN CONNECTION WITH THIS AGREEMENT OR THE PLAN.

(b) **Participant Undertaking; Acceptance.** The Participant agrees to take whatever additional action and execute whatever additional documents the Company may deem necessary or advisable to carry out or give effect to any of the obligations or restrictions imposed on either the Participant or the Award pursuant to this Agreement. The Participant acknowledges receipt of a copy of the Plan and this Agreement and understands that material definitions and provisions concerning the Award and the Participant’s rights and obligations with respect thereto are set forth in the Plan. The Participant has read carefully, and understands, the provisions of this Agreement and the Plan.

(c) **Dispute Resolution.** Any dispute or claim arising out of, under or in connection with the Plan or any Award Agreement shall be submitted to arbitration in Delaware and shall be conducted in accordance with the rules of, but not necessarily under the auspices of, the American Arbitration Association rules in force when the notice of arbitration is submitted. The arbitration shall be conducted before an arbitration tribunal, one selected by the Company, one selected by the Participant, and the third selected by the first two. The Participant and the Company agree that such arbitration will be confidential and no details, descriptions, settlements or other facts concerning such arbitration shall be disclosed or released to any third party without the specific written consent of the other party, unless required by law or court order or in connection with enforcement of any decision in such arbitration. Any damages awarded in such arbitration shall be limited to the contract measure of damages, and shall not include punitive damages.

(d) **Entire Agreement; Enforcement of Rights.** This Agreement, together with the Notice to which this Agreement is attached and the Plan, sets forth the entire agreement and understanding of the parties relating to the subject matter herein and

therein and merges and supersedes all prior and contemporaneous discussions, arrangements, agreements and understandings, both oral and written, whether in term sheets, presentations or otherwise, between the parties with respect to the subject matter hereof.

(e) **Amendment; Waiver.** Except as contemplated under the Plan, no modification of or amendment to this Agreement that has a material adverse effect on the Participant, nor any waiver of any rights under this Agreement, shall be effective unless in writing signed by the parties to this Agreement; *provided* that the Company may amend or modify this Agreement without the Participant's consent in accordance with the provisions of the Plan or as otherwise set forth in this Agreement. The failure by either party to enforce any rights under this Agreement shall not be construed as a waiver of any rights of such party; *provided* that no waiver of any breach or condition of this Agreement shall be deemed to be a waiver of any other or subsequent breach or condition, whether of like or different nature. Any amendment or modification of or to any provision of this Agreement, or any waiver of any provision of this Agreement, shall be effective only in the specific instance and for the specific purpose for which made or given.

(f) **Severability.** If one or more provisions of this Agreement are held to be unenforceable under Applicable Laws, the parties agree to renegotiate such provision in good faith. In the event that the parties cannot reach a mutually agreeable and enforceable replacement for such provision, then (i) such provision shall be excluded from this Agreement and a substantially similar provision shall be inserted that as closely as possible reflects the intent of the parties shall be substituted in place of such unenforceable provision, (ii) the balance of this Agreement shall be interpreted as if such provision were so excluded and (iii) the balance of this Agreement shall be enforceable in accordance with its terms.

(g) **Notices.** Any notice required or permitted by this Agreement shall be in writing and shall be deemed sufficient when delivered personally or sent by telegram or fax or forty-eight (48) hours after being deposited in the U.S. mail, as certified or registered mail, with postage prepaid, and addressed to the party to be notified at such party's address as set forth below or as subsequently modified by written notice:

If to the Company:

Calyxt, Inc.
2800 Mount Ridge Road
Roseville, MN 55113
Attention: General Counsel

If to the Participant:

At the Participant's most recent address in the Company's records.

(h) **Counterparts.** This Agreement may be executed in two or more counterparts, each of which shall be deemed an original and all of which together shall constitute one instrument.

(i) **Successors and Assigns; No Third-Party Beneficiaries.** The rights and benefits of this Agreement shall inure to the benefit of, and be enforceable by the Company's successors and assigns. The rights and obligations of Participant under this Agreement may not be assigned without the prior written consent of the Company. Nothing in this Agreement, express or implied, is intended to confer on any Person other than the

Company and the Participant, and their respective heirs, successors, legal representatives and permitted assigns, any rights, remedies, obligations or liabilities under or by reason of this Agreement.

15. **Data Privacy Notice and Consent.** By participating in the Plan, the Participant consents to the holding and processing of personal information provided by the Participant to the Company or any subsidiary, trustee or third-party service provider, for all purposes relating to the operation of the Plan. These include, but are not limited to:

- (a) administering and maintaining Participant records;
- (b) providing information to the Company, Subsidiaries, trustees of any employee benefit trust, registrars, brokers or third-party administrators of the Plan;
- (c) providing information to future purchasers or merger partners of the Company or any subsidiary, or the business in which the Participant works; and
- (d) transferring information about the Participant to any country or territory that may not provide the same protection for the information as the Participant's home country.

* * * * *

IN WITNESS WHEREOF, the Company has executed this Agreement effective as of the Date of Grant set forth in the accompanying Notice.

THE COMPANY:

CALYXT, INC.

By:

Name:

Title:

I, [], spouse of ###PARTICIPANT_NAME###, have read and hereby approve the foregoing terms set forth in this Agreement. In consideration of the Company's granting my spouse the right to receive Shares as set forth in this Agreement, I hereby agree to be irrevocably bound by this Agreement and further agree that any community property or other such interest shall hereby be similarly bound by this Agreement. I hereby appoint my spouse as my attorney-in-fact with respect to any amendment or exercise of any rights under this Agreement.

Spouse of ###PARTICIPANT_NAME###

(if applicable)

Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in the following Registration Statements:

- (1) Registration Statement (Form S-8 No. 333-257972) pertaining to the Calyxt, Inc. 2017 Omnibus Incentive Plan and 2021 Employee Inducement Incentive Plan;
- (2) Registration Statement (Form S-3 No. 333-267499) of Calyxt, Inc.;
- (3) Registration Statement (Form S-3 No. 333-266302) of Calyxt, Inc.;
- (4) Registration Statement (Form S-8 No. 333-231336) pertaining to the Calyxt, Inc. 2017 Omnibus Incentive Plan of Calyxt, Inc.; and
- (5) Registration Statement (Form S-8 No. 333-219382) pertaining to the Calyxt, Inc. 2017 Omnibus Incentive Plan and the Calyxt, Inc. Equity Incentive Plan of Calyxt, Inc.

of our report dated March 2, 2023, with respect to the consolidated financial statements of Calyxt, Inc. included in this Annual Report (Form 10-K) for the year ended December 31, 2022.

/s/ Ernst & Young LLP

Minneapolis, Minnesota

March 2, 2023

CERTIFICATION PURSUANT TO RULES 13a-14(a) AND 15d-14(a) UNDER THE SECURITIES EXCHANGE ACT, AS AMENDED

I, Michael A. Carr, certify that:

1. I have reviewed this Annual Report on Form 10-K of Calyxt, Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: March 2, 2023

/s/ Michael A. Carr

Michael A. Carr
President and Chief Executive Officer

CERTIFICATION PURSUANT TO RULES 13a-14(a) AND 15d-14(a) UNDER THE SECURITIES EXCHANGE ACT, AS AMENDED

I, William F. Koschak, certify that:

1. I have reviewed this Annual Report on Form 10-K of Calyxt, Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: March 2, 2023

/s/ William F. Koschak

William F. Koschak
Chief Financial Officer

CERTIFICATION PURSUANT TO 18 U.S.C. SECTION 1350, AS ADOPTED PURSUANT TO SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Annual Report of Calyxt, Inc. (the “Company”) on Form 10-K for the period ended December 31, 2021, as filed with the Securities and Exchange Commission on the date hereof (the “Report”), each of the undersigned hereby certifies, pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002, that, to his knowledge:

- (1) The Report fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934; and
- (2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: March 2, 2023

/s/ Michael A. Carr

Michael A. Carr
President and Chief Executive Officer

/s/ William F. Koschak

William F. Koschak
Chief Financial Officer