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, 2020;

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	27-1967997
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)
2800 Mount Ridge Road Roseville, MN	55113-1127
(Address of principal executive offices)	(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 Global Market

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	☐	Accelerated Filer	☐	Non-accelerated Filer	☑	Smaller Reporting Company	☐

Emerging Growth Company ☑

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.

☐

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, 2020, 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 $49,811,803 based upon the closing sale price of the registrant's common stock of $4.93 on such date.

The number of outstanding shares of the registrant's common stock on March 4, 2021 was 37,155,887 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 2021, 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.

Table of Contents

Terms

When we use the terms "we," "us," the "Company," or "our" in this report, unless the context otherwise requires, we are referring to Calyxt, Inc. When we use the term "Cellectis," we are referring to Cellectis S.A., our majority stockholder. Cellectis is a clinical-stage biotechnology company employing its core proprietary technologies to develop best-in-class products in the field of immuno-oncology.

We own the names and trademarks Calyxt® and Calyno®; we also own or license other trademarks, trade names and service marks of Calyxt appearing in this Annual Report on Form 10-K. The names and trademarks "Cellectis®" and "TALEN®", and other trademarks, trade names and service marks of Cellectis appearing in this Annual Report on Form 10-K are the property of Cellectis. This Annual Report on Form 10-K also contains additional trade names, trademarks and service marks belonging to other companies. We do not intend our 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 us by, 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). We may also make forward-looking statements in other reports filed with the Securities and Exchange Commission, in materials delivered to stockholders and in press releases. In addition, our representatives may from time to time make oral forward-looking statements.

We have made these forward-looking statements in reliance on the safe harbor provisions of the 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," "targets," "intends," "may," "might," "plans," "potential," "predicts," "projects," "should," "will," or the negative of these terms and other similar terminology. Forward-looking statements in this report include statements about the potential impact of the COVID-19 pandemic on our business and operating results; our future financial performance; product pipeline and development; our business model and strategies for commercialization and sales of commercial products; regulatory progression; potential collaborations, partnerships and licensing arrangements and their contribution to our financial results, cash usage, and growth strategies; and anticipated trends in our business. These and other forward-looking statements are predictions and projections about future events and trends based on our current expectations, objectives and intentions and premised on current assumptions. Our 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: the severity and duration of the evolving COVID-19 pandemic and the resulting impact on macro-economic conditions; the impact of increased competition; disruptions at our key facilities; changes in customer preferences and market acceptance of our products; competition for collaboration partners and licensees and the successful execution of collaborations and licensing agreements; the impact of adverse events during development, including unsuccessful field trials or developments trials or disruptions in seed production; the impact of improper handling of our product candidates by unaffiliated third parties during development, such as the improper aerial spraying of our high fiber wheat product candidate; failures by third-party contractors; inaccurate demand forecasting; the effectiveness of commercialization efforts by commercial partners or licensees; our ability to make grain sales on terms acceptable to us; the timing of our grain sales; our ability to collect accounts receivable; disruptions to supply chains, including transportation and storage functions; commodity price conditions; 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; dislocations in the capital markets; 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 statement made by us in this Annual Report on Form 10-K is based only on information currently available to us and speaks only as of the date of this report. We do not assume any obligation to publicly provide revisions or updates to any forward-looking statements after the date of this Annual Report on Form 10-K, whether as a result of new information, future developments or otherwise, should circumstances change, except as otherwise required by law.

Market Data

Unless otherwise indicated, information contained in this Annual Report on Form 10-K concerning our industry and the markets in which we operate is based on information from various sources, including independent industry publications. In presenting this

information, we have also made assumptions based on such data and other similar sources, and on our knowledge of, and our experience to date in, the potential markets for our product. The industry in which we operate is subject to a high degree of uncertainty and risk due to a variety of factors, including those described in Part I, Item 1A, "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 us.

Website Disclosure

We use our website (www.calyxt.com), our corporate Twitter account (@Calyxt_Inc) and our 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 our disclosure obligations under Regulation FD. Accordingly, investors should monitor our website and our corporate Twitter and LinkedIn accounts in addition to following press releases, filings with the SEC and public conference calls and webcasts.

Additionally, we provide notifications of announcements as part of our website. Investors and others can receive notifications of new press releases posted on our website by signing up for email alerts.

None of the information provided on our website, in our 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 we file with the SEC, and any references to our website or our corporate Twitter and LinkedIn accounts are intended to be inactive textual references only.

JOBS Act

We qualify as an "emerging growth company" as defined in the Jumpstart Our Business Startups (JOBS) Act of 2012 (the JOBS Act). As an emerging growth company, we may take advantage of certain reduced disclosure and other requirements that are otherwise applicable generally to public companies. Pursuant to these provisions:

- we are not required to comply with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act of 2002 (the Sarbanes-Oxley Act); and
- we have (i) reduced disclosure obligations regarding executive compensation in our periodic reports and proxy statements and (ii) exemptions from the requirements of holding a non-binding advisory vote on executive compensation, including golden parachute compensation.

We may take advantage of these provisions until such earlier time that we are no longer an emerging growth company.

We would cease to be an emerging growth company upon the earliest to occur of (1) the last day of the fiscal year in which we have more than $1.07 billion in annual revenue; (2) the date we qualify as a "large accelerated filer," with at least $700 million of public float (3) the issuance, in any three-year period, by us of more than $1.0 billion in non-convertible debt securities held by non-affiliates; and (4) the last day of the fiscal year ending after the fifth anniversary of our initial public offering, or December 31, 2022.

In addition, Section 107 of the JOBS Act also provides that an emerging growth company can use the extended transition period provided in Section 7(a)(2)(B) of the Securities Act for complying with new or revised accounting standards. This permits an emerging growth company to delay the adoption of certain accounting standards until those standards would otherwise apply to private companies. We intend to take advantage of the exemptions discussed above. Accordingly, the information contained herein may be different than the information you receive from other public companies.

PART I

Item 1. Business.

Company Overview

We were incorporated in the State of Delaware in 2010 and are a majority-owned subsidiary of Cellectis. We are a technology company focused on delivering plant-based innovations and solutions with substantial disruption potential across multiple industries. We are a leader in gene editing with exclusive access to proprietary TALEN® and other technologies for use in plants, which we used to successfully commercialize the first gene edited food product in the United States. We have a robust development pipeline that spans multiple crops and that is focused on several important trends including consumer health and sustainability.

We are pursuing projects in large addressable markets including oats, hemp, and soybeans. We expect to commence additional projects in our areas of focus based on additional technological advancements we make, and researched ideas generated by our newly formed Scientific Advisory Board. We expect to use a variety of technologies to develop these product candidates.

Using our proprietary technologies and expertise, including TALEN gene editing technology exclusively licensed to us in the field of agriculture, we develop crops with targeted traits quickly and more cost effectively than through traditional methods. Our technologies enable precise cuts to DNA in a single plant cell, and then the plant's natural repair mechanism occurs resulting in the edited plant. We then regenerate the edited single cell into a full plant. We believe that we can assess the viability of a trait in less than two years by utilizing these proprietary technologies.

Our capital-efficient business model comprises three differentiated go-to-market strategies. Specific deal structure and the amount and timing of cash flows and revenues will vary depending upon several factors, including cost to develop, size of the opportunity, and the stage at which a partner or licensee enters the development process. Summaries of potential revenues and cash flows of our go-to-market strategies are as follows:

- **Trait Development and Licensing Arrangements**: Through development and licensing agreements with downstream partners with respect to traits we develop in exchange for negotiated upfront, milestone or annual payments and potential royalties upon the licensees' commercial sale of products.

- **Seed Sale Arrangements**: Through purchase agreements for traited seed we have produced.

- **Technology Licensing Arrangements**: Through technology licensing agreements with third parties in exchange for negotiated upfront and annual payments, and potential royalties upon the licensees' commercial sale of products.

For technology licensing and trait and product development and licensing arrangements, we expect that our customers will primarily be seed companies, biotechnology companies, germplasm providers, large agricultural processors, others in the relevant crop's supply chain, and growers, who would, in each case, utilize our technology for their own trait development in specified crops. For seed sale arrangements, we expect that our customers will be seed retailers and large agribusiness companies, including millers and crushers, or others in the relevant crop's supply chain, with developed agronomy infrastructure and commercialization expertise. Across each of these go-to-market strategies, we will seek to develop relationships with strategic customers where our product candidates are most likely to benefit from the counterparty's deep agronomy, product management, and commercialization expertise. Placing our products and traits with such strategic customers will reduce our expenses and downstream risk exposure, while allowing us to pursue diversified growth across multiple revenue streams.

We believe that our streamlined business model with differentiated go-to-market strategies provides a capital-efficient, lower-cost, and highly scalable approach. Our strategy is based on focusing on our core strengths in research and development, including gene editing, plant breeding, and trait development. We will continue to focus on advancing our technologies toward developing high value innovations and plant-based solutions with substantial disruption potential, while leveraging our partners and licensees to manage commercialization and the associated costs and risks. We believe that focusing our efforts on our technology and trait development expertise, while contracting with commercialization partners or licensees for downstream execution strikes a balance where we are best positioned for cost-efficient paths to market.

In late February 2019, we commercialized our high oleic soybean oil and meal products and began generating revenue from their sale. In August 2020, as part of the broader transition of our business model, we announced a change in the go-to-market strategy for these products and as a result are no longer marketing high oleic soybean oil or meal and instead will sell the underlying grain throughout 2021. We restructured our personnel to support the execution of our streamlined business model, including staffing adjustments related

to soybean processing and product sales. We have contracted to sell all of the grain from the 2020 crop at prices to be determined on the basis of agricultural commodity market prices in effect at the time our planned deliveries of grain are agreed upon, with the purchaser responsible for crushing the grain and marketing and selling the resulting oil and meal. In 2021 we expect to move this product to the seed sales go-to-market strategy, where we will sell seed outright to processors who will contract acres with growers and purchase the resulting grain produced. We will recognize revenue on the sale of seed.

We are currently exploring product and partnership opportunities in various crops for potential applications across a range of industries, including food, nutraceutical, energy, and agriculture. Applying our streamlined business model with differentiated go-to-market strategies, we are well positioned to nimbly develop plant-based input solutions for specific downstream issues, including consumer preferences, sustainability, cost, quality, and regulatory compliance. As of the date of this report, we have nine projects at Phase 1 or later in our development process across alfalfa, hemp, oats, soybeans, and wheat.

Our current seed product line is focused on the United States. This may expand over time to other geographies, as we opportunistically pursue business arrangements that bring seed innovations developed for the United States to new territories. We will also pursue trait development and licensing as well as technology licensing opportunities globally. Any such potential geographic expansion will be subject to customer demand and regulatory requirements, among other factors.

Market and Industry Overview

Our focus on output trait development activity strategically positions us to take advantage of market trends toward healthy and sustainable innovation that we expect to drive demand for our development expertise.

Our near-term focus is on products in these areas:

- functional nutrition, which is in high demand as consumers look for healthier ingredients in their food;
- regenerative agricultural practices, which are being utilized to benefit soil health and the environment;
- sustainability, which has gained momentum as stakeholders increasingly pursue practices that can contribute to combatting climate change, including by focusing on soil health, water management, and fertilizer usage;
- plant-based protein, which is increasingly becoming a staple on menus and commanding premium shelf space in supermarkets, with consumer demand for the health and sustainability benefits of non-animal sourced proteins expected to continue to grow; and
- animal nutrition, which is important across agriculture given the impact it has on the environment, as well as from a consumer perspective, for pet food that delivers nutritional benefits with better and higher performing ingredients.

We anticipate our technology licensing activities to span a broad range of potential crop development markets.

Our Technology

Our proprietary technologies and intellectual property portfolio are focused on TALEN, CRISPR, and other adjacent technologies, data analytics, plant breeding, systems, and work processes. Our suite of technologies enable us to edit the plant genome by knocking out genes or making precise gene edits. We take advantage of our knowledge about plant gene function to identify and select beneficial genetic variation that results in traits of value. A key difference between our current gene edited trait product portfolio and transgenic organisms is that a transgenic product contains foreign DNA whereas our products contain no foreign DNA.

Our gene editing platform relies on our capacity to custom design DNA-sequence specific cutting enzymes (nucleases) for a chosen gene and our capability to enable such custom-made nucleases to make a desired edit into the living plant cells we want to edit. Our platform also relies on precisely chosen binding elements that can specifically recognize unique DNA sequences and can be tailored to target such sequences in a chosen gene or genetic region.

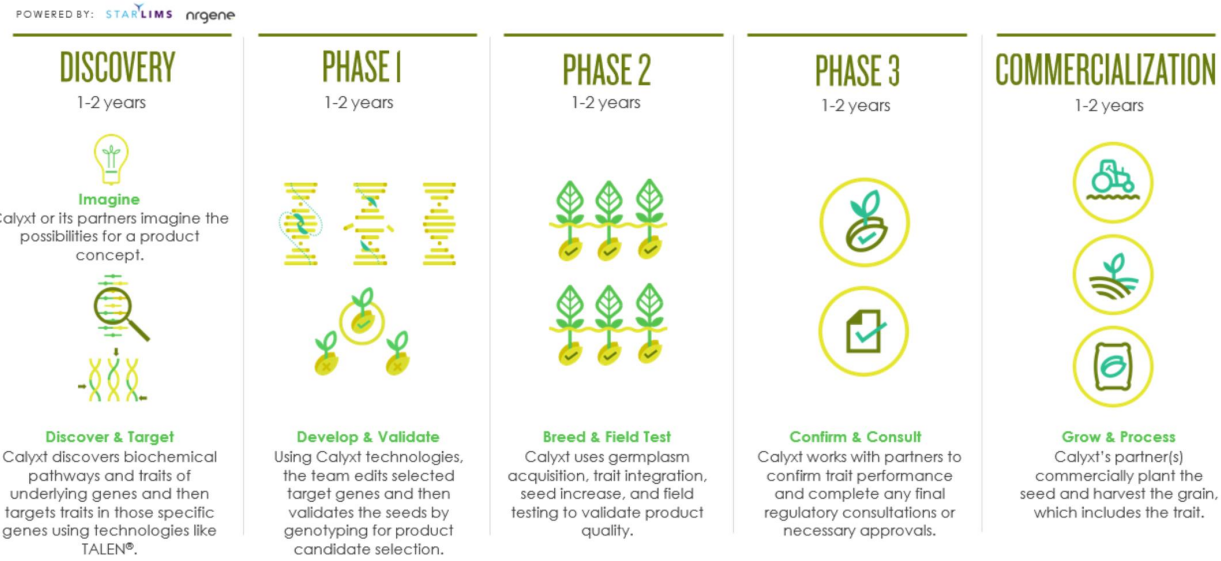
We use transcription activator-like effector nucleases, or TALEN, as the foundation of our gene editing platform. TALEN first recognizes a specific DNA sequence and then precisely induces a controlled DNA double-strand break. A DNA double-strand break is the key to unlocking gene editing. The removal of nucleotides (through non-homologous end-joining) can result in gene inactivation or a gene knock-out. If a DNA fragment from a different region of the genome with a similar sequence to the TALEN binding site is provided at the time of the DNA break, then the DNA fragment can be moved or copied into the targeted region of the plant genome to repair a broken gene (through homologous recombination). We are currently focused on using gene knockouts and gene repair to develop new traits, which result in products containing no foreign DNA.

Key Advantages of Calyxt's Technology Platform

- Precision—We are able to design single or multiple TALEN to edit at any selected gene or set of genes within the plant's genome.
- Efficiency—A large percentage of cells treated by TALEN bear the desired gene edit. Because of this efficiency, only a handful of plants must be regenerated to recover those with edits in the target gene. This efficiency drives down development cost. Recently published research from the University of Illinois[1] demonstrates TALEN gene editing is more efficient than CRISPR-Cas9 in compact DNA.
- Cost—We have successfully edited genes in several plant species and can generate thousands of TALEN per week. When combined with the efficiency benefits of TALEN and streamlined regulatory requirements, we believe our platform is very cost effective compared to others.
- Speed-to-Market—We have a strong intellectual property position with respect to TALEN technology, its use to develop product candidates, and proven regulatory expertise in bringing these products to market, which enables our development cycle to commercial planting availability to be as fast as five to six years, including assessing the viability of a trait in as little as two years.

[1] "TALEN outperforms Cas9 in editing heterochromatin target sites", published: January 27, 2021, Jain, S., Shukla, S., Yang, C. *et al*. TALEM outperforms Cas9 in editing heterochromatin target sites. *Nat Commun* 12, 606 (2021).

The following chart depicts our development process:



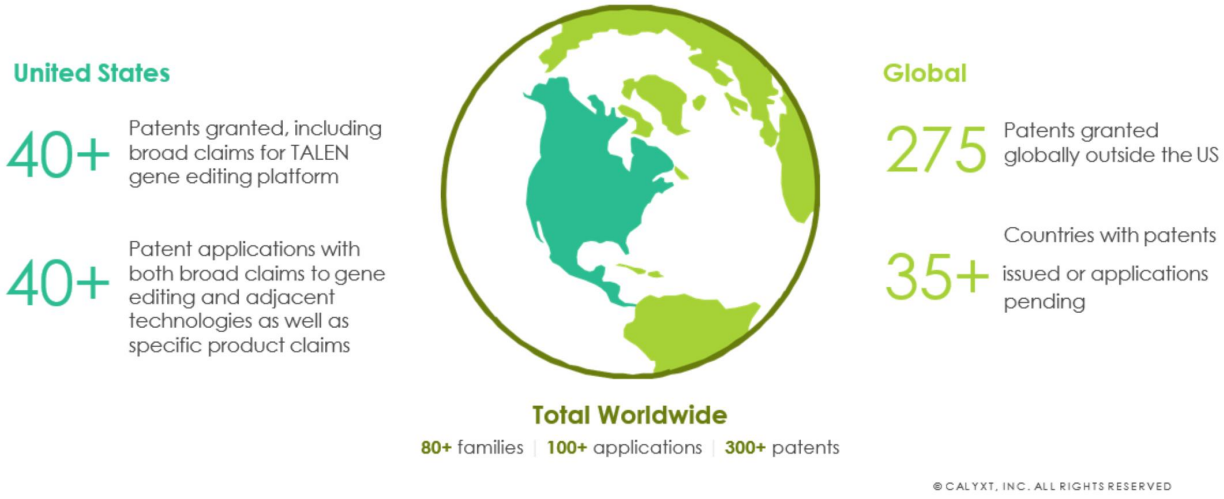
Intellectual Property

Intellectual property protection is key to our business. As of December 31, 2020, our patent estate is composed of patents and patent applications owned by us and in-licensed from other parties. Most of the in-licensed patents and patent applications are licensed from Cellectis or the University of Minnesota. The license from Cellectis includes technologies invented at Cellectis, technologies invented at Calyxt when we were a wholly owned subsidiary of Cellectis, and technologies licensed to Cellectis from third parties. We also have access to additional patents and patent applications through in-licensing agreements with other research institutions and universities.

Our patent portfolio is directed to: (1) gene editing tools, (2) enabling technologies, (3) product concepts, and (4) germplasm.

(1) Gene Editing Tools: Gene editing tools are the core of our portfolio with almost 300 patents and patent applications focused on plant gene editing technologies using meganuclease, TALEN, or CRISPR technologies as well as broad-spectrum technologies that can be used with multiple gene editing platforms. Most of our patent estate related to gene editing tools is licensed to us by Cellectis and the University of Minnesota, with the remainder either in-licensed from other research institutions or owned by us.

(2) Enabling Technologies: Enabling technologies are technologies used to develop products once the gene editing nuclease has been designed. The majority of our enabling technology patent estate was developed by us and either owned by us or licensed to us by Cellectis, with the remainder in-licensed from the University of Minnesota and other research institutions.
(3) Product Concepts: Product concepts include gene edited crops (e.g., TALEN edited high oleic soybean plants) and resulting food products (e.g., Calyxt's high oleic soybean oil). All of our patent estate covering product concepts was developed by us and are either owned by us or licensed to us by Cellectis.
(4) Germplasm are plant varieties developed by us as part of our plant breeding program. Our germplasm patents and patent applications cover germplasm we developed.



We are actively involved in the prosecution and protection of our key technology, which globally includes approximately 80 patent families comprised of approximately 300 patents and over 100 patent applications. Of those patents, approximately 40 have been issued in the United States, with the remaining issued in key geographies outside the U.S., primarily Europe, Japan, and China. This number also includes European patents validated in individual European countries. Of those patent applications, approximately 30 are pending in the United States, with the remaining pending as international applications or country-specific applications in key geographies outside the U.S.

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 we have in-licensed will expire on dates ranging from 2021 to 2037. If patents are issued on the pending patent applications owned by us or that we have in-licensed, the resulting patents are projected to expire on dates ranging from 2022 to 2040. For more information regarding the risks related to our intellectual property, please see "Risk Factors—Risks Related to Intellectual Property."

License Agreement with Cellectis

Through our license agreement with Cellectis, we have 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. We believe this umbrella intellectual property applies broadly across gene editing in plants and makes us a key player in the gene editing intellectual property space.

Under our license agreement with Cellectis, we have exclusive sublicense rights (subject to existing non-exclusive sublicenses to third parties) to intellectual property exclusively licensed to Cellectis 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.

We have also been granted a non-exclusive license to use the TALEN trademark in connection with our use of licensed products under the agreement. Any improvements we make to the in-licensed intellectual property are owned by us and licensed back to Cellectis on an exclusive basis for any use outside of our exclusive agricultural field of use. The exclusivity of our license agreement with Cellectis is subject to certain non-exclusive licenses Cellectis granted to third parties in the field of research.

In consideration for the license from Cellectis, we are required to pay to Cellectis, 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 Cellectis. In addition, we are required to pay Cellectis 30 percent of revenue we receive for sublicensing our rights under the agreement to third parties. Our payment obligations to Cellectis will expire upon the expiration of the last-to-expire valid claim of the patents licensed to us by Cellectis.

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

Our license agreement with Cellectis is perpetual. However, it 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 Cellectis and Regents of the University of Minnesota—TALEN

In January 2011, Cellectis 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, Cellectis 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, Cellectis is required to pay to the University of Minnesota a yearly fee, as well as a commercialization fee for every seed variety containing new traits developed using the licensed technology. Cellectis is also required to pay the University of Minnesota milestone payments based on the net sales of licensed products in the agricultural field. Cellectis must also pay the University of Minnesota certain patent-related expenses for prosecuting and maintaining the licensed patents; and under our license agreement with Cellectis, we are obligated to reimburse Cellectis 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 Cellectis, and immediately upon written notice if Cellectis challenges the validity or enforceability of any licensed patent in a court or other applicable authority. Cellectis 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.

License Agreement between Calyxt and Regents of the University of Minnesota—CRISPR

In December 2014, we entered into an exclusive license with the University of Minnesota, pursuant to which we were granted an exclusive, worldwide, sublicensable license under a specified patent application and any patents that issue therefrom owned by the University of Minnesota relating to the use of the CRISPR-Cas9 technology to make use, and commercialize products covered by the licensed patents in any field of use. Pursuant to the terms of the agreement, we must use commercially reasonable efforts to commercialize the licensed technology and to manufacture, offer to sell, and sell licensed products as soon as practicable and to maximize sales. We must also achieve certain sales- and patent-related milestones.

Per the terms of the agreement, we paid the University of Minnesota an upfront license fee. We are also required to pay an annual fee, patent-related expenses for prosecution and maintenance of the licensed patents, and a percentage of any revenues received by us under sublicenses. If we undergo a change of control and wish to assign all our rights and duties under the agreement, we must pay the University of Minnesota a specified transfer fee.

Unless earlier terminated under the terms of the agreement, the agreement will continue in effect until no licensed patent is active and until no licensed patent application is pending. The University of Minnesota may terminate the agreement for our uncured breach of the agreement upon 90 days' prior written notice, or 60 days' prior written notice if the breach relates to our payment obligations under the agreement. The University of Minnesota may also terminate the agreement, upon 10 days' prior written notice, if we file for bankruptcy or become insolvent. The University of Minnesota may also immediately terminate the agreement if we or our agents or representatives commences or maintains an action in any court or before any governmental agency asserting or alleging the invalidity or unenforceability of the licensed patent rights. We may terminate the agreement for The University of Minnesota's uncured breach of the agreement upon 90 days' prior written notice. We may also terminate the agreement at any time upon 60 days' prior written notice.

Trademarks

As of December 31, 2020, we have four issued trademarks in the United States.

High Oleic Soybean

We developed a soybean trait that produces oil with a fatty acid profile that contains 80 percent oleic acid, 20 percent less saturated fatty acids compared to commodity soybean oil and zero grams of trans fat per serving.

Prior to adopting our current go-to-market strategies, our high oleic soybean seed was sold either directly by us or through distributors to farmers, and we then purchased and processed the resulting grain and sold the resulting oil and meal products. In late February 2019, we commenced commercial sales and began generating revenue.

In August 2020, as part of the broader transition of our business model, we announced a change in the go-to-market strategy for these products and as a result are no longer marketing high oleic soybean oil or meal, and instead will sell the underlying grain throughout 2021. We are still obligated to purchase seed and grain pursuant to our 2020 grower contracts. We have contracted to sell all of the grain from the 2020 crop at prices to be determined on the basis of agricultural commodity market prices in effect at the time our planned deliveries of grain are agreed upon. During 2020, we also successfully exited most of the toll-based contracts associated with the operation of our identity-preserved supply chain.

With the adoption of our streamlined business model, in 2021, we expect to move this product to the seed sales go-to-market strategy, where we will sell seed outright to processors who will contract acres with growers and purchase the resulting grain produced. We will recognize revenue on the sale of seeds.

Our high oleic soybean seed sales are targeted directly to soybean processors, who will contract for acres directly with growers and will drive demand for the seed. In addition to its favorable fatty acid profile, oil produced from our high oleic soybean also has desirable characteristics that we believe will make our soybean seed attractive.

The high level of oleic acid in oil produced from our high oleic soybean enhances oxidative stability compared to other premium and commodity oils. This eliminates the need for partial hydrogenation, and thus little to no trans fats are produced during oil production. Furthermore, oil produced from our high oleic soybean offers up to a threefold increase in fry-life and reduced polymerization upon frying at high temperatures. The oil produced from our high oleic soybean is also neutral in flavor, odorless and colorless, which are desirable features in the food ingredient market as a result of the limited impact on the sensory characteristics of the final food product.

Oil produced from our high oleic soybean has also found applicability in markets outside of food, including the industrial lubricant market, where its characteristics enable it to act as an attractive alternative to other plant-based oils or fossil-fuel based lubricants.

For our high oleic soybean, we introduced a single variety in the northern United States in 2017, which was designed to grow well in parts of South Dakota and Minnesota and remained our only variety in the market during 2018 and 2019. We contracted more than 17,000 acres in 2018 and more than 36,000 acres in 2019.

For the 2020 planting season, we sought to increase acreage and diversify weather risk, and launched five new soybean seed varieties, which expanded our maturity groups and expanded our growing regions to include South Dakota, North Dakota, Minnesota, Iowa, and Nebraska—the states in which over 45 percent of the total United States soybean acres are grown. Because of weather and other factors, we planted approximately 72,000 acres in 2020, short of our initial goal of 100,000 acres contracted. We intend to support broader geographical coverage with the launch of new soybean varieties in 2021 and 2022.

Through our streamlined model, we expect to recognize revenue and see the benefits of positive gross margin when we sell seed, unlike under our legacy approach where those amounts were recorded as a reduction of the purchase price of purchased grain.

Our Product Pipeline

We identify product concepts from our own research and inbound interest from potential collaborators. We continue to refine our trait portfolio and seek to take advantage of the largest market opportunities. We categorize our stages of development, all of which are pre-commercial, as follows:

- Discovery, where we identify genes of interest or make initial development crosses between favorable breeding lines;
- Phase 1, where we conduct our gene editing and or produce our initial breeding stock with desired traits, produce the initial seed for testing, and voluntarily consult with applicable regulatory authorities;
- Phase 2, where we perform validation testing and currently voluntarily consult with applicable regulatory authorities; and
- Phase 3, where we or our collaborator develops the first commercial-scale pilot production and performs final testing prior to commercialization.

As of December 31, 2020, we had a total of nine product candidates in our development pipeline at Phase 1 or later, comprised of two product candidates in Phase 3, two product candidates in Phase 2, and five product candidates in Phase 1. Our target is for at least five product candidates to be available for commercial planting from now through 2024, including our improved digestibility alfalfa product in 2021, our high fiber wheat product candidate as early as 2023, and three additional product candidates thereafter.

Our December 31, 2020 pipeline gives effect to a prioritization process, which halted development on several legacy, pre-IPO project concepts that no longer aligned with our strategy.

A summary of our pipeline at December 31, 2020 is as follows:

CROP	DEVELOPMENT PHASE	TRAIT[1]	TARGET COMMERCIAL PLANTING YEAR	TARGET GO-TO-MARKET STRATEGY
Alfalfa	Phase 3	Improved Digestibility	2021	Trait
Wheat	Phase 3	High Fiber	2023	Trait
Soybean	Phase 2	High Oleic, Low Linolenic (HOLL)	2023	Seed
Hemp	Phase 1	Marketable Yield	2023	Seed or Trait
Hemp	Phase 1	Low THC for Food, Fiber, & Nutraceutical	2024	Seed or Trait
Oat	Phase 1	Winter (Cold Tolerant)	2026	Seed or Trait
Soybean	Phase 2	Improved HOLL	2026	Seed or Trait
Soybean	Phase 1	High Saturated Fat	2026	Seed or Trait
Soybean	Phase 1	Enhanced Protein Flavor	2027	Trait

[1] The agronomic and functional quality of our product candidates and the timing of development are subject to a variety of factors and risks, which are described in this annual report under the caption “Risk Factors.”.

We are also actively negotiating agreements with potential partners with respect to specific opportunities for which development activity would only commence upon reaching a commercial agreement. These projects are not included in the preceding table and would only be reported if we reach a development agreement with a partner.

Improved Digestibility Alfalfa

Alfalfa is a key feedstock in the production of milk from dairy cattle. The dairy industry is a significant producer of greenhouse gas and user of water. Dairy herds also produce substantial amounts of solid waste. Our alfalfa is designed to enable dairy producers to reduce their footprint in all three areas. We developed an alfalfa trait that has reduced lignin content in the stem of the plant, enabling it to be more digestible by livestock. Because the alfalfa is more digestible, fewer cows are needed to produce the same quantity of milk, potentially reducing the aggregate amount of water consumed and waste produced.

We developed our improved quality alfalfa in collaboration with S&W Seed Company (S&W) and have granted S&W an exclusive license for improved quality alfalfa seed in the United States and several geographies outside the United States excluding the European Union, United Kingdom, Ukraine, Russia, and India. The new alfalfa seed will be sold as part of the S&W seed portfolio and branded IQ™ Alfalfa (IQA). This marks our first commercial trait license agreement. We expect the commercial product to launch in 2021 following the completion of field trials, testing and any voluntary regulatory consultations.

High Fiber Wheat

Fiber is the indigestible portion of food that is essential for healthy digestion. Research has shown that fiber plays an important role in maintaining digestive health, lowering cholesterol, stabilizing blood glucose levels, and controlling weight gain. In recent years, the awareness of the health benefits of high fiber diets has increased. This has translated to a strong growth in demand for high fiber food products.

We are developing our high fiber wheat product candidate, which could be used to produce white flour with up to three times more dietary fiber than standard white flour while maintaining the same flavor and convenience of use. In March 2018 we received confirmation from USDA that our high fiber wheat is deemed non-regulated pursuant to APHIS's regulatory procedures. We began planting high fiber wheat in field trials in 2018 and continued testing in 2019 and 2020.

During the first quarter of 2020, we were notified that a significant portion of our high fiber wheat plants were damaged in field trials due to improper aerial chemical applications by unaffiliated third parties. While we are continuing to assess the impact of this damage on the overall development process and timeline for this product candidate, it has delayed our development by at least one year. This product candidate is currently in Phase 3 of our development pipeline. Our Phase 3 development activities in 2021 will include testing the product concept in field conditions, completing food application studies, and voluntarily consulting with FDA. Given the damage to our field trials described above, the timeline for the trait to be available for a commercial launch is uncertain, but not expected before 2023. In line with our strategic advancement of the business model in high oleic soybeans, we plan to introduce our high fiber wheat innovation as a licensed trait through leading wheat ingredient companies.

High Oleic, Low Linolenic (HOLL) Soybean and Improved Oil Soybean

Our HOLL soybean is our second-generation high oleic product candidate. Food processors desire an oil that delivers higher performance with an improved nutritional profile, ideally one that offers flexibility for blending for flavor specifications. This second-generation soybean product candidate will have the same high oleic content of our first-generation high oleic trait product with the additional benefit of an ultra-low linolenic acid content, which improves the flavor and blending performance. This project also includes our third-generation soybean product candidate, an HOLL soybean with a higher oil content, intended to drive improved economics through incremental crush margin to the processor.

These products are currently in Phase 2 of our development pipeline with targeted availability for commercial plantings in 2023 and 2026, respectively.

Winter Oats

Our trait concept could potentially support the growth of high-quality oats to meet increasing consumer food and feed demands. Our goal is to develop a winter-grown version of oats for food and feed consumption that could also be used as a winter cover crop, with the potential to improve direct-to-consumer farmgate revenue for winter cover crop farmers and generate carbon credits for farmers. Oat is America's second-largest plant-based dairy product, and oat protein is positioned for inclusion in the burgeoning plant-based protein

market. We believe our oat project could support climate resilience, making oats more competitive economically and able to be grown in new regions of the continent, and over the longer term, in additional regions of the world.

This project, which is expected to deliver sustainability benefits once commercialized, is in Phase 1 of our development pipeline with targeted availability for commercial planting in 2026.

Hemp, including Marketable Yield and Low THC for Food, Fiber, and Nutraceuticals

Our projects in hemp target the protein, nutraceutical, fiber, and advanced materials markets. Our first efforts are focused on standardizing the crop for broad acre adoption, reduced risk hemp production, and modernizing the breeding process. We anticipate that our hemp innovations will initially come to market as licensed seed, breeding platform tools or traits, and commercialized by leading germplasm and hemp-based ingredient and material companies.

This product is in Phase 1 of our development pipeline with targeted availability for commercial planting in 2024.

High Saturated Fat Soybeans as an Alternative to Palm Oil

High saturated fat soybeans is another trait we have in development, which could potentially be used as a U.S.-grown alternative to palm oil. There are significant sustainability and supply chain reliability challenges with palm oil, certain of which we believe could be overcome with this prospective oil alternative. We believe our innovation can be a replacement for palm oil which is today used as a food ingredient, in frying, in cosmetics and personal goods, in animal feed, and as an industrial ingredient. We intend to optimize the saturated to unsaturated fat ratio, which gives soy a palm oil-like quality while maintaining agronomics and yield as well as delivering taste and performance improvements.

The current project is in Phase 1 of our development pipeline with targeted availability for commercial planting of 2026.

Government Regulation and Product Compliance

Gene editing is a relatively new technology and the regulatory schemes around the world are continuing to evolve in how countries regulate gene edited crops and food products. Neither we, nor our commercial partners, currently deploy Calyxt technology for use outside of the United States. In today's global market, overall business development strategy for plant biotechnology 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 and there can be no assurance we will be granted clearance on terms favorable to us, if at all.

During the course of 2020, there have been positive regulatory developments with respect to the global regulatory landscape for gene edited products, including the adoption in Japan of guidelines establishing a voluntary consultation process. However, in certain key jurisdictions, including the European Union, China and Mexico, the regulatory path to market for gene edited products remains uncertain.

The United States and the European Union are the two leading jurisdictions, with distinct regulatory regimes applying different rules and requirements.

United States

In the United States, the Environmental Protection Agency (EPA), the U.S. Department of Agriculture (USDA) and the Food and Drug Administration (FDA) are primarily responsible for overseeing agriculture and food regulation and safety. Biotechnology is regulated in the United States under the "Coordinated Framework for Biotechnology".

Biotechnology products are subject to EPA regulatory review if they contain plant-incorporated protectants, which refer to pesticides (such as insecticides) produced in plants. As our product candidates do not contain any plant-incorporated protectors, our product candidates are not subject to regulatory review by the EPA.

Under the Plant Protection Act (PPA), the USDA requires anyone who wishes to import, transport interstate, or plant a regulated article to apply for a permit or notify the Animal and Plant Health Inspection Service (APHIS) that the introduction will be made. Regulated articles are defined in the Code of Federal Regulations (CFR) 7 CFR Part 340.1 as "any organism which has been altered or produced through genetic engineering which USDA determines is a plant pest or has reason to believe is a plant pest." If APHIS determines the product to be regulated, the product may be subject to extensive regulation, including permitting requirements for import, handling, interstate movement, release into the environment, and inspections.

In the last seven years, we submitted petitions to APHIS for eight of our product candidates and received confirmation from APHIS that it does not consider any of the seven to be regulated articles under the Plant Protection Act. The eight product candidates include our high oleic soybean, high oleic low linolenic soybean, high fiber wheat, improved digestibility alfalfa, and cold storable potato. The remaining three submissions were for product candidates for which we are either pursuing derivatives or no longer pursuing at this time. There can be no guarantee of the timing or success in obtaining nonregulated status from APHIS for our other crops or that the governing regulations will not change.

The FDA has oversight of food safety and security pursuant the Food, Drug, and Cosmetic Act, or FDCA and is primarily carried out by its Center for Food Safety and Applied Nutrition. The FDA regulates ingredients, packaging, and labeling of foods, including nutrition and health claims and the nutrition facts panel. Foods are typically not subject to premarket review and approval requirements, with limited exceptions.

The FDA offers a voluntary consultation process to determine whether foods derived from new plant varieties including genetically modified plant varieties require premarket review and approval. Developers routinely consult with the FDA prior to marketing and, in most cases, foods derived from plant varieties developed with biotechnology are not subjected to premarket review and approval processes.

We have completed voluntary consultation with the FDA for our high oleic soybean. After review, the FDA had no further questions concerning human food ingredients or animal food derived from our high oleic soybean.

European Union

If we want to market and sell our products in the European Union (the EU), we would only do so once they have gained appropriate regulatory clearance. The procedures for evaluation and authorization of GMOs are established by Regulation (EC) 1829/2003 on genetically modified food and feed and Directive 2001/18/EC on the release of GMOs into the environment. An application for authorization must be submitted under Directive 2001/18/EC if a company seeks to release GMOs for experimental purposes (e.g., field tests) and/or to sell GMOs, as such or in products, in the market (e.g., cultivation, importation or processing). In turn, an application for authorization must be submitted under Regulation (EC) 1829/2003 if a company seeks to sell GMOs in the market for food and feed use and/or food and feed products containing or produced from GMOs. At the national level, EU member states can restrict or prohibit GMO cultivation in their territories by invoking grounds such as environmental or agricultural policy objectives, town and country-planning, land use, coexistence, socio-economic impacts, or public policy.

In addition, Directive 2001/18/EC, Regulation (EC) 1829/2003 and Regulation (EC) 1830/2003 establish specific labeling and traceability requirements for GMOs and products that contain or are produced from GMOs. Finally, Directives 2002/53/EC and 2002/55/EC require genetically modified varieties to be authorized before they can be included in a Common Catalogue of Varieties, which would permit the seeds of such genetically modified varieties to be marketed in the EU.

A ruling of the European Court of Justice (ECJ) in July 2018 provided a broad interpretation of the concept of GMO in the EU and a narrow interpretation of possible exemptions to the associated rules. Even with respect to exempted organisms, EU member states may subject them to the obligations under Directive 2001/18/EC or to other obligations.

Competition

The market for plant-based technology products is highly competitive, and we face significant direct and indirect competition in several aspects of our business. Competition for improving plant genetics comes from conventional and advanced plant breeding techniques, as well as from the development of genetically modified traits. Other potentially competitive sources of improvement in crop yields include improvements in crop protection chemicals, fertilizer formulations, farm mechanization, other biotechnology, and information management. Programs to improve genetics and chemistry are generally concentrated within a relatively small number of large companies, while non-genetic approaches are underway with a broader set of companies. Additionally, competition for providing more nutritious ingredients for food companies come from chemical-based ingredients, additives, and substitutes, which are developed by various companies.

In general, we believe that we face competition from both large agricultural biotechnology, seed, and chemical companies, certain of which have been actively involved in new trait discovery, development, and commercialization, and from specialty food ingredient companies, which are generally focused on providing solutions to the food industry through chemical, synthetic, or other methods. Many of our competitors—particularly large chemical companies—have substantially larger budgets for research and development (R&D), product commercialization and regulatory process management than we do.

We also face competition from trait research and development companies as well as agricultural research universities and institutions. Given the global importance of agriculture, there are several companies, research universities and institutions that specialize in R&D of agricultural yield and product quality traits. Because these competitors 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.

We believe that we can compete favorably based on our expertise and the precision, specificity, cost effectiveness and development speed of our proprietary technologies. Nevertheless, many of our 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 we do.

Our commercial opportunity could be reduced or eliminated if our competitors develop and commercialize products faster, with lower research costs or with more desirable traits than we can.

Research and Development

Our R&D team has technical expertise in molecular biology, biochemistry, bioinformatics, genetics and genetic engineering, plant physiology and plant breeding. Our R&D activities are conducted principally at our Minnesota facility and we also conduct breeding activities through third parties in the United States and its territories and South America. We have made, and will continue to make, substantial investments in R&D. We incurred R&D expenses of $11.1 million in the year ended December 31, 2020, $12.2 million in the year ended December 31, 2019, and $10.4 million in the year ended December 31, 2018.

Human Capital

As of December 31, 2020, we employed 59 employees, 38 of whom were in R&D. Our multidisciplinary team includes experts in biology, chemistry, plant genetics, agronomy, data science, and other related fields. As early leaders in the field of gene editing for plants, members of our management team have invented TALEN, one of the premier gene editing tools. None of our employees are represented by a labor union or covered by a collective bargaining agreement. We consider our relationship with our employees to be good.

Our employees are a critical asset. We believe that a critical component to our success depends on the ability to attract, develop, and retain key personnel. Recognizing the core importance of our personnel, we attract human capital by providing competitive wages and benefits, and support our employees by promoting health and safety, providing training and development programs that build professional skills, and adhering to our code of conduct and business ethics at all levels of Calyxt.

Human capital management strategies are developed collectively by senior management and are overseen by our Board of Directors. We are committed to efforts that ensure that the workplace is respectful, equitable, ethical, and fosters an inclusive work environment across our workforce.

Information about Segment and Geographic Revenue

We operate in a single segment and geography. Accordingly, no additional segment or geographic information is being presented.

Seasonality

Seed sales are expected to be seasonal and are anticipated to be primarily a function of the purchasing and growing patterns in North America. Seed sales may shift somewhat between quarters, depending on planting and growing conditions, with seed partners' inventory most typically at its lowest level at the end of our fourth fiscal quarter, which is consistent with the agricultural cycles in our major markets. Additionally, our receivables are expected to be at their lowest levels in our fourth fiscal quarter, primarily because of the seasonality of our sales.

Corporate Information

We were incorporated in Delaware on January 8, 2010 and our majority stockholder is Cellectis S.A. (société *anonyme*). Our principal executive offices are located at 2800 Mount Ridge Road, Roseville, MN 55113, United States of America, and our telephone number is +1 (651) 683-2807. We also maintain a website at www.calyxt.com. The information contained in, or that can be accessed through, our website is not part of this report.

Available Information

We file or furnish periodic reports and amendments thereto, including our Annual Reports on Form 10-K, our Quarterly Reports on Form 10-Q and Current Reports on Form 8-K, proxy statements, and other information with the Securities and Exchange Commission (SEC). On our website located at www.calyxt.com, you 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 our other filings with the SEC as soon as reasonably practicable after we electronically file or furnish such information with the SEC. Information contained on our 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.

Item 1A. Risk Factors.

This section includes a discussion of what we believe to be the most significant important factors that could affect our business, operating results, financial condition, and the trading price of our common stock. The risks described below are not the only risks we face. Additional risks and uncertainties not currently known to us, or that we currently deem 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.

Risks Related to Our Business and Operations

We have a limited operating history, which makes it difficult to evaluate our current business and prospects and may increase the risk of investment.

We are an early-stage biotechnology company with a limited operating history that to date has been focused primarily on R&D. Investment in plant-based technology product development is a highly speculative endeavor. It entails substantial upfront R&D investment, primarily in the areas of field trials to support regulatory filings and pre-launch breeding, and there is significant risk that we will not be able to edit the genes in a particular plant to express a desired trait. Moreover, the regulatory pathway for our product candidates can be uncertain and could add significant additional cost and time to development.

Our limited operating history may make it difficult to evaluate our current business and our prospects. We have encountered, and will continue to encounter, risks and difficulties frequently experienced by growing companies in rapidly developing and changing industries, such as the plant-based technology industry, including challenges in forecasting accuracy, determining appropriate investments of our limited resources, gaining market acceptance of the products made using our gene editing platform, managing a complex regulatory landscape, and developing new product candidates.

We have incurred significant losses since our inception and anticipate that we will continue to incur significant losses for the next several years.

Our net loss was $45.1 million for the year ended December 31, 2020, $39.6 million for the year ended December 31, 2019, and $27.9 million for the year ended December 31, 2018. As of December 31, 2020, we had an accumulated deficit of $167.2 million. The amount of our future losses will depend, in part, on our revenues and expenses associated with sales of our high oleic soybean seed, the timing of the introduction of additional products, our ability to identify and contract with collaboration partners, and revenues and expenses associated with technology licensing. The net losses we incur may fluctuate significantly from year-to-year and quarter-to-quarter, such that a period-to-period comparison of our results of operations may not be a good indication of our future performance.

We cannot assure you that we will generate increases in our revenues, successfully contract with third parties who will commercialize our product candidates or generate revenue from licensing or attain a level of profitable operations. Based on our history of losses, we do not expect that we will be able to fund our longer-term capital and liquidity needs through our cash balances and operating cash flow alone. To fund our longer-term capital and liquidity needs, we expect we will need to secure additional capital. Our business plan and financing needs are subject to change depending on, among other things, the success of our efforts to grow revenue and our efforts to continue to effectively manage expenses.

We face significant competition and many of our competitors have substantially greater financial, technical, and other resources than we do.

The market for plant-based technology products is highly competitive, and we face significant direct and indirect competition in several aspects of our business. See "Item 1. Business – Competition". Many of these competitors have substantially greater financial, technical, marketing, sales, distribution, and other resources than we do. As a result, we may be unable to compete successfully against our current or future competitors, which may result in reductions in revenue, reduced margins, and the inability to achieve market acceptance for our products. We expect to continue to face significant competition.

Many of our competitors engage in ongoing R&D, and technological developments by our competitors could render our products less competitive or obsolete, resulting in reduced revenues compared to our expectations. Our ability to compete effectively and to achieve commercial success depends, in part, on our ability to: develop new products with properties attractive to collaboration partners; identify and contract with third parties who will collaborate with us on the development and testing of products we develop, and contracting with those same third parties for the commercialization of those products. We may not be successful in achieving these factors and any such failure may adversely affect our business, results of operations and financial condition.

From time to time, certain competitors may seek to license our technology. We have, in the past, entered such licensing arrangements and may enter such arrangements in the future. Some of these companies may have significantly greater financial resources and may even compete with our business. In such circumstances, competitors could use our technologies to develop their own products that would compete with products commercialized by our collaboration partners.

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

Our business activities are currently conducted at a limited number of locations, which makes us susceptible to damage or business disruptions caused by natural disasters or acts of vandalism.

Our current headquarters and R&D facilities, which include an office, labs, greenhouses, and field-testing plots are in Roseville, Minnesota. Our seed production takes place primarily in the United States and its territories with contra season production also occurring in Argentina. Third party warehousing for seed storage, and our limited number of processing partners (e.g., storage and transportation) are all currently located in the Upper Midwest region of the United States. We take precautions to safeguard our facilities, including insurance, health and safety protocols, and off-site storage of critical research results and computer data. Particularly in the case of insurance, our insurance may not cover certain losses, or our losses may exceed our 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 our equipment, inventory, development projects, field trials or data, and cause us to incur significant additional expenses to repair or replace the damaged physical facilities, which in the case of seed production may be the result of years of development work that is not easily or quickly reproduced, and increase the development schedule for our pipeline of product candidates.

To compete effectively, we must introduce new products that achieve market acceptance.

To remain competitive and increase revenue, we must identify and offer novel traits that appeal to potential collaboration partners or identify and contract with third parties for the development and introduction of new product candidates. If we fail to anticipate or respond to technological developments, market requirements, or fail to meet market demand, our revenues will not increase.

Development of successful products using plant gene editing requires significant levels of investment in R&D, including laboratory, greenhouse, and field testing, to demonstrate product effectiveness and can take several years or more. We incurred R&D expenses, including non-cash stock compensation expenses, of $11.1 million in the year ended December 31, 2020, $12.2 million in the year ended December 31, 2019, and $10.4 million in the year ended December 31, 2018. We must commit significant resources and may incur obligations (such as royalty obligations or milestone fees) to develop new products before knowing whether our investments will result in products the market will accept and without knowing the levels of revenue, if any, that may be derived from these products.

Development of new or improved plant-based products involves risks of failure inherent in the development of products based on innovative and complex technologies. Accordingly, if we or our collaboration partners experience any significant delays in the development or introduction of new products or if our new products do not achieve market acceptance, our business, operating results, and financial condition would be adversely affected.

Any collaboration arrangements that we may enter in the future may not be successful, which could adversely affect our ability to develop and commercialize our product candidates.

We are seeking collaboration arrangements with third parties for the development and commercialization of our product candidates. We will face significant competition in seeking appropriate partners. Moreover, collaboration arrangements are complex and time-consuming to negotiate, document, implement and maintain. We may not be successful in our efforts to establish and implement collaboration arrangements. The terms of any collaborations that we may establish may not be favorable to us.

The success of our collaboration arrangements will depend heavily on the efforts and activities of our partners. Collaborations are subject to numerous risks, which may include that:

- partners have significant discretion in determining the efforts and resources applied to R&D partnerships and may not commit sufficient resources to successfully advance a product candidate or achieve commercial success;
- partners could independently develop, or develop with third parties, products that compete directly or indirectly with ours;

- disputes may arise that cause the delay or termination of the research, development, or commercialization of our current or future products or that results in costly litigation or arbitration that diverts management attention and resources; and
- a partner's sales and marketing activities or other operations may not follow applicable laws resulting in civil or criminal proceedings.

If our field trials are unsuccessful, we may be unable to complete the development of product candidates on a timely basis or at all.

We rely on field trials to demonstrate the efficacy of product candidates that we develop and evaluate in greenhouse conditions. Field trials allow us to test product candidates in the field as well as to increase seed production, and to measure performance across multiple geographies and conditions. Successful completion of field trials is critical to the success of our product development efforts. If our ongoing or future field trials are unsuccessful or produce inconsistent results or unanticipated adverse effects on the agronomic performance of our crops, or if the field trials do not produce reliable data, our product development efforts could be delayed, subject to additional regulatory review or abandoned entirely. In addition, to support our commercialization efforts, it is necessary to collect data across multiple growing seasons and from different geographies. Even in cases where initial field trials are successful, we cannot be certain that additional field trials conducted on a greater number of acres or in different geographies will also be successful. Many factors that are beyond our control may adversely affect the success of these field trials, including unique geographic conditions, weather and climatic variations, disease, or pests, or acts of protest or vandalism. Field trials, which may take up to two to three years, are costly, and any field trial failures that we may experience may not be covered by insurance and, therefore, could result in increased costs, which may negatively impact our business and results of operations.

During the first quarter of 2020, we were notified that a significant portion of our high fiber wheat plants were lost in field trials due to improper aerial chemical applications by unaffiliated third parties. As a result of the crop destruction, the number of cultivars was reduced, which represents a significant reduction in the genetic potential of the wheat germplasm that carries the high fiber trait. The damage has resulted in launch size and regulatory timelines being adversely affected. We are pursuing available avenues of recourse against the unaffiliated third parties involved in the initial crop loss as well as the adverse impact upon the surviving germplasm lines.

The successful commercialization of our seed products depends on our production of high-quality seeds cost-effectively at scale and to accurately forecast demand for our products, and we may be unable to do so.

The production of commercial-scale quantities of seeds requires the multiplication of seeds through a succession of plantings and seed harvests. The cost-effective production of high-quality, high-volume quantities of any product candidates depends on our ability to scale our production processes to produce seeds in enough quantity to meet demand. We cannot assure that our existing or future seed production techniques will enable us to meet our large-scale production goals cost-effectively. Even if we are successful in developing ways to increase yields and enhance quality, we may not be able to do so cost-effectively or on a timely basis, which could adversely affect our ability to achieve profitability. If we are unable to maintain or enhance the quality of our seeds as we increase our production capacity, including through the expected use of third parties, we may experience reductions in customer demand, higher costs, and increased inventory write-offs.

Seed production delays could adversely affect our ability to deliver seed to our customers to meet farmer planting windows. Our dependency upon timely seed deliveries means that interruptions or stoppages in such deliveries, or delays or limitations with respect to seed production, could adversely affect our operations until alternative arrangements could be made. Such a delay would adversely affect our reputation and revenues. If we were unable to produce the necessary seed for an extended period for any reason, our business, customer relations, and operating results could suffer.

In addition, because of the length of time it takes to produce commercial quantities of marketable seeds, we will need to make seed production decisions well in advance of their sale. Our ability to accurately forecast supply can be adversely affected by several factors outside of our control, including changes in market conditions, environmental factors, such as pests and diseases, and adverse weather conditions. A shortfall in the supply of our seed may reduce revenue, damage our reputation in the market, adversely affect relationships, and could harm our business, results of operations and financial condition. In addition, our customers may cancel orders, request a decrease in quantity, or make returns, which may lead to a surplus of our products. Any seed surplus we have on hand may negatively impact cash flows, reduce the quality of our inventory, and ultimately result in write-offs of that inventory.

While we estimate that the potential size of our target markets for our products is significant, that estimate has not been independently verified and is based on certain assumptions that may not prove to be accurate. Our ability to accurately forecast demand is dependent on the timing of customer decisions, qualification cycles, and other factors outside of our control. As a result, these estimates could differ materially from actual market sizes, which could result in decreased demand for our products and therefore adversely impact our future business prospects, results of operation and financial condition.

We rely on third parties to conduct field trials, perform research services, and produce seed for product candidates, and any performance issues by third parties, or our inability to engage third parties on acceptable terms, may impact our ability to successfully commercialize such product candidates.

We currently rely on third parties, such as growers, consultants, contractors, universities, and contract seed producers to conduct, monitor, support and oversee certain research and development activities, including field trials, and produce seed for us. In some cases, these activities are conducted outside of the United States, making it difficult for us to monitor the work being conducted by the third parties that we engage. Although we provide our third-party contractors with protocols regarding the production and handing of our product candidates, we have limited control over the execution of their activities. Poor execution or data collection, failure to follow required agronomic practices, protocols, or regulatory requirements, or mishandling of product candidates by these third parties could impair success. Any such failures may result in delays in the development of our product candidates or the incurrence of additional costs. Even if our third-party contractors adhere to our suggested protocols, field trials or seed production may fail to succeed for a variety of other reasons, including weather, disease or pests, improper timing of planting our seeds, or incorrect fertilizer use. Ultimately, we remain responsible for ensuring work performed is conducted in accordance with the applicable protocol and standards, and our reliance on third parties does not relieve us of our responsibilities. Should such third parties fail to comply with these standards, our ability to develop our product candidates could be adversely impacted.

Additionally, if we are unable to maintain or enter into agreements with third-party contractors on acceptable terms, or if engagement is terminated prematurely, we may be unable to conduct or complete our field trials or seed production in the manner we anticipate. If our relationship with any of these third parties is terminated, we may be unable to enter arrangements with alternative contractors on commercially reasonable terms, or at all. Switching or adding third-party contractors can involve substantial cost and require extensive management time and focus. In addition, there is a natural transition period when any new third party commences work. As a result, delays may occur, which could materially impact our ability to meet our desired development timelines, our operations, and our profitability.

The unintended presence of our traits in other products or plants may negatively affect us.

Trace amounts of our traits may unintentionally be found in the products of third parties, which may result in negative publicity and claims of liability brought by such third parties or others against us. Furthermore, in the event of an unintended dissemination of our gene edited germplasm into the environment, or the presence of unintended trace amounts of our traits in conventional seed, or in the grain or products produced from conventional crops, we could be subject to claims by multiple parties, including environmental advocacy groups, as well as governmental actions such as mandated crop destruction, product recalls, or additional stewardship practices and environmental cleanup or monitoring.

The successful commercialization of our products may face challenges from public perceptions of gene edited products and ethical, legal, environmental, health and social concerns.

The successful commercialization of our product candidates depends, in part, on public acceptance of gene edited plant products.

Consumers may not understand the nature of our technologies, which may make consumers more susceptible to the influence of negative information provided by opponents of biotechnology. Other groups oppose biotechnology particularly as utilized in the food system and direct efforts to disrupt the forward progression of such biotechnology, both generally and with respect to specific applications. Some opponents of biotechnology actively seek to raise public concern about gene editing, whether transgenic or non-transgenic, by claiming that plant products developed using biotechnology are unsafe for consumption or their use, pose a risk of damage to the environment, or creates legal, social, and ethical dilemmas. The commercial success of our products and product candidates may be adversely affected by such claims, even if unsubstantiated.

In addition, opponents of biotechnology have vandalized the fields of farmers planting biotech seeds and facilities used by biotechnology companies. Any such acts of vandalism targeting the fields of farmers planting crops with our traits, our field-testing sites or our research, production, or other facilities, could adversely affect our sales and our costs.

Negative public perceptions about gene editing can also affect the regulatory environment in the jurisdictions in which we are targeting the sale of our products and the commercialization of our product candidates. Any increase in such negative perceptions or any restrictive government regulations in response thereto, could have a negative effect on our business and may delay or impair the sale of our products or the development or commercialization of our product candidates. Public pressure may lead to increased regulation of products produced using biotechnology, further legislation regarding novel trait development technologies, or administrative litigation concerning prior regulatory determinations, each of which could adversely affect our ability to sell our product or commercialize our product candidates. In addition, labeling requirements could heighten public concerns and make consumers less likely to purchase food products

containing gene edited ingredients.

Additionally, we are currently exploring product and partnership opportunities in hemp, among other crops. 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 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. Because the hemp plant and the marijuana plant are both part of the same cannabis sativa species of plant, our activities with legal hemp may be incorrectly perceived as us being involved in federally illegal marijuana. Also, despite growing support for the cannabis industry and legalization of cannabis in certain states in the United States, many individuals and businesses remain opposed to the cannabis industry. Any negative press resulting from any incorrect perception that we have entered the cannabis space could result in a loss of current or future business. It could also adversely affect the public's perception of us and lead to reluctance by new parties to do business with us or to own our common stock. Business partners, including but not limited to financial institutions and customers, may attempt to end, or limit their relationships with us due to this incorrect perception, which may negatively affect our business, financial condition, and results of operations.

Products that we develop, and food containing our products, may fail to meet standards established by third-party non-GMO verification organizations, which could reduce the value of our products to customers.

Certain third-party organizations offer verification programs that seek to identify non-GMO products to consumers. These organizations verify the status of products (such as foods, beverages, and vitamins) as non-GMO based on independently developed standards, and often authorize the display of specific markers or labels illustrating such status on the verified product's packaging. Standards established by such third-party organizations for the verification of non-GMO status may differ from applicable regulatory legal standards applied by regulators in the United States. As a result, notwithstanding a determination as to the non-regulated status of a product pursuant to APHIS's regulatory procedures (or a similar determination in other jurisdictions), our products, and third-party products that utilize our gene edited products as ingredients, may fail to meet more restrictive or non-scientific standards imposed by these independent verification organizations.

For example, there are third-party verification organizations that withhold non-GMO certification from products developed using gene editing technology, including a product that does not contain any foreign DNA, such as our current product candidates. Such a position means that some non-GMO seals or labels are not available for gene edited products.

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

We may be held liable if any product we develop, or any product that uses or incorporates any of our technologies, is found unsuitable during marketing, sale, or consumption. For example, the detection of an unintended trait in a commercial seed variety or the crops and products produced may result in governmental actions such as mandated crop destruction, product recalls or environmental cleanup or monitoring. Concerns about seed quality could also lead to additional regulations being imposed on our business, such as regulations related to testing procedures, mandatory governmental reviews of biotechnology advances, or additional regulations relating to the integrity of the food supply chain from the farm to the finished product.

We may need to raise additional funding, which may not be available on acceptable terms or at all. Failure to obtain this necessary capital when needed may force us to delay, limit or terminate our product development efforts or other operations.

As of December 31, 2020, we had cash, cash equivalents, restricted cash, and short-term investments of $30.0 million. We believe our cash and cash equivalents will be enough to fund our operations into the second half of 2022.

Our business plan is to advance our soybean product to a seed go-to-market strategy, collaborate with third parties to complete the development and regulatory processes for our other product candidates, including new product candidates we agree to develop for third parties, and strategically license our technology. Based on our history of losses, we do not expect that we will be able to fund our longer-term capital and liquidity needs to execute our business plan and pursue our strategic goals through our cash balances and operating cash flow alone. To fund our longer-term capital and liquidity needs, we expect we will need to secure additional capital. Our business plan and financing needs are subject to change depending on, among other things, success of our product development efforts, our revenue, and our efforts to continue to effectively manage expenses. If we are ultimately unable to generate sufficient revenue to meet our financial targets, become profitable and have sustainable positive cash flows, we may be required to further reduce expenses, which could have a further negative effect on our ability to generate revenue, or we may be required to raise additional capital more quickly than we expect or we may need more capital than we expect.

We may obtain future additional financing by incurring indebtedness or from an offering of our equity or convertible securities or both. To the extent that we raise additional capital through the sale of additional equity or convertible securities, current ownership interests will be diluted, and new investors may demand rights, preferences, or privileges senior to those of existing holders of common stock. Debt financing, if available, would result in increased fixed payment obligations and a portion of our operating cash flows, if any, being dedicated to the payment of principal and interest on such indebtedness. In addition, debt financing may involve agreements that include restrictive covenants that impose operating restrictions, such as restrictions on the incurrence of additional debt, the making of certain capital expenditures or the declaration of dividends. If we raise capital in the future, we cannot assure you that additional capital will be available in the amount or at the time we need it, or that it will be available on acceptable terms or at all. If we are unable to obtain sufficient funding on a timely basis, we may be required to significantly curtail, delay, or discontinue one or more of our research or product candidate development programs or the commercialization of any product candidate or be unable to expand our operations or otherwise capitalize on our business opportunities, as desired, which could materially affect our business, operating results and prospects and cause the price of the common stock to decline.

The extent to which the COVID-19 pandemic and resulting deterioration of worldwide economic conditions adversely impact our business, financial condition, and operating results will depend on future developments, which are difficult to predict.

As a result of the COVID-19 pandemic, governmental authorities have implemented and are continuing to implement numerous and rapidly evolving measures to try to contain the virus, such as travel bans and restrictions, limits on gatherings, quarantines, shelter-in-place orders, and business shutdowns. In response to the COVID-19 pandemic and in accordance with governmental orders, we have also modified our business practices and implemented proactive measures to protect the health and safety of employees, including restricting employee travel, requiring remote work arrangements for non-laboratory employees, implementing social distancing, and enhanced sanitary measures in our headquarters, and cancelling attendance at events and conferences. Many of the suppliers, vendors, and service providers on whom we rely on have made similar modifications. There is no certainty that such measures will be sufficient to mitigate the risks posed by, or the impacts and disruptions of, the COVID-19 pandemic.

As a result of the COVID-19 pandemic and government actions to contain it, related volatility in the financial markets and deterioration of national and global economic conditions, we could experience material adverse operational and financial impacts, including:

- overall lower expenditures by potential commercial partners as a result of challenging economic circumstances arising from the COVID-19 pandemic and potentially continuing after the immediate crisis subsides;
- disruptions and delays to our R&D pipeline resulting from a shutdown of our headquarters due to expanded governmental restrictions or illness among our personnel as a result of COVID-19, increased absenteeism among employees, or delays with respect to raw materials necessary for our R&D activities;
- interruptions or delays in seed production or grain sales resulting from supply chain disruptions, including as a result of restrictions or disruptions to transportation or operational disruptions at warehousing, storage, crushing and/or refining facilities;
- overall reduced operational productivity resulting from challenges associated with remote work arrangements, limited resources available to our employees (particularly with respect to our business development employees for whom in-person access to our customers and customer prospects has been significantly limited) and increased cybersecurity risks as a result of remote access to our information systems; and
- constraints on financing opportunities resulting from dislocations in the capital markets, which may make it too costly or difficult for us to pursue public or private equity or debt financings on acceptable terms.

The degree to which COVID-19 impacts our business and results will depend on future developments, which are highly uncertain and cannot be predicted, including, but not limited to, the severity, duration and geographic spread of the outbreak, and the global, national, and regional actions to contain the virus and address its impact, including travel restrictions imposed, business closures or business disruption.

The resumption of normal business operations after interruptions caused by COVID-19 may be delayed or constrained by lingering effects of COVID-19 on us or our suppliers, third-party service providers, counterparties in collaboration arrangement or licenses, or customers. Even after the COVID-19 outbreak has subsided, Calyxt may experience material and adverse impacts on its business, operating results, and financial condition as a result of the global economic impact of COVID-19 outbreak, including any recession that has occurred or may occur in the future.

The impact of COVID-19 may also exacerbate other risks discussed in this Item 1A. “Risk Factors”, any of which could have a material effect on us. This situation is changing rapidly, and additional impacts may arise that we are not aware of currently.

Risks Related to Our Industry

The overall agricultural industry is susceptible to commodity price changes and we are exposed to market risks from changes in commodity prices.

Changes in the prices of commodities products could result in higher overall cost along the agricultural supply chain, which may negatively affect our ability to commercialize our products. We will be susceptible to changes in costs in the agricultural industry as a result of factors beyond our control, such as general economic conditions, seasonal fluctuations, weather conditions, demand, food safety concerns, product recalls and government regulations. As a result, we may not be able to anticipate or react to changing costs by adjusting our practices, which could cause our operating results to deteriorate. While we manage our exposure to changing commodity prices underlying sales contracts and supply agreements for grain and seed production by entering into commodity derivative transactions, those activities may not provide full mitigation of our exposure to changes in commodity prices, and as a result our results of operations and financial condition may be affected. See Item 7A "Quantitative and Qualitative Disclosures About Market Risk".

Adverse weather conditions, natural disasters, crop disease, pests and other natural conditions can impose significant costs and losses on our business.

Our and a farmer's ability to grow our products is vulnerable to adverse weather conditions, including windstorms, floods, drought, and temperature extremes, which are quite common but difficult to predict, the effects of which may be influenced and intensified by ongoing global climate change. Unfavorable growing conditions can reduce both crop size and crop quality. This risk is particularly acute with respect to the Upper Midwest region of the United States in which we currently source our high oleic soybean grain. In extreme cases, entire harvests may be lost in some geographic areas. Such adverse conditions can result in harvesting delays or loss of crops for farmers and cause us to be delayed, or to fail entirely in delivering product to customers, resulting in loss of revenue. Furthermore, significant fluctuations in market prices for agricultural inputs and crops could also have an adverse effect on the prices of our products.

The ability to grow our products is also vulnerable to crop disease and to pests, which may vary in severity and effect, depending on the stage of production at the time of infection or infestation, the type of treatment applied, climatic conditions and the risks associated with ongoing global climate change. The costs to control disease and other infestations vary depending on the severity of the damage and the extent of the plantings affected. Moreover, there can be no assurance that available technologies to control such infestations will continue to be effective. These infestations can also increase costs, decrease revenues and lead to additional charges to earnings, which may have a material adverse effect on our business, financial position, and results of operations.

Risks Related to Regulatory and Legal Matters

The regulatory environment in the United States for our current and future products is uncertain and evolving.

We incur significant expense related to our monitoring of, and compliance with, applicable regulatory requirements in the United States. Changes in applicable regulatory requirements could result in a substantial increase in the time and costs associated with developing our products and negatively impact our operating results. While the USDA and FDA currently have petition processes that we have successfully completed in the past, these processes, and the manner in which the USDA and FDA interpret their own regulations may change in the future, negatively impacting our speed to market and cost to launch product candidates. We cannot predict whether advocacy groups will challenge existing regulations and USDA or FDA determinations or whether the USDA or FDA will alter the manner in which it interprets its own regulations or institutes new regulations, or otherwise modifies regulations in a way that will subject our products to more burdensome standards, thereby substantially increasing the time and costs associated with developing our product candidates.

Additionally, we are currently exploring product and partnership opportunities in hemp, among other crops. 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 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. As we continue to explore hemp as a product candidate, we may become subject to increasing regulation particular to hemp, which could require us 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 our products will be regulated.

The regulatory environment around gene editing in plants for agricultural products 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 agricultural products, which may include restrictions and regulations on planting and growing genetically modified plants and in the consumption and labeling of genetically modified foods, and which may encapsulate our products. To the extent regulatory frameworks

outside of the United States are not receptive to our gene editing technologies, this may limit our 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 we will be able to commercialize our products outside the United States.

We cannot predict whether or when any jurisdiction will change its regulations with respect to our 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 our products could result in greater regulation of genetic research and derivative products or regulatory costs that render our products cost prohibitive.

The scale of the commodity food and agricultural industry may make it difficult to monitor and control the distribution of our products. As a result, our products may be sold inadvertently within jurisdictions where they are not approved for distribution. Such sales may lead to regulatory challenges or lawsuits against us, which could result in significant expenses and management attention.

Government policies and regulations, particularly those affecting the agricultural sector and related industries, could adversely affect our operations and profitability.

Agricultural production and trade flows are subject to government policies and regulations. Governmental policies and approvals of technologies affecting the agricultural industry, such as taxes, tariffs, duties, subsidies, incentives and import and export restrictions on agricultural commodities and commodity products can influence the planting of certain crops, the location and size of crop production, and the volume and types of imports and exports. Future government policies in the United States or in other countries may discourage our customers from using our products or encourage the use of products more advantageous to our competitors, which would put us at a commercial disadvantage and could negatively impact our future revenues and results of operations.

We may use biological materials in our business and are 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.

We are 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. Our R&D processes involve the controlled use of hazardous materials, including biological materials. We may be sued for any injury or contamination that results from our use or the use by third parties of these materials, or may otherwise be required to remediate such contamination, and our liability may exceed any insurance coverage and our total assets. Compliance with environmental, health and safety laws and regulations may be expensive and may impair our R&D efforts. If we fail to comply with these requirements, we 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, we cannot predict the impact on our 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 our research, development or production efforts or result in increased expense of compliance.

Risks Related to Intellectual Property

We license a significant portion of our intellectual property from Cellectis, our majority stockholder, and the University of Minnesota, and principally rely upon Cellectis to prosecute and defend such intellectual property.

Our business relies heavily on the intellectual property we license from Cellectis and the University of Minnesota. If we do not comply with our obligations under the license agreements, we may be subject to damages, which may be significant, and in some cases Cellectis and/or the University of Minnesota may have the right to terminate the license agreement. Any termination of our license agreement with Cellectis or the University of Minnesota would have a material adverse effect on our business and results of operations.

Moreover, any enforcement of the licensed intellectual property could subject it 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 would materially impair any competitive advantage afforded to us by such intellectual property. There can be no assurance that Cellectis or the University of Minnesota will prosecute and maintain such intellectual property in the best interests of our business or at all, and, if Cellectis or the

University of Minnesota fails to properly prosecute and maintain such intellectual property, we could lose our rights to such intellectual property, which would materially impair any competitive advantage afforded to us by such intellectual property. For more information regarding our license agreement with Cellectis or the license agreement between Cellectis and the University of Minnesota, please see "Business—Intellectual Property."

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

The patent positions of biotechnology companies and other actors in our 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 our or our licensors' patents and patent applications, if successful, may result in the denial of our or our 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 our or our licensors' patents may not provide us 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 our business.

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

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

We will not seek to protect our intellectual property rights in all jurisdictions throughout the world and we may not be able to adequately enforce our intellectual property rights even in the jurisdictions where we seek 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. Our 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, we may not be able to prevent third parties from practicing our inventions in all countries outside the United States, or from selling or importing products made using our inventions in and into the United States or other jurisdictions.

Competitors may use our technologies in jurisdictions where we or our licensors do not pursue and obtain patent protection. Further, competitors may export otherwise infringing products to territories where we or our 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 our products and our 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 our discoveries or to develop and commercialize our technology and products without providing any notice or compensation to us or may limit the scope of patent protection that we or our 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 our intellectual property rights.

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

Third parties may assert rights to inventions we develop or otherwise regard as our own.

Third parties may in the future make claims challenging the inventorship or ownership of our or our licensors' intellectual property. We have written agreements with R&D partners that provide for the ownership of intellectual property arising from the relationship. Some agreements provide that we must negotiate certain commercial rights at a later date and others may not include clearly address the allocation of intellectual property rights. If we cannot successfully negotiate sufficient ownership and commercial rights to the inventions that result from our 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, we may be limited in our ability to capitalize on the full market potential of these inventions. In addition, we may face claims by third parties that our agreements with employees, contractors, or consultants obligating them to assign intellectual property to us 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 we are not successful, we may be precluded from using certain intellectual property and associated products and technology, which could have a material adverse effect on our business.

In addition, the research resulting in certain of our 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 we fail 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 the United States industry. Any exercise by the government of any of the foregoing rights could have a material adverse effect on our business.

Any infringement, misappropriation, or other violation by us of intellectual property rights of others may prevent or delay our product development efforts and may prevent or increase the costs of our successfully commercializing our product candidates.

Our success will depend in part on our ability to operate without infringing, misappropriating, or otherwise violating the intellectual property and proprietary rights of third parties. We cannot assure that our business operations, products, product candidates and methods and the business operations, products, product candidates and methods of our partners 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 our products, product candidates or the use of our technologies infringe, misappropriate, or otherwise violate patent claims or other intellectual property rights held by them or that we are 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 us may require us to pay substantial damages, including treble damages and attorneys' fees if we or our 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 we are forced to take a license. Such a license may not be available on commercially reasonable terms, or at all. Even if we were able to obtain a license, it could be non-exclusive, thereby giving our competitors access to the same intellectual property rights or technologies licensed to us. In addition, if any such claim were successfully asserted against us and we could not obtain a license, we or our partners may be forced to stop or delay developing, manufacturing, selling or otherwise commercializing our products, product candidates or other infringing technology, or those we develop with our R&D partners.

Even if we are successful in these proceedings, we may incur substantial costs and divert management time and attention pursuing these proceedings, which could have a material adverse effect on us. Furthermore, because of the substantial amount of discovery required in connection with intellectual property litigation, there is a risk that some of our 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 our common stock. Such litigation or proceedings could substantially increase our operating losses and reduce the resources available for development activities or any future sales, marketing, or distribution activities. If we are unable to avoid infringing the patent rights of others, we may be required to seek a license, defend an infringement action, or challenge the validity of the patents in court, or redesign our products. Patent litigation is costly and time consuming. We 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 our business, results of operations, financial condition, and prospects.

We may be unsuccessful in developing, licensing, or acquiring intellectual property that may be required to develop and

commercialize our product candidates.

Our programs may involve additional product candidates that may require the use of intellectual property or proprietary rights held by third parties; the growth of our business may depend in part on our ability to acquire, in-license or use these intellectual property and proprietary rights. However, we may be unable to acquire or in-license any third-party intellectual property or proprietary rights that may be key to development. Even if we can acquire or in-license such rights, we 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 we may consider attractive or necessary. These established companies may have a competitive advantage over us due to their size, capital resources and agricultural development and commercialization capabilities.

In connection with his appointment as chair of our newly formed Scientific Advisory Board, Dr. Dan Voytas is no longer our Chief Science Officer, a position he held from our founding in January 2010 through February 2021. Our consulting agreement with Dr. Voytas, while he served as Chief Science Officer, and our current engagement letter with Dr. Voytas, as chair of our Scientific Advisory Board, each generally obligates Dr. Voytas to assign to us any intellectual property solely or jointly conceived, developed or reduced to practice by him in the course of the performance of his services to us. However, we do 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 us, including in connection with his employment at the University of Minnesota.

In addition, companies that perceive us to be a competitor may be unwilling to assign or license intellectual property and proprietary rights to us. We also may be unable to license or acquire third-party intellectual property and proprietary rights on terms that would allow us to make an appropriate return on our investment or at all. If we are 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 we have, we may have to cease development of the relevant program, product, or product candidate, which could have a material adverse effect on our business.

We intend to license certain product candidates that we develop and, in some cases, our TALEN technology to third parties and will be dependent on them to successfully commercialize these product candidates or product candidates developed with our technology.

In addition to our seed sale go-to-market strategy, we intend to license certain product candidates that we develop to third parties for commercialization and sale under their own brands. In addition, we may out-license our technology platform to permit third parties to develop specific traits in specific crops. Our licensee customers could be global food processing companies, seed companies, biotechnology companies, germplasm providers, and growers. Once we license a product candidate to a customer, they will typically oversee its commercialization. Where we license our technology platform to a customer, they will typically oversee its development and commercialization. In both cases, our ability to achieve milestone payments or generate royalties will not be within our direct control.

We license our primary gene editing technology, TALEN, from Cellectis and also license other technology from Cellectis and the University of Minnesota. Accordingly, the economic terms of our partnership and licensing agreements will need to consider royalty payments that we are required to make to our licensors on revenue we generate under our partnership agreements and license arrangements.

If our licensees are delayed or unsuccessful in their development and commercialization efforts, as applicable, or if they fail to devote sufficient time and resources to support the marketing and selling efforts of those products, we may not receive milestone and/or royalty payments as expected, and our financial results could be harmed. Further, if these licensee customers fail to market licensed products or products developed with our licensed technology at prices that will achieve or sustain market acceptance for those products, our royalty revenues could be further harmed.

Some of the licenses we may grant to our licensing partners may be exclusive, which could limit further licensing or partnership opportunities.

Some of the licenses we may grant to our licensing partners with respect to certain product candidates or for the development of specific traits in identified crops using our TALEN technology may be exclusive within specified jurisdictions, so long as our licensing partners comply with the terms of the license agreements. That means that once a product candidate is licensed to a licensing partner, we may be generally prohibited from licensing that product candidate to any other third party. For example, our license with S&W provides S&W with exclusive rights to our improved quality alfalfa seed in several jurisdictions, including the United States. Similarly, once our technology is licensed for a specific trait in a specific crop, we may be generally prohibited from licensing our technology to any other third party for purposes of developing the same trait in the same crop or from using our technology ourselves to develop the same trait in the same crop. The limitations imposed by such exclusive licenses could prevent us from expanding our business and increasing our

product development initiatives with new licensing partners, both of which could adversely affect our business and results of operations.

Risks Related to Our Organization and Operation

We depend on key management personnel and attracting and retaining other qualified personnel, and our business could be harmed if we lose key management personnel or cannot attract and retain other qualified personnel.

Our success depends to a significant degree upon the technical skills and continued service of certain members of our management and other key employees. The loss of the services of our management or key employees may delay or prevent the timely and successful execution of our business strategies and objectives. Additionally, most of our personnel are involved in research, development, and regulatory activities and competition for these highly skilled employees is intense. Our business is therefore dependent on our ability to recruit and maintain a highly skilled and educated workforce with expertise in a range of disciplines, including biology, biochemistry, plant genetics, agronomics, mathematics, agribusiness, and other subjects relevant to our operations. All our current employees are at-will employees, and the failure to retain or hire skilled and highly educated personnel could limit our growth and hinder our research and development efforts. There can be no assurance that we will be successful in attracting or retaining such personnel and the failure to do so could have a material adverse effect on our business, financial condition, and results of operations.

Our business and operations would suffer in the event of computer system failures, cyber-attacks, or a deficiency in our cyber-security.

Despite the implementation of security measures, our internal computer systems, and those of third parties on which we rely, and the data transmitted across these systems, are vulnerable to damage from computer viruses, malware, natural disasters, terrorism, war, telecommunication and electrical failures, cyber-attacks or cyber-intrusions over the Internet, attachments to emails, persons inside our organization, or persons with access to systems inside our organization. The risk of data loss or a security breach or disruption, particularly through cyber-attacks or cyber-intrusion, including by computer hackers, foreign governments, and cyber terrorists, has generally increased as the number, intensity and sophistication of attempted attacks and intrusions from around the world have increased. If such an event were to occur and cause interruptions in our operations or loss of our data, it could result in a material disruption of our product development programs. For example, the loss of field trial data from completed or ongoing or planned field trials could result in delays in our regulatory clearance and significantly increase our costs to recover or reproduce the data and add additional time to our product development timelines. To the extent that any disruption or security breach was to result in a loss of or damage to our data or applications, or inappropriate disclosure of confidential or proprietary information, we could incur liability, damage to our reputation, and the development of our product candidates could be delayed.

Risks Related to Our Relationship with Cellectis

Cellectis controls the direction of our business, and the concentrated ownership of our common stock and certain contractual rights Cellectis has will prevent you and other stockholders from influencing significant decisions.

As of December 31, 2020, Cellectis owned 64.7 percent of our outstanding shares of common stock. Pursuant to our stockholders' agreement, Cellectis will have certain contractual rights for so long as it beneficially owns at least 50 percent of the then outstanding shares of our common stock, including approval rights over a significant number of key aspects of our operations and management. In addition, though their rights are diminished compared to when they own more than 50 percent of our then outstanding common stock, Cellectis will also maintain certain significant rights, including a right to nominate a majority of our board of directors, as long as it beneficially owns at least 15 percent of the then outstanding shares of our common stock. As a result, Cellectis controls the direction of our business, and the concentrated ownership of our common stock and the contractual rights described above will prevent stockholders from influencing significant decisions.

If Cellectis sells a controlling interest in our company to a third party, stockholders may not realize any change-of-control premium on shares of our common stock.

Cellectis has the ability, should it choose to do so, to sell some or all its shares of our common stock to a third party, which, if sufficient in size, could result in a change of control of our company. In certain circumstances, a third-party buyer may not be willing to pay a premium over the current market price of our common stock to acquire a controlling interest in Calyxt. Our stockholders would not have the right to participate in Cellectis' sale of our common stock to a third-party buyer nor would the third-party buyer be required to make an offer to acquire shares of our common stock from any stockholder other than Cellectis.

If Cellectis sold a controlling interest to a third party, any change-of-control premium on shares of our common stock would only accrue to Cellectis and not to any of our other stockholders. Additionally, through its ownership of a majority of our common stock and its

contractual rights under the stockholders' agreement, Cellectis will also determine whether a change of control of Calyxt occurs and if so, on what terms. In certain circumstances, including in connection with a proposed sale of Calyxt, Cellectis' interests as a stockholder of Calyxt may be different than the interests of other stockholders.

We are a "controlled company" within the meaning of the rules of the NASDAQ and, as a result, rely on exemptions from certain corporate governance requirements. Our stockholders do not have the same protections afforded to stockholders of companies that are subject to such requirements.

Because Cellectis controls the majority of the voting power of our outstanding common stock, we are a "controlled company" within the meaning of the corporate governance standards of the NASDAQ. Under these rules, a listed company of which more than 50 percent of the voting power is held by an individual, group or another company is a "controlled company" and may elect not to comply with certain corporate governance requirements, including the requirement to have a majority independent board of directors or fully independent nominating and compensation committees. We are relying upon and expect to continue to rely upon some of these exemptions from the NASDAQ corporate governance requirements. Accordingly, not all stockholders will have the same protections afforded to stockholders of companies that are subject to all the corporate governance requirements of the NASDAQ.

Cellectis and our directors who have relationships with Cellectis may have conflicts of interest with respect to matters involving our company.

Our certificate of incorporation provides that none of Cellectis, 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 us or our stockholders for breach of any fiduciary duty by reason of the fact that Cellectis or any such individual directs a corporate opportunity to Cellectis or its affiliates instead of us, or does not communicate information regarding a corporate opportunity to us that such person or affiliate has directed to Cellectis or its affiliates.

Our certificate of incorporation also provides that neither Cellectis nor any of its affiliates or any of our nonemployee directors will have any duty to refrain from engaging in a corporate opportunity in the same or similar lines of business in which we or any future subsidiaries now engage or propose to engage or otherwise competing with us or any of our future subsidiaries.

Our license agreement with Cellectis does not restrict Cellectis from competing with us generally. Cellectis could develop and commercialize agricultural and food products that may compete with our current products or products in our pipeline using Cellectis intellectual property or technologies other than the gene editing technologies Cellectis has licensed to us. Cellectis 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 our plant-based products in certain circumstances.

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

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

Future sales of common stock by Cellectis or others of our common stock, or the perception that such sales may occur, could depress the market price of our common stock.

As of December 31, 2020, Cellectis owned 64.7 percent of our 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 Cellectis is deemed to be our affiliate, unless the shares to be sold are registered with the SEC. We are unable to predict with certainty whether or when Cellectis will sell a substantial number of shares of our common stock. The sale by Cellectis of a substantial number of shares, or a perception that such sales could occur, could significantly reduce the market price of our common stock.

The concentration of ownership of our common stock and provisions in our Certificate of Incorporation, Bylaws and Delaware law may prevent or delay an acquisition of us, which could decrease the trading price of our common stock.

The fact that Cellectis owns 64.7 percent of our common stock and Cellectis' rights under the stockholders' agreement to approve a sale of Calyxt and other changes in our Board of Directors and management will prevent a third party from attempting to acquire control of Calyxt and prevent changes in our Board of Directors or management, even if a sale of Calyxt or the changes would be considered beneficial by many stockholders other than Cellectis.

Following the first date on which Cellectis no longer beneficially owns more than 50 percent of the outstanding shares of our common stock, certain provisions of our certificate of incorporation, bylaws and other agreements may make it more difficult for a third party to acquire or discourage a third-party from attempting to acquire control of Calyxt. These provisions could also make it more difficult for a third party to acquire us, even if the third party's offer may be considered beneficial by many stockholders, including transactions in which our stockholders might otherwise receive a premium for their shares of our common stock. Further, these provisions could limit the price that investors might be willing to pay in the future for shares of our common stock, possibly depressing the market price of our common stock. As a result, stockholders may be limited in their ability to obtain a premium for their shares both while ownership of our common stock is concentrated with Cellectis and after.

Risks Related to Ownership of Our Common Stock

The market price of our common stock has been and could remain volatile, which could adversely affect the market price of our common stock.

The market price of our common stock has experienced, and may continue to experience, volatility in response to various factors. Between January 1, 2018 and December 31, 2020, the sales price of our common stock on the NASDAQ Global Market fluctuated from a high of $26.42 per share at closing to a low of $2.48 per share at closing. Some factors that may cause the market price of our common stock to fluctuate include our quarterly operating results, our perceived prospects, or the perceptions of the market of our pipeline, our new products or our technologies, changes in securities analysts' recommendations or earnings estimates and our ability to meet such estimates, changes in general conditions in the economy or the financial markets, capital raising activity and other developments affecting us, our competitors or Cellectis.

These and other market and industry factors may cause the market price and demand for our common stock to fluctuate substantially, regardless of our actual operating performance, which may limit or prevent investors from readily selling their common stock at a favorable price or at all and may otherwise negatively affect the liquidity of our common stock.

We are an "emerging growth company" and have reduced disclosure requirements that may make our common stock less attractive to investors.

We are an "emerging growth company," as defined in the JOBS Act, and take advantage of certain exemptions from various reporting requirements that are applicable to other public companies that are not "emerging growth companies" including, but not limited to, not being required to comply with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act, reduced disclosure obligations regarding executive compensation in our periodic reports and proxy statements, and not being required to submit certain executive compensation matters to stockholder advisory votes, such as "say-on-pay," "say-on-frequency" and "say-on-golden parachutes". If investors may find our common stock less attractive because of our reliance on these exemptions and, as a result, there may be a less active trading market for our common stock and our stock price may be more volatile.

Item 1B. Unresolved Staff Comments

None.

Item 2. Properties

We lease a 40,000 square-foot corporate headquarters facility in Roseville, Minnesota under a lease dated September 6, 2017. The facility includes office, research laboratories, greenhouses, and outdoor growing plots. The lease has an initial term that began in May 2018 and expires on the last day of May 2028, 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. We have 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. Cellectis has guaranteed all our obligations under the lease, as discussed in Note 8 to our Consolidated Financial Statements, "Leases, Other Commitments, and Contingencies".

Item 3. Legal Proceedings

We are not a party to any material pending legal proceeding as of December 31, 2020. From time to time, we 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

Our common stock has traded on the NASDAQ Global Market under the ticker symbol of CLXT since our initial public offering on July 25, 2017. Prior to that time, there was no established public trading market for our common stock.

Holders of Common Stock

As of March 4, 2021, there were 3 holders of record of 37,155,887 outstanding shares of our common stock. The number of holders of record of our common stock does not reflect the number of beneficial holders whose shares are held by banks, depositaries, brokers, or other nominees.

Use of Proceeds from Initial Public Offering of Common Stock

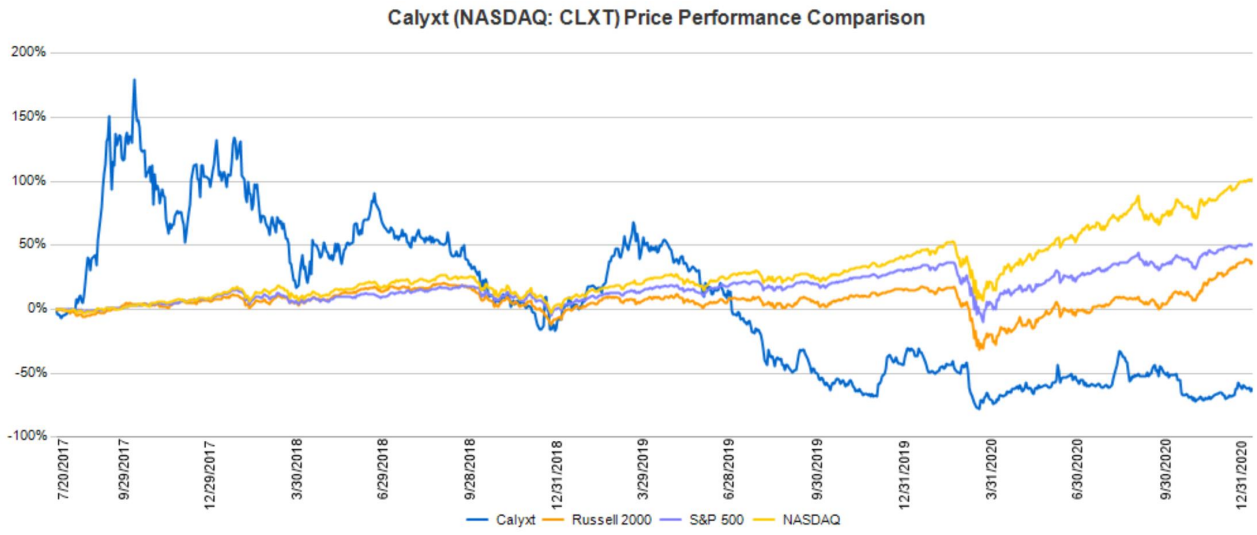
During the period from July 17, 2017 (the effective date of our Form S-1 (333-218924) for our initial public offering) to December 31, 2020, we applied all of the offering proceeds from our initial public offering substantially consistent with the use of proceeds described in our Rule 424(b)(4) prospectus filed with the SEC on July 21, 2017.

Dividends

We have not paid dividends on our common stock and do not currently plan to pay any cash dividends in the foreseeable future.

Stock Performance Graph

The following graph shows a comparison from July 20, 2017 (the date our common stock commenced trading on The NASDAQ Global Market) through December 31, 2020 of the cumulative total return for our 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 our 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.



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 our 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 our compensation plans under which shares of our common stock are authorized for issuance as of December 31, 2020:

Plan Category	(A) Number of securities to be issued upon exercise of outstanding options, warrants and rights		Weighted-average exercise price of outstanding options, warrants and rights	Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in column (A)
Equity compensation plans approved by security holders [1]	4,621,173	$	10.30[2]	3,938,285[3]
Equity compensation plans not approved by security holders	—		—	—
Total	4,621,173	$	10.30	3,938,285

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

[2] Represents the weighted average exercise price of options outstanding under the 2014 Plan and the 2017 Plan.

[3] Of these shares, none are available for future issuance from the 2014 Plan and 3,938,285 remain available for future issuance from the 2017 Plan. All these shares are available for issuance other than upon exercise of options, warrants, or rights.

Repurchases of Equity Securities by the Issuer or Affiliate Purchasers

The following table sets forth certain information related to our repurchases of equity securities, including any repurchases by affiliates, for the year ended December 31, 2020:

Period	Total number of shares purchased	Average price paid per share	Total number of shares purchased as part of publicly announced programs	Maximum dollar value of shares that may yet be purchased under the programs
January 1, 2020 - January 31, 2020	17,792	$ 7.01	—	—
February 1, 2020 - February 29, 2020	—	$ -	—	—
March 1, 2020 - March 31, 2020	—	$ -	—	—
April 1, 2020 - April 30, 2020	—	$ -	—	—
May 1, 2020 - May 31, 2020	—	$ -	—	—
June 1, 2020 - June 30, 2020	—	$ -	—	—
July 1, 2020 - July 31, 2020	—	$ -	—	—
August 1, 2020 - August 31, 2020	—	$ -	—	—
September 1, 2020 - September 30, 2020	—	$ -	—	—
October 1, 2020 - October 31, 2020	—	$ -	—	—
November 1, 2020 - November 30, 2020	—	$ -	—	—
December 1, 2020 - December 31, 2020	—	$ -	—	—
Total	**17,792**	$ 7.01	—	—

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

We are a technology company focused on delivering plant-based innovations and solutions with substantial disruption potential across multiple industries. We are a leader in gene editing with exclusive access to proprietary TALEN technology for use in plants, which we used to successfully commercialize the first gene edited food product in the United States. We have a robust development pipeline that spans multiple crops and that is focused on several important trends, including functional nutrition, regenerative agriculture, sustainability, plant-based protein, and animal nutrition.

Our strategy is based on focusing on our core strengths in research and development, gene editing, and trait development. We deploy a capital-efficient, streamlined business model comprising three differentiated go-to-market strategies. Specific deal structure and the amount and timing of cash flows and revenues are expected to vary depending upon several factors, including cost to develop, size of the opportunity, and the stage at which a partner or licensee enters the development process. Across each of our go-to-market strategies, we seek to develop relationships with strategic customers where our product candidates are most likely to benefit from the counterparty's deep agronomy, product management, and commercialization expertise.

Our business is described in greater detail in "Item 1. Business—Company Overview."

Selected Achievements and Developments

- In August 2020, as part of the broader transition of our business model, we announced a change in the go-to-market strategy for our high oleic soybean products. In the fourth quarter of 2020, we announced that we had contracted to sell all 2020 grain production of our high oleic soybean to Archer Daniels Midland (ADM). The total purchases represent approximately four million bushels of high oleic soybean grain. Sales began in the third quarter of 2020 and will continue throughout 2021, with prices to be determined on the basis of agricultural commodity market prices in effect at the time our planned deliveries of grain are agreed upon.

- In the fourth quarter of 2020, we entered into a research collaboration with NRGene® that includes the adoption of NRGene's cloud-based genomics platform to support several of our research projects. The genomics solutions, including NRGene's QuickGENETICS™ technology, which analyzes breeding populations, delivers high resolution genetic mapping, and generates unique genetic markers for high value traits, are expected to allow for more comprehensive evaluations to accelerate trait discovery and breeding across multiple crops. We are integrating NRGene's genomic resources to build out our proprietary predictive data analytics, which combines insights, scientific data, predictive algorithms, and data visualization tools to develop customized products to meet specific customer requirements.

- Additionally, in the fourth quarter of 2020, we executed a commercialization agreement with S&W Seed Company, a global agricultural company headquartered in Longmont, Colorado, for the exclusive license of an improved quality alfalfa seed in the United States and several geographies outside the United States excluding the European Union, United Kingdom, Ukraine, Russia, and India. The new alfalfa seed will be sold as part of the S&W seed portfolio and branded IQA. This marks our first commercial trait license agreement.

- In the second quarter of 2020, our HOLL soybean was deemed a non-regulated article under the "Am I Regulated?" process by Biotechnology Regulatory Services of the Animal and Plant Health Inspection Service, an agency of the United States Department of Agriculture. This product represents our second-generation high oleic soybean.

- Also in the second quarter of 2020, we released our non-edited hemp germplasm by selling plants directly to a grower, driving several thousand dollars of revenue. This project leveraged our plant breeding expertise to quickly purify and stabilize key varieties of a partner's germplasm. While not significant to our financial results, this successful project enabled the gathering of valuable insights and data, and it is expected to serve as the base germplasm for the development of other hemp projects expected to launch beginning in 2023.

- During the first quarter of 2020, we were notified that a significant portion of our high fiber wheat plants were damaged in field trials due to improper aerial chemical applications by unaffiliated third parties. While we are continuing to assess the impact of this damage on the overall development process and timeline for this product candidate, it has delayed development by at least one year. This product candidate is currently in Phase 3 of our development pipeline. Our Phase 3 development activities in 2021 will include testing the product concept in field conditions, completing food application studies, and voluntarily consulting with FDA. Given the damage to our field trials described above, the timeline for the trait to be available

for a commercial launch is uncertain, but not expected before 2023. In line with our strategic advancement of the business model in high oleic soybeans, we plan to introduce our high fiber wheat innovation as a licensed trait through leading wheat ingredient companies.

We are an early-stage company and have incurred net losses since our inception. As of December 31, 2020, we had an accumulated deficit of $166.9 million. Our net losses were $44.8 million for the year ended December 31, 2020.

We expect 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. We expect that our expenses will be driven by:

- continuing to advance the R&D of our current and future products;
- conducting additional breeding and field trials of our current and future products;
- seeking regulatory and marketing approvals for our products;
- acquiring or in-licensing other products, technologies, germplasm, or other biological material;
- maintaining, protecting, expanding, and defending our intellectual property portfolio;
- making royalty and other payments under any in-license agreements;
- seeking to attract and retain new and existing skilled personnel;
- identifying strategic partners and licensees and negotiating agreements under the applicable go-to-market strategy;
- addressing the impacts of the ongoing COVID-19 pandemic, including implementing expense reduction efforts and seeking to bolster our liquidity position considering changing business needs and uncertain macro-economic conditions; and
- experiencing any delays or encountering issues with any of the above, including due to COVID-19 and its impacts.

OUR RELATIONSHIP WITH CELLECTIS AND COMPARABILITY OF OUR RESULTS

We are a majority-owned subsidiary of Cellectis. As of December 31, 2020, Cellectis owned 64.7 percent of our issued and outstanding common stock.

Our historical financial information reflects expense allocations for certain support functions that were provided on a centralized basis pursuant to a management services agreement. As a result, such historical financial information may not reflect the financial condition, results of operations or cash flows we would have achieved as a stand-alone company and not a subsidiary of Cellectis during such historical periods. Effective with the end of the third quarter of 2019 we have internalized nearly all the services Cellectis previously provided. Cellectis has also guaranteed the lease of our headquarters facility.

Cellectis has certain contractual rights as well as rights pursuant to our certificate of incorporation and bylaws, in each case, provided it maintains threshold beneficial ownership levels in our shares.

We hold an exclusive license from Cellectis 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

Revenues are recognized as described in our Accounting Policies in the Notes to Consolidated Financial Statements. For the year ended December 31, 2020, we recognized revenue from the sales of high oleic soybean grain, oil, and meal as well as sales of our first hemp product. Historically, we have not recognized revenue from seed transactions because of the grower’s commitment to sell their crop to us. We benefit from the cash upon payment and defer the net profit on the seed to inventory and recognize that benefit when the grower delivers grain to us. Beginning in 2021, we expect seed sales to result in revenue because we will not be buying back grain from growers.

Cost of Goods Sold and Inventory

Prior to 2019, our cost of goods sold represented immaterial costs associated with our out-licensing activities. Costs we incurred associated with the purchasing, storing, transporting, and processing grain and seed, net of proceeds of seed sales (Grain Costs), were expensed as R&D. Beginning in the first quarter of 2019, we began to capitalize all Grain Costs into inventory. For the year ended December 31, 2018, we incurred $3.3 million of Grain Costs that were expensed as R&D. These amounts affect the year-over-year comparability of costs of goods sold, gross margins, and R&D expenses.

Cost of goods sold also includes crush and refining losses that are expensed as incurred since they do not add to the value of the finished products. All other grain and risk management costs, net of the benefit from our seed activity, are capitalized to inventory and relieved to cost of goods sold as the high oleic soybean grain, oil and meal is sold. Cost of goods sold also includes any gains and losses on commodity derivative contracts to hedge fixed price grain inventories and Forward Purchase Contracts. Any valuation adjustments to inventory are recognized as incurred.

Research and Development Expense

R&D expenses consist of the costs of performing activities to discover and develop products and advance our intellectual property. We recognize R&D expenses as they are incurred. Prior to commercialization of our high oleic soybean products in early 2019, we also reported Grain Costs as R&D expenses.

Excluding the Grain Costs mentioned above, our R&D expenses consist primarily of employee-related expenses for personnel who research and develop our product candidates, fees for contractors who support product development and breeding activities, expenses for trait validation, purchasing material and supplies for our laboratories, licensing, an allocation of facility and information technology expenses, and other costs associated with owning and operating our own laboratories. R&D expenses also include costs to write and support the research for filing patents.

Our R&D efforts are central to our business and account for a significant portion of our operating expenses, and as a result, we expect mid-single digit growth in these cash expenses over time.

Selling and Supply Chain Expense

Selling and Supply Chain (S&SC) expenses consist primarily of employee-related expenses for selling our products, acreage acquisition, managing the supply chain, and business development, as well as costs to market our products and an allocation of facility and information technology expenses. In 2020, we made significant staffing adjustments as part of the change in our soybean go-to-market strategy, including adjustments related to soybean processing and product sales.

Following these adjustments, we expect our S&SC expenses will decrease significantly from 2020 to 2021, and then expect low-single digit growth in these cash expenses over time.

General and Administrative Expense

General and administrative (G&A) expenses consist primarily of employee-related expenses for our executive, legal, intellectual property, information technology, finance, and human resources functions. Other G&A expenses include facility and information technology expenses not otherwise allocated to R&D or S&SC expenses, professional fees for auditing, tax and legal services, expenses associated with maintaining patents, consulting costs and other costs of our information systems.

We expect low-single digit growth in these cash expenses over time as we believe we have the necessary foundation to grow and scale up our business.

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, and interest expense on our financing lease obligations. It is also driven by balances, yields, and timing of financing and other capital raising activities.

Non-operating expenses

Non-operating expenses are expenses that are not directly related to our ongoing operations and are primarily comprised of gains and losses from foreign exchange-related transactions and disposals of land, buildings, and equipment.

Anticipated Changes Between Revenues and Costs

As we execute upon our streamlined business model with differentiated go-to-market strategies, we expect the composition of our revenues and costs to evolve. Future cash and revenue-generating opportunities are expected to primarily arise from seed sales, trait development and licensing activities, and licensing arrangements. Under trait development and licensing activities, revenues are expected to arise from up-front, annual or milestone, and royalty payments upon the licensees' commercial sale of products. Under licensing arrangements, revenues are expected to arise from up-front, annual and royalty payments upon the licensees' commercial sale of products.

Because our strategy is based on focusing on our core strengths in research and development, gene editing, and trait development, we expect R&D expenses to be the primary area of increase in our expenses. At the same time, because our streamlined business model relies on third parties assuming responsibility for agronomy infrastructure, product management, and commercialization, we expect that S&SC expense will decline as the new models are fully implemented.

Recent Developments – COVID-19 Update

As previously reported, our operations in Minnesota are classified as critical sector work under the State of Minnesota's COVID-19 executive orders. Accordingly, most of our laboratory workers have continued to work onsite at our headquarters throughout the pandemic, and our R&D programs and seed distribution activities have not experienced material delays. In accordance with our COVID-19 Preparedness Plan, Minnesota executive order requirements, and CDC guidelines, we have implemented health and safety measures for the protection of our onsite workers, have maintained remote work arrangements for our non-laboratory personnel and have implemented, as necessary, appropriate self-quarantine precautions for potentially affected laboratory personnel.

During 2020, supply chain disruptions did not have a material impact on our operations. however, a resurgence or prolonging of the COVID-19 pandemic, governmental response measures, and resulting disruptions could rapidly offset such improvements. Moreover, the effects of the COVID-19 pandemic on the financial markets remain substantial and broader economic uncertainties persist, which may make obtaining capital challenging and have exacerbated the risk that such capital, if available, may not be available on terms acceptable to us. There continues to be significant uncertainty relating to the COVID-19 pandemic and its impact, and many factors could affect our results and operations, including, but not limited to, those discussed under the caption "Risk Factors" in the reports we file with the SEC.

RESULTS OF OPERATIONS FOR YEAR ENDED DECEMBER 31, 2020 COMPARED TO THE YEAR ENDED DECEMBER 31, 2019

During 2020 we purchased soybeans and then either further processed them and sold the resulting oil and meal or, following our announcement in August 2020 to move our soybean go-to-market strategy to seed sales, sold grain outright. As of the end of the year we had sold all our 2019 grain and nearly all of the grain delivered to us at harvest in 2020. As of December 31, 2020, our receivables were from two of the world's largest soybean processors and nearly all were collected shortly after year-end. We have sold all our soybean meal and oil and have exited nearly all of our soybean transportation and processing agreements. We will purchase the remainder of the 2020 harvest between January 1, 2021 and August 31, 2021. As we announced in December 2020, ADM has committed to purchase over four million bushels of our grain, which includes all the 2020 crop. We expect to sell that grain throughout 2021. We expect to sell the remaining grain to ADM at market prices, and as a result, we will continue to hedge our fixed price grain inventories and fixed price Forward Purchase Contracts to mitigate the risk changing market prices may have on our margins. In the fourth quarter of 2020, our gross margins and adjusted gross margins (a non-GAAP measure) were negative 47 percent and negative 30 percent, respectively, which reflects our current business strategy and go-to-market strategies.

The following discussion of results of operations for the year ended December 31, 2020 compared to the year ended December 31, 2019 should be read together with "—Financial Operations Overview—Anticipated Changes between Revenues and Costs."

A summary of our results of operations for the years ended December 31, 2020 and 2019 follows:

	Year Ended December 31,			
	2020	**2019**	**$ Change**	**% Change**
	(In thousands, except percentage values)			
Revenue	**$ 23,851**	$ 7,296	$ 16,555	226.9%
Cost of goods sold	**35,127**	9,280	25,847	278.5%
Gross margin	**(11,276)**	(1,984)	(9,292)	468.3%
Research and development expense	**11,082**	12,213	(1,131)	(9.3)%
Selling and supply chain expense	**4,380**	5,172	(792)	(15.3)%
General and administrative expense	**16,157**	18,966	(2,809)	(14.8)%
Management fees	**252**	1,338	(1,086)	(81.2)%
Restructuring costs	**685**	—	685	100.0%
Interest, net	**(878)**	110	(988)	(898.2)%
Non-operating expenses	**(126)**	(49)	(77)	157.1%
Net loss	**$ (44,836)**	$ (39,612)	$ (5,224)	13.2%
Basic and diluted net loss per share	**$ (1.32)**	$ (1.21)	$ (0.11)	9.1%
Adjusted EBITDA [1]	**$ (31,641)**	$ (29,792)	$ (1,849)	6.2%

[1] See "Use of Non-GAAP Financial Information" for a discussion of Adjusted EBITDA and a reconciliation of Adjusted EBITDA to Net loss, the most comparable GAAP measure.

Revenue

Revenue was $23.9 million in 2020, an increase of $16.6 million, or 227 percent, from 2019, driven by the sale of a substantial portion of the 2020 grain crop and the completion of the sale of all soybean oil and meal during 2020. The sales of grain were $13.0 million and included all remaining 2019 grain and seed and represent approximately 40 percent of the 2020 grain crop.

Cost of Goods Sold

Cost of goods sold were $35.1 million in 2020, an increase of $25.8 million from 2019, driven by the higher volume of product sold, higher average prices paid for grain as a result of increases in commodity market prices for soybeans and lower costs associated with products sold in 2019 because $3.3 million of Grain Costs were previously expensed as R&D, $2.8 million of unrealized commodity derivative losses from hedging contracts sold to convert our fixed price grain inventory and fixed price Forward Purchase Contracts to floating prices to link them to market, consistent with how we expect to sell the grain, and a $1.3 million increase in net realizable value adjustments to period-end inventories including write-downs of excess seed produced for 2020 plantings. These increases were partially offset by the benefits resulting from the advancement of our soybean product line go-to-market strategy.

Gross Margin

Gross margin was a negative $11.3 million, or negative 47 percent, in 2020, a decrease of $9.3 million or 2,008 basis points from 2019, driven by the higher volume of product sold, the impact of lower costs associated with products sold in 2019 because $3.3 million of Grain Costs were previously expensed as R&D, $2.8 million of unrealized commodity derivative losses from futures contracts sold to hedge our fixed price grain inventory and fixed price Forward Purchase Contracts, and a $1.3 million increase in our net realizable value adjustment to period-end inventories including write-downs of excess seed produced for 2020 plantings. These increases were partially offset by higher selling prices and benefits from the advancement of our soybean product line go-to-market strategy.

Adjusted gross margin, a non-GAAP measure, was a negative $7.2 million, or negative 30 percent, in 2020, compared to negative $4.5 million, or negative 61 percent, in 2019. The improvement on a percentage basis was driven by savings from the advancement of our soybean product line go-to-market strategy.

See below under the heading "Use of Non-GAAP Financial Information" for a discussion of adjusted gross margin and a reconciliation of gross margin, the most comparable GAAP measure, to adjusted gross margin.

Research and Development Expense

R&D expenses were $11.1 million in 2020, a decrease of $1.1 million from 2019, driven by lower non-cash stock compensation expense of $1.1 million primarily from a recapture of non-cash stock compensation expense from the forfeiture and modification of unvested stock awards and lower stock award values. The same period in 2019 also included $0.4 million of expense to write off research and development tax credits that were no longer realizable.

Selling and Supply Chain Expense

S&SC expenses were $4.4 million in 2020, a decrease of $0.8 million from 2019, driven by a decrease in non-cash stock compensation expense of $1.0 million primarily from a recapture of non-cash stock compensation expense from the forfeiture of unvested stock awards, lower stock award values, and lower marketing and travel expenses, partially offset by additional personnel costs.

General and Administrative Expense

G&A expenses were $16.2 million, a decrease of $2.8 million from 2019, driven by a decrease in non-cash stock compensation of $1.4 million as a result of fewer stock awards issued and lower stock award values, and lower personnel costs of $1.4 million, partially offset by an increase in insurance costs.

Management Fees

Management fees were $0.3 million in 2020, a decrease of $1.1 million from 2019, as we previously internalized certain services provided by Cellectis, including investor relations, information technology, human resources, legal, and communications.

Restructuring Costs

Restructuring costs were $0.7 million in 2020 and reflect the impact of severance and other expenses resulting from the action we initiated in August 2020 to advance our soybean product line go-to-market strategy. There were no restructuring costs in 2019.

Interest, net

Interest, net was $0.9 million expense, a decrease of $1.0 million from 2019, driven by lower yields and lower cash balances.

Net Loss

Net loss was $44.8 million in 2020, an increase of $5.2 million from 2019, driven by a $9.3 million decrease in gross margin following the launch of our high oleic soybean products and the higher costs we experienced during the product's proof of concept period, a $1.1 million decrease in management fees, a $1.0 decrease in interest, net, and $0.7 million of restructuring costs, partially offset by $4.2 million of lower non-cash stock compensation expenses as a result of a recapture of non-cash stock compensation expense from the forfeiture and modification of unvested stock awards, as well as the impact from fewer stock awards issued and lower stock award values, and a $0.6 million decrease in Section 16 officer transition expenses. The same period in 2019 also included $0.4 million of expense to write off R&D tax credits that were no longer realizable.

Adjusted net loss, a non-GAAP measure, was $40.3 million in 2020, a decrease of $0.1 million from 2019.

See below under the heading "Use of Non-GAAP Financial Information" for a discussion of adjusted net loss and a reconciliation of net loss, the most comparable GAAP measure, to adjusted net loss.

Net Loss Per Share

Net loss per share was $1.32 in 2020, an increase of $0.11 per share from 2019, driven by the change in net loss.

Adjusted net loss per share, a non-GAAP measure, was $1.19 in 2020, an improvement of $0.04 per share from 2019, driven by the change in adjusted net loss.

See below under the heading "Use of Non-GAAP Financial Information" for a discussion of adjusted net loss per share and a reconciliation of net loss per share, the most comparable GAAP measure, to adjusted net loss per share.

Adjusted EBITDA

Adjusted EBITDA, a non-GAAP measure, was a loss of $31.6 million in 2020, an increase of $1.8 million from 2019, driven by the changes in expenses.

See below under the heading "Use of Non-GAAP Financial Information" for a discussion of adjusted EBITDA and a reconciliation of net loss, the most comparable GAAP measure, to adjusted EBIDA.

RESULTS OF OPERATIONS FOR YEAR ENDED DECEMBER 31, 2019 COMPARED TO THE YEAR ENDED DECEMBER 31, 2018

	Year Ended December 31,			
	2019	**2018**	**$ Change**	**% Change**
	(In thousands, except percentage values)			
Revenue	**$ 7,296**	$ 236	7,060	2,991.5%
Cost of goods sold	**9,280**	—	9,280	100.0%
Gross margin	**(1,984)**	236	(2,220)	(940.7)%
Research and development expense	**12,213**	10,358	1,855	17.9%
Selling and supply chain expense	**5,172**	2,352	2,820	119.9%
General and administrative expense	**18,966**	13,356	5,610	42.0%
Management fees	**1,338**	2,285	(947)	(41.4)%
Interest, net	**110**	264	(154)	(58.3)%
Non-operating expenses	**(49)**	(46)	(3)	6.5%
Net loss	**$ (39,612)**	$ (27,897)	$ (11,715)	42.0%
Basic and diluted net loss per share	**$ (1.21)**	$ (0.91)	$ (0.30)	33.0%
Adjusted EBITDA	**$ (29,792)**	$ (18,810)	$ (10,982)	58.4%

Revenue

Revenue was $7.3 million in 2019, an increase of $7.1 million from 2018, entirely from increased sales volumes of our high oleic soybean oil and soybean meal following the commercialization of these products in early 2019. During 2019, we generated $1.7 million of high oleic soybean oil revenue. We sold all our high oleic soybean meal production in the year, totaling $5.6 million in revenue.

Cost of Goods Sold

Cost of goods sold was $9.3 million in 2019, an increase of $9.3 million from 2018, reflecting the cost of product sold in the period, and a $0.9 million valuation reserve against our inventories.

Gross Margin

Gross margin was negative $2.0 million or negative 27 percent in 2019, a decrease of $2.2 million from 2018, reflecting the higher costs we have experienced at this early stage of commercialization of our high oleic soybean products.

Adjusted gross margin, a non-GAAP measure, was negative $4.5 million, or negative 61 percent, compared to negative $2.0 million, or negative 100 percent, in 2018. This was driven by the impact of lower costs associated with products sold in 2019 because $3.3 million of Grain Costs were previously expensed in R&D.

See below under the heading "Use of Non-GAAP Financial Information" for a discussion of adjusted gross margin and a reconciliation of gross margin, the most comparable GAAP measure, to adjusted gross margin.

Research and Development Expense

R&D expenses were $12.2 million in 2019, an increase of $1.9 million from 2018, driven by $1.6 million of higher non-cash stock compensation expenses, $1.4 million of additional personnel costs, $0.7 million of incremental lab supplies and outsourcing costs and $0.6 million from the reversal of payroll tax benefits that are no longer realizable. These increases were partially offset by a $3.3 million decrease in Grain Costs expensed as R&D in 2018.

Selling and Supply Chain Expense

S&SC expenses were $5.2 million in 2019, an increase of $2.8 million from 2018, driven by $1.2 million of additional personnel costs, $0.9 million incremental allocated expenses for facilities and information technology expenses, and $0.4 million of higher non-cash stock compensation expenses, all the result of our commercialization and acreage expansion in 2019.

General and Administrative Expense

G&A expenses were $19.0 million in 2019, an increase of $5.6 million from 2018, driven by $2.9 million of higher non-cash stock compensation expenses, $2.6 million of additional personnel costs, and $1.0 million of incremental professional services expenses. The increases in personnel costs and professional services expenses are partially offset by the benefit of internalizing certain services previously provided by Cellectis which resulted in lower management fees.

Management Fees

Management fees were $1.3 million in 2019, a decline of $0.9 million from 2018, as we internalized certain services previously provided by Cellectis including investor relations, information technology, human resources, legal, and communications.

Interest, net

Interest, net was $0.1 million in 2019, a decrease of $0.2 million from 2018, driven by lower yields on investments, less cash to invest, and higher financing lease obligation balances.

Net Loss

Net loss was $39.6 million in 2019, an increase of $11.7 million from 2018, driven by $5.2 million of additional personnel costs, $4.9 million of higher non-cash stock compensation expenses and a $2.2 million negative change in gross margins following the launch of our soybean products, reflecting the early stage of commercialization of our business and the impact of lower costs associated with products sold in 2019 because $3.3 million of Grain Costs were previously expensed as R&D.

Adjusted net loss, a non-GAAP measure, was $40.5 million in 2019, a decrease of $16.5 million from 2018.

See below under the heading “Use of Non-GAAP Financial Information” for a discussion of adjusted net loss and a reconciliation of net loss, the most comparable GAAP measure, to adjusted net loss.

Net Loss Per Share

Net loss per share was $1.21 in 2019, an increase of $0.30 per share from 2018, driven by the change in net loss.

Adjusted net loss per share, a non-GAAP measure, was $1.23 in 2019, a decrease of $0.45 per share from 2018, driven by the change in adjusted net loss.

See below under the heading “Use of Non-GAAP Financial Information” for a discussion of adjusted net loss per share and a reconciliation of net loss per share, the most comparable GAAP measure, to adjusted net loss per share.

Adjusted EBITDA

Adjusted EBITDA, a non-GAAP measure, was $29.8 million in 2019, a decrease of $11.0 million from 2018, driven by the changes in R&D, S&SC and G&A expenses, and the increases in negative gross margins described above.

See below under the heading “Use of Non-GAAP Financial Information” for a discussion of adjusted EBITDA and a reconciliation of net loss, the most comparable GAAP measure, to adjusted EBIDA.

LIQUIDITY AND CAPITAL RESOURCES

Liquidity

Our primary liquidity source is our cash and cash equivalents, with additional liquidity accessible, subject to market conditions and other factors, from the capital markets.

On July 25, 2017, we completed our IPO of common stock. In the aggregate, we received net proceeds from the IPO of $58.0 million.

On May 22, 2018, we completed a follow-on offering of our common stock. In the aggregate, we received net proceeds from the follow-on offering of $57.0 million.

On October 20, 2020, we completed a follow-on offering of our common stock. In the aggregate, we received net proceeds from the follow-on offering of $14.0 million.

As of December 31, 2020, we had cash, cash equivalents, restricted cash, and short-term investments of $30.0 million. All these amounts are convertible to cash within 90 days except for $1.0 million of restricted cash associated with our financing leases. Current liabilities were $7.0 million at December 31, 2020. Accordingly, we have cash and cash equivalents sufficient to fund all short-term obligations as of that date.

Our liquidity funds our non-discretionary cash requirements and our discretionary spending. Working capital is our principal non-discretionary funding requirement. In addition, we have contractual obligations related to our recurring business operations, primarily related to lease obligations. Our principal discretionary cash spending includes capital expenditures.

Gene editing is a highly regulated activity, and we incur significant expense related to our monitoring of, and compliance with, applicable regulatory requirements in the United States. To the extent that we opportunistically pursue business arrangements that bring innovations developed for North America to new territories, we would be required to incur significant additional regulatory costs in order to comply with applicable regulatory requirements outside the United States.

We incurred losses from operations of $44.8 million for the year ended December 31, 2020, $39.6 million for the year ended December 31, 2019, and $27.9 million for the year ended December 31, 2018. As of December 31, 2020, we had an accumulated deficit of $166.9 million and expect to incur losses for the foreseeable future.

Cash Flows from Operating Activities

	Year Ended December 31,		
In Thousands	**2020**	**2019**	**2018**
Net loss	**$ (44,836)**	$ (39,612)	$ (27,897)
Depreciation and amortization expenses	**1,869**	1,607	1,081
Stock-based compensation	**4,971**	9,175	4,385
Changes in operating assets and liabilities	**(5,708)**	(1,551)	501
Other	**32**	(1,570)	1,728
Net cash used by operating activities	**$ (43,672)**	$ (31,951)	$ (20,202)

Net cash used by operating activities increased by $11.7 million in 2020, driven by the increase in our net loss of $5.2 million, lower non-cash stock compensation expenses of $4.2 million from the recapture of non-cash compensation expense from the forfeiture and modification of unvested stock awards which meant more of our net loss was driven by cash items, lower stock award values, and fewer stock awards granted, and an increase in cash flows used by operating assets and liabilities of $4.2 million, primarily from activity related to our soybean product line.

Net cash used by operating activities increased by $11.7 million in 2019 driven by the increase in our net loss of $11.7 million and a net decrease in cash flows provided by operating assets and liabilities of $5.4 million, primarily from higher inventories and accounts receivable following the commercialization of our high oleic soybean products earlier in 2019, and $1.6 million of cash payments made in 2019 to suppliers for services provided to us in 2018. These uses of cash were partially offset by additional non-cash stock compensation expenses of $4.6 million.

We expect cash used by operating activities in 2021 to be lower than 2020 driven by a decrease in net loss and a reduction in net working capital in our soybean product line as a result of the advancement of our go-to-market strategy to a seed sale approach.

Cash Flows from Investing Activities

	Year Ended December 31,		
In Thousands	**2020**	**2019**	**2018**
Purchases of land, buildings, and equipment	**$ (1,786)**	$ (2,969)	$ (1,847)
Purchases of short-term investments	**(11,698)**	$ —	$ —
Net cash used by investing activities	**$ (13,484)**	$ (2,969)	$ (1,847)

Net cash used by investing activities increased by $10.5 million in 2020, driven by our purchases of short-term investments as part of our credit risk diversification strategy.

Net cash used by investing activities increased by $1.1 million in 2019, driven by purchases of laboratory equipment following the build out of our new headquarters facility that was completed in 2018 as well as for equipment to support the expansion of our R&D pipeline.

We expect net cash used for purchases of land, buildings, and equipment in 2021 to be comparable to 2020, and cash used for purchases of short-term investments to decrease in 2021 as we continue to use cash to fund operations.

Cash Flows from Financing Activities

	Year Ended December 31,		
In Thousands	**2020**	**2019**	**2018**
Proceeds from common stock issuance	**$ 15,000**	$ —	$ 57,706
Costs incurred related to the issuance of stock	**(963)**	—	(665)
Proceeds from Payroll Protection Program loan	**1,518**	—	—
Repayments of financing lease obligations	**(360)**	(275)	—
Proceeds from the exercise of stock options	**212**	344	2,622
Costs incurred related to shares withheld for net settlement	**—**	(813)	(230)
Proceeds from sale and leaseback of land, buildings, and equipment	**—**	414	1,240
Net cash provided (used) by financing activities	**$ 15,407**	$ (330)	$ 60,673

Net cash provided (used) by financing activities increased by $15.7 million, driven by $14.0 million of net proceeds from our follow-on common stock offering and $1.5 million of Paycheck Protection Program loan proceeds.

Net cash provided (used) by financing activities decreased by $61.0 million in 2019 reflecting the net proceeds from our follow-on offering of common stock in 2018, as well as lower proceeds from stock option exercises of $2.3 million. We also had $0.8 million less proceeds from the sale and leaseback of equipment, and we also made $0.6 million more payments to satisfy statutory income tax withholding requirements relating to the net share settlement upon the vesting of restricted stock units in 2019.

We expect net cash provided by financing activities in 2021 to be similar to 2020, excluding the impact of the 2020 capital raise. To fund our longer-term capital and liquidity needs, we expect we will need to secure additional capital in addition to potential revenue generation as we execute upon our go-to-market strategies.

Capital Resources

Operating Capital Requirements

Considering factors such as cash raised in October 2020, our anticipated cash burn rate, our anticipated expense reduction efforts, our expectations regarding an effective advancement of our go-to-market soybean strategy, and anticipated cash receipts from our product development and technology licensing efforts with partners, we believe our cash, cash equivalents, short-term investments, and restricted cash as of December 31, 2020, will be enough to fund our operations for at least the next twelve months and into the second half of 2022.

We anticipate that we will continue to generate losses for the next several years before revenue is enough to support our operating capital requirements. Until we can generate substantial cash flow, we expect to finance a portion of future cash needs through cash on hand, public or private equity or debt financings, government or other third-party funding, and commercialization activities, which may result in various types of revenue streams from seed sales and future development agreements, trait licenses, and technology licensees, including upfront and milestone payments, annual license fees, and royalties. However, additional capital may not be available on reasonable terms, if at all. If we are unable to raise additional capital in enough amounts or on terms acceptable to us, we may have to significantly delay, scale back or discontinue the development or commercialization of our activities. Failure to receive additional funding could cause us to cease operations, in part or in full. If we raise additional funds through the issuance of additional debt or equity securities, it could result in dilution to our existing stockholders and increased fixed payment obligations, and these securities may have rights senior to those of our shares of common stock. Any of these events could significantly harm our business, financial condition, and prospects.

Our financing needs are subject to change depending on, among other things, the success of our product development efforts, the effective execution of our streamlined business model, our revenue, and our efforts to effectively manage expenses. The effects of the COVID-19 pandemic on the financial markets and broader economic uncertainties may make obtaining capital through equity or debt financings more challenging and have exacerbated the risk that such capital, if available, may not be available on terms acceptable to us.

In response to current economic conditions, we have postponed non-essential capital expenditures and undertaken other efficiency efforts. In addition, the headcount reductions undertaken in connection with our business model advancement will contribute to our cost-saving initiatives. We will continue to review our operating expenses and to take actions that support efficient operations, financial flexibility, and optimized liquidity.

CONTRACTUAL OBLIGATIONS, COMMITMENTS AND CONTINGENCIES

At December 31, 2020, we have the following contractual obligations:

- liability for minimum lease payments for financing leases due within the next five years in an aggregate amount of $8.0 million, of which $1.8 million is payable in 2021;
- liability for minimum lease payments for operating leases due within the next five years in an aggregate amount of $0.1 million, of which an immaterial amount is payable in 2021;
- Forward Purchase Contracts requiring us to make payments over the next five years in an aggregate amount of $21.2 million, of which all is payable in 2021.

On February 19, 2021 Yves Ribeill, Ph.D., Chair of the Board of Directors of Calyxt, Inc., was appointed as the Executive Chair of the Board of Directors and in that capacity, will serve as Calyxt's principal executive officer until the appointment of a successor to James Blome, our former Chief Executive Officer. Pursuant to his employment contract, Mr. Blome is entitled to compensation and benefits as part of this termination without cause, and in the first quarter of 2021 we expect to record up to $2.3 million of cash expense for separation-related payments. The cash payments to Mr. Blome will be made over a period of 24 months from the date his separation agreement is executed, which has not occurred as of the date of this Annual Report, but is expect on or before March 12, 2021.

Forward Purchase Contracts

We enter into seed and grain production agreements (Forward Purchase Contracts) with seed producers and growers.

The seed contracts often require us to pay prices for the seed produced at commodity futures market prices plus a premium. The seed growers have the option to fix their price with us throughout the term of the agreement. We pay 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 require us to pay prices for all grain produced at commodity futures market prices plus a premium. The grain growers have the option to fix their price with us throughout the term of the agreement. The grain grower contracts allow for delivery of grain to us at harvest if so specified when the agreement is executed, otherwise delivery occurs on a date that we elect through August 31 of the following year. We pay for grain within a contractually determined number of days following delivery and final pricing.

In all periods prior to January 1, 2019, we considered Forward Purchase Contracts to be derivatives and recorded the contracts at fair market value with changes in value reflected in earnings as R&D expense. Effective January 1, 2019, we designated all Forward Purchase Contracts as normal purchases and as a result no longer consider these agreements to be derivatives. As of that date, any mark-to-market gains or losses associated with those contracts were fixed and were reflected in inventory upon our purchase of the underlying grain.

Sale-Leaseback of Headquarters and Lab Facility

In September 2017 we consummated a sale-leaseback transaction with a third party for our corporate headquarters and lab facility.

Our headquarters facility is comprised of a 40,000 square-foot office and lab building, greenhouses, and outdoor research plots. We are 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 us occupying the property at the time of extension. In 2017 we received $7.0 million in connection with the sale of the land and uncompleted facility.

The lease commenced in May 2018. Under the lease, we pay 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, we pay an annual base rent of $1.4 million.

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

Concurrent with entering the lease, Cellectis guaranteed all our obligations under the lease agreement. Cellectis' guarantee of our obligations will terminate at the end of the second consecutive calendar year in which our tangible net worth exceeds $300 million, as determined in accordance with generally accepted accounting principles. At a point when Cellectis owns 50 percent or less of our outstanding common stock, we have agreed to indemnify Cellectis for any obligations incurred by Cellectis under its guaranty of our obligations under the lease.

Sale-Leaseback of Equipment

We also have an equipment financing arrangement that is considered a financing lease. This arrangement has a term of four years for each draw. We were 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, 2020, this restricted cash totaled $1.0 million. We have the option to request the return of excess collateral annually in December.

CRITICAL ACCOUNTING ESTIMATES

The accompanying discussion and analysis of our financial condition and results of operations are based upon our 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 us to make estimates, assumptions and judgments that affect the reported amounts in our consolidated financial statements and accompanying notes. We base our estimates on historical experience and on various other assumptions that we believe 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. We believe the following policies to be the most critical to understanding our financial condition and results of operations because they require us to make 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 us to use judgments and assumptions that are likely to have a material impact on our consolidated financial statements. We estimate the fair value of each option on the grant date, or other measurement dates if applicable, using a Black-Scholes option-pricing model, which requires us to make predictive assumptions regarding employee exercise behavior, future stock price volatility, and dividend yield.

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

	2020	2019	2018
Expected term (in years)	**6.0 - 10**	6.8 - 10	5.6 - 10
Expected volatility	**77.4% - 81.2%**	52.6% - 78.9%	40.9% - 57.2%
Risk-free interest rate	**.3% - 1.7%**	1.7% - 2.5%	2.2% - 3.0%

Our expected term represents the period that options granted are expected to be outstanding determined using the simplified 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. We estimate our future stock price volatility using the historical volatility of comparable public companies over the expected term of the option. A one percentage point increase in our volatility assumption, leaving all other assumptions constant, would increase the grant date fair value by one percent. We estimate 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. We do not nor do we expect to pay dividends.

To the extent that actual outcomes differ from our assumptions, we are not required to true up grant-date fair value-based expense to final intrinsic values. Historical data has a significant bearing on our forward-looking assumptions. Significant variances between actual and predicted experience could lead to prospective revisions in our assumptions, which could then significantly impact the year-over-year comparability of stock-based compensation expense.

Net Realizable Value of Inventories

The determination of the net realizable value of our inventories is a critical accounting estimate that requires us to use judgments and assumptions that may have a material impact on our consolidated financial statements, especially at the early stage of commercialization for our soybean products. At each period-end, we make assumptions regarding projected selling prices for our products considering futures market prices for the underlying agricultural markets and our associated risk management strategies, our anticipated costs, and other factors that take into consideration our limited operating history and compare those prices to the current weighted average costs of our inventories. If our costs are higher than the projected selling prices, then a valuation adjustment is recorded. Changes in our projected selling prices and cost structure will affect the amount of these adjustments over time.

Income Tax Valuation Allowances

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

RECENTLY ISSUED ACCOUNTING PRONOUNCEMENTS

In February 2016, the FASB issued new accounting requirements for accounting, presentation, and classification of leases. This will result in most leases being capitalized as a right of use asset with a related liability on our balance sheets. Because we are an emerging growth company, the requirements of the new standard are effective for annual reporting periods beginning after December 15, 2021, and interim periods within those annual periods. We are in the process of analyzing the impact of this standard on our results of operations and financial position.

In June 2016, the FASB issued new accounting requirements on how to account for credit losses on most financial assets and certain other instruments. This will require the estimation of 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. We are in the process of analyzing the impact of this standard on our results of operations.

USE OF NON-GAAP FINANCIAL INFORMATION

To supplement our audited financial results prepared in accordance with GAAP, we have prepared certain non-GAAP measures that include or exclude special items. These non-GAAP measures are not meant to be considered in isolation or as a substitute for financial information presented in accordance with GAAP and should be viewed as supplemental and in addition to our financial information presented in accordance with GAAP. Investors are cautioned that there are material limitations associated with the use of non-GAAP financial measures. In addition, other companies may report similarly titled measures, but calculate them differently, which reduces their usefulness as a comparative measure. Management utilizes these non-GAAP metrics as performance measures in evaluating and making operational decisions regarding our business.

We present adjusted gross margin, a non-GAAP measure that includes the effects of Grain Costs expensed as R&D in a prior period, excludes the effects of commodity derivatives entered into to hedge the change in value of fixed price grain inventories and fixed price Forward Purchase Contracts as the expected impact from these contracts will be fully offset when the underlying grain is sold, and excludes the impact of any net realizable value adjustments to inventories occurring in the period, which would otherwise have been recorded as an adjustment to value in a prior period or would have been recorded in a future period as the underlying products are sold.

We provide in the table below a reconciliation of adjusted gross margin to gross margin, which is the most directly comparable GAAP financial measure. We provide adjusted gross margin because we believe that this non-GAAP financial metric provides investors with useful supplemental information at this stage of commercialization as the amounts being adjusted affect the period-to-period comparability of our gross margins and financial performance.

The table below presents a reconciliation of gross margin to adjusted gross margin:

	Year Ended December 31,		
In Thousands	**2020**	**2019**	**2018**
Gross margin (GAAP measure)	**$ (11,276)**	$ (1,984)	$ 236
Gross margin percentage	**(47%)**	(27%)	100%
Non-GAAP adjustments:			
Grain Costs expensed as R&D	**—**	(3,349)	—
Unrealized mark-to-market loss	**2,801**	**—**	**—**
Net realizable value adjustment to inventories	**1,322**	869	—
Adjusted gross margin	**$ (7,153)**	$ (4,464)	$ 236
Adjusted gross margin percentage	**(30%)**	(61%)	100%

We present adjusted net loss, a non-GAAP measure, and define it as net loss including the effects of Grain Costs expensed as R&D in a prior period, and excluding the effects of commodity derivatives entered into to hedge the change in value of fixed price grain inventories and fixed price Forward Purchase Contracts as the expected impact from these contracts will be fully offset when the underlying grain is sold, any net realizable value adjustments to inventories occurring in the period, which would otherwise have been recorded as an adjustment to value in a prior period or would have been recorded in a future period as the underlying products are sold, Section 16 officer transition expenses, R&D payroll tax credits that are no longer realizable, restructuring costs, the recapture of non-cash stock compensation expense from the forfeiture and modification of unvested stock awards associated with staffing adjustments made as part of the advancement of our soybean business model, and non-operating expenses, which are primarily gains and losses on foreign exchange transactions and losses on the disposals of land, building, and equipment.

We provide in the table below a reconciliation of adjusted net loss to net loss, which is the most directly comparable GAAP financial measure. We provide adjusted net loss because we believe that this non-GAAP financial metric provides investors with useful supplemental information at this stage of commercialization as the amounts being adjusted affect the period-to-period comparability of our net losses and financial performance.

The table below presents a reconciliation of net loss to adjusted net loss:

	Year Ended December 31,		
In Thousands	**2020**	**2019**	**2018**
Net loss (GAAP measure)	**$ (44,836)**	$ (39,612)	$ (27,897)
Non-GAAP adjustments:			
Grain Costs expensed as R&D	**—**	(3,349)	3,349
Unrealized mark-to-market loss	**2,801**	—	—
Net realizable value adjustment to inventories	**1,322**	869	—
Section 16 officer transition expenses	**543**	1,169	740
Research and development payroll tax credit	**—**	410	(250)
Restructuring costs	**685**	—	—
Recapture of non-cash stock compensation	**(981)**	—	—
Non-operating expenses	**126**	49	46
Adjusted net loss	**$ (40,340)**	$ (40,464)	$ (24,012)

We present adjusted net loss per share, a non-GAAP measure, and define it as net loss per share including the effects of Grain Costs expensed as R&D in a prior period, and excluding the effects of commodity derivatives entered into to hedge the change in value of fixed price grain inventories and fixed price Forward Purchase Contracts as the expected impact from these contracts will be fully offset when the underlying grain is sold, any net realizable value adjustments to inventories occurring in the period, which would otherwise have been recorded as an adjustment to value in a prior period or would have been recorded in a future period as the underlying products are sold, Section 16 officer transition expenses, R&D payroll tax credits that are no longer realizable, restructuring costs, the recapture of non-cash stock compensation expense from the forfeiture and modification of unvested stock awards associated with staffing adjustments made as part of the advancement of our soybean business model, and non-operating expenses, which are primarily gains and losses on foreign exchange transactions and losses on the disposals of land, buildings, and equipment.

We provide in the table below a reconciliation of adjusted net loss per share to net loss per share, which is the most directly comparable GAAP financial measure. We provide adjusted net loss per share because we believe that this non-GAAP financial metric provides investors with useful supplemental information at this stage of commercialization as the amounts being adjusted affect the period-to-period comparability of our net losses per share and financial performance.

The table below presents a reconciliation of net loss per share to adjusted net loss per share:

	Year Ended December 31,		
	2020	**2019**	**2018**
Net loss per share (GAAP measure)	**$ (1.32)**	$ (1.21)	$ (0.91)
Non-GAAP adjustments:			
Grain Costs expensed as R&D	**—**	(0.10)	0.11
Unrealized mark-to-market loss	**0.08**	—	—
Net realizable value adjustment to inventories	**0.04**	0.03	—
Section 16 officer transition expenses	**0.02**	0.04	0.02
Research and development payroll tax credit	**—**	0.01	—
Restructuring costs	**0.02**	—	—
Recapture of non-cash stock compensation	**(0.03)**	—	—
Non-operating expenses	**—**	—	—
Adjusted net loss per share	**$ (1.19)**	$ (1.23)	$ (0.78)

We present adjusted EBITDA, a non-GAAP measure and define it as net loss excluding interest, net, income tax expense, depreciation and amortization expenses, stock-based compensation expenses, the effects of commodity derivatives entered into to hedge the change in value of fixed price grain inventories and fixed price Forward Purchase Contracts as the expected impact from these contracts will be fully offset when the underlying grain is sold, any net realizable value adjustments to inventories occurring in the period, which would otherwise have been recorded as an adjustment to value in a prior period or would have been recorded in a future period as the underlying products are sold, Section 16 officer transition expenses, R&D payroll tax credits that are no longer realizable, restructuring costs, and non-operating expenses, which are primarily gains and losses on foreign exchange transactions and losses on the disposals of land, buildings, and equipment; and including the effects of Grain Costs expensed as R&D in a prior period.

We provide in the table below a reconciliation of adjusted EBITDA to net loss, which is the most directly comparable GAAP financial measure. Because adjusted EBITDA excludes non-cash items and discrete or infrequently occurring items, we believe that adjusted EBITDA provides investors with useful supplemental information about the operational performance of our business and facilitates comparison of our financial results between periods where certain items may vary significantly independent of our business performance.

The table below presents a reconciliation of net loss to adjusted EBITDA:

	Year Ended December 31,		
In Thousands	**2020**	**2019**	**2018**
Net loss (GAAP measure)	**$ (44,836)**	$ (39,612)	$ (27,897)
Non-GAAP adjustments:			
Interest, net	**878**	(110)	(264)
Depreciation and amortization expenses	**1,869**	1,607	1,081
Stock-based compensation expenses	**4,971**	9,175	4,385
Grain Costs expensed as R&D	**—**	(3,349)	3,349
Unrealized mark-to-market loss	**2,801**	—	—
Net realizable value adjustment to inventories	**1,322**	869	—
Section 16 officer transition expenses	**543**	1,169	740
Research and development payroll tax credit	**—**	410	(250)
Restructuring costs	**685**	—	—
Non-operating expenses	**126**	49	46
Adjusted EBITDA	**$ (31,641)**	$ (29,792)	$ (18,810)

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK.

Our primary exposure to market risk is commodity price sensitivity. Following our decision to advance our soybean go-to-market strategy in the third quarter of 2020, our exposure to changes in commodity prices changed significantly. We are now primarily susceptible to changes in commodity market prices that could impact the selling price for our grain inventories, which are carried at historical cost. Prior to our purchase, we also have market exposure associated with our fixed price Forward Purchase Contracts. In the normal course of business, we manage our exposure to changes in market prices by entering commodity hedges to convert fixed price grain inventories and fixed price Forward Purchase Contracts to floating market prices. By executing these hedging strategies, we can

closely match the expected economic terms of the grain sale with the market. In a rising market these positions will result in losses, and in a falling market these positions will result in gains once any losses, if any, are recaptured. At time of sale the gains or losses on the commodity derivatives will be realized and be fully offset by gains or losses on the grain inventories. Based on our positions as of December 31, 2020, a ten percent increase in commodity futures market prices would have a $1.9 million decrease in our financial condition, and a ten percent decrease in commodity futures market prices would have a $1.9 million increase in our financial condition.

We are also exposed to interest rate sensitivity on our investments, which are affected by changes in the general level of United States interest rates. However, because of the short-term nature of the duration of our portfolio and the low-risk profile of our investments, we believe an immediate ten percent change in market interest rates would not have a material impact on the fair market value of our investment portfolio or on our financial condition or results of operations.

We also have foreign exchange exposure from fluctuations in foreign currency exchange rates, primarily as a result of certain receivable and payable balances with Cellectis. The primary currency we have exposure to is the Euro. We believe an immediate ten percent change in foreign exchange rates would not have a material impact on our financial condition or results of operations.

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

We maintain disclosure controls and procedures that are designed to provide reasonable assurance that information required to be disclosed in our 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 our management, including our principal executive officer and principal financial officer, as appropriate, to allow timely decisions regarding required disclosure.

.

Under the supervision of our principal executive officer and principal financial officer, we evaluated the effectiveness of our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) of the Exchange Act) as of December 31, 2020. Based on that evaluation, as of December 31, 2020, our principal executive officer and principal financial officer have concluded that our disclosure controls and procedures were effective.

Management's Annual Report on Internal Control Over Financial Reporting

Our 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. Our management, including our principal executive officer and principal financial officer, conducted an evaluation of the effectiveness of our internal control 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, our management concluded that our internal control over financial reporting was effective as of December 31, 2020.

Inherent Limitations on Controls and Procedures

Our management, including the principal executive officer and principal financial officer, does not expect that our disclosure controls and procedures and our 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 our 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 our disclosure controls and procedures and our 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 our 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, 2020, that has materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Item 9B. Other Information

None.

PART III

Item 10. Directors, Executive Officers and Corporate Governance

The information required by this item concerning our directors, executive officers, and corporate governance matters is incorporated by reference in our 2021 Proxy Statement.

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

Item 11. Executive Compensation

The information required by this item regarding executive compensation is incorporated by reference in our 2021 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 our 2021 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 in our 2021 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 in our 2021 Proxy Statement.

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
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)
10.1	Management Services Agreement between Cellectis S.A., Cellectis, 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 Cellectis 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 Cellectis S.A., Cellectis, Inc., Cellectis 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 Cellectis 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 Cellectis 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 Cellectis 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. Cellectis 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 (incorporated by reference to Exhibit 10.20 of the Company's Registration Statement on Form S-1/A filed with the SEC on July 3, 2017)
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 (incorporated by reference to Exhibit 10.22 of the Company's Form 10-Q for the quarter ended June 30, 2020)

Exhibit Number	Description
10.19†	Form of Restrictive Stock Unit Agreement pursuant to the Calyxt, Inc. 2017 Omnibus Incentive Plan (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†(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)
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 Cellectis 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†	Employment Agreement between Calyxt, Inc. and Mr. James A. Blome, dated September 17, 2018 (incorporated by reference to Exhibit 10.1 of the Company's Current Report on Form 8-K filed with the SEC on September 21, 2018)
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†	Annual Incentive Payment Criteria for Executive Officers (incorporated by reference to Exhibit 10.1 of the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2020)
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
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, 2020 has been formatted in Inline IXBRL

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.

SIGNATURES

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 04, 2021

By: /s/ Yves Ribeill
Name: Yves Ribeill
Title: Executive Chairman

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 Yves Ribeill, 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.

Signature	Title	Date
/s/ Yves Ribeill Yves Ribeill	Executive Chairman (principal executive officer)	March 04, 2021
/s/ William F. Koschak William F. Koschak	Chief Financial Officer (principal financial and accounting officer)	March 04, 2021
/s/ Philippe Dumont Philippe Dumont	Director	March 04, 2021
/s/ Anna Ewa Kozicz-Stankiewicz Anna Ewa Kozicz-Stankiewicz	Director	March 04, 2021
/s/ Christopher Neugent Christopher Neugent	Director	March 04, 2021
/s/ Jonathan Fassberg Jonathan Fassberg	Director	March 04, 2021
/s/ Kimberly Nelson Kimberly Nelson	Director	March 04, 2021
/s/ Laurent Arthaud Laurent Arthaud	Director	March 04, 2021

CALYXT, INC.
INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

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, 2020 and 2019, the related consolidated statements of operations, stockholders' equity, and cash flows for each of the three years in the period ended December 31, 2020, 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, 2020 and 2019, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2020, in conformity with U.S. generally accepted accounting principles.

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.

/s/ Ernst & Young LLP

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

Minneapolis, Minnesota
March 4, 2021

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

	December 31,	
	2020	**2019**
Assets		
Current assets:		
Cash and cash equivalents	**$ 17,299**	$ 58,610
Short-term investments	**11,698**	—
Restricted cash	**393**	388
Accounts receivable	**4,887**	1,122
Inventory	**1,383**	2,594
Prepaid expenses and other current assets	**3,930**	808
Total current assets	**39,590**	63,522
Non-current restricted cash	**597**	1,040
Land, buildings, and equipment	**22,860**	23,212
Other non-current assets	**280**	324
Total assets	**$ 63,327**	$ 88,098
Liabilities and stockholders' equity		
Current liabilities:		
Accounts payable	**$ 929**	$ 1,077
Accrued expenses	**2,891**	2,544
Accrued compensation	**1,950**	2,181
Due to related parties	**766**	977
Current portion of financing lease obligations	**364**	356
Other current liabilities	**45**	61
Total current liabilities	**6,945**	7,196
Financing lease obligations	**17,876**	18,244
Long-term debt	**1,518**	—
Other non-current liabilities	**113**	150
Total liabilities	**26,452**	25,590
Stockholders' equity:		
Common stock, $0.0001 par value; 275,000,000 shares authorized; 37,165,196 shares issued and 37,065,044 shares outstanding as of December 31, 2020 and 33,033,689 shares issued and 32,951,329 shares outstanding as of December 31, 2019	**4**	3
Additional paid-in capital	**204,807**	185,588
Common stock in treasury, at cost, 100,152 shares as of December 31, 2020 and 82,360 as of December 31, 2019	**(1,043)**	(1,043)
Accumulated deficit	**(166,893)**	(122,057)
Accumulated other comprehensive income	**—**	17
Total stockholders' equity	**36,875**	62,508
Total liabilities and stockholders' equity	**$ 63,327**	$ 88,098

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,		
	2020	**2019**	**2018**
Revenue	**$ 23,851**	$ 7,296	$ 236
Costs of goods sold	**35,127**	9,280	—
Gross margin	**(11,276)**	(1,984)	236
Operating expenses:			
Research and development	**11,082**	12,213	10,358
Selling and supply chain	**4,380**	5,172	2,352
General and administrative	**16,157**	18,966	13,356
Management fees	**252**	1,338	2,285
Restructuring costs	**685**	—	—
Total operating expenses	**32,556**	37,689	28,351
Loss from operations	**(43,832)**	(39,673)	(28,115)
Interest, net	**(878)**	110	264
Non-operating expenses	**(126)**	(49)	(46)
Loss before income taxes	**(44,836)**	(39,612)	(27,897)
Income taxes	**—**	—	—
Net loss	**$ (44,836)**	$ (39,612)	$ (27,897)
Basic and diluted net loss per share	**$ (1.32)**	$ (1.21)	$ (0.91)
Weighted average shares outstanding - basic and diluted	**33,882,406**	32,805,684	30,683,421

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, 2017	27,718,780	$ 3	$ 112,021	$ —	$ (54,548)	$ —	$ 57,476
Net loss	—	—	—	—	(27,897)	—	(27,897)
Stock-based compensation	888,149	—	7,007	—	—	—	7,007
Issuance of common stock	4,057,500	—	57,041	—	—	—	57,041
Shares withheld for net share settlement	(15,536)	—	—	(230)	—	—	(230)
Balances at December 31, 2018	32,648,893	3	176,069	(230)	(82,445)	—	93,397
Net loss		—		—	(39,612)	—	(39,612)
Stock-based compensation	369,260	—	9,175	—	—	—	9,175
Issuance of common stock		—	344	—	—	—	344
Shares withheld for net share settlement	(66,824)	—	—	(813)	—	—	(813)
Other comprehensive income	—	—	—	—	—	17	17
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	381,507	—	4,971	—	—	—	4,971
Issuance of common stock	3,750,000	1	14,248	—	—	—	14,249
Shares withheld for net share settlement	(17,792)	—	—	—	—	—	—
Other comprehensive loss	—	—	—	—	—	(17)	(17)
Balances at December 31, 2020	**37,065,044**	**$ 4**	**$ 204,807**	**$ (1,043)**	**$ (166,893)**	**$ —**	**$ 36,875**

See accompanying notes to the Consolidated Financial Statements.

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

	Year Ended December 31,		
	2020	**2019**	**2018**
Operating activities			
Net loss	**$ (44,836)**	$ (39,612)	$ (27,897)
Adjustments to reconcile net loss to net cash used by operating activities:			
Depreciation and amortization	**1,869**	1,607	1,081
Stock-based compensation	**4,971**	9,175	4,385
Changes in operating assets and liabilities:			
Accounts receivable	**(3,765)**	(1,122)	—
Due to/from related parties	**(211)**	(882)	676
Inventory	**1,211**	(2,594)	—
Prepaid expenses and other current assets	**(3,122)**	493	(726)
Accounts payable	**(148)**	259	(118)
Accrued expenses	**347**	537	985
Accrued compensation	**(231)**	876	360
Other current liabilities	**(70)**	(670)	940
Other	**313**	(18)	112
Net cash used by operating activities	**(43,672)**	(31,951)	(20,202)
Investing activities			
Purchases of land, buildings, and equipment	**(1,786)**	(2,969)	(1,847)
Short-term investments	**(11,698)**	—	—
Net cash used by investing activities	**(13,484)**	(2,969)	(1,847)
Financing activities			
Proceeds from common stock issuance	**15,000**	—	57,706
Costs incurred related to the issuance of stock	**(963)**	—	(665)
Proceeds from Payroll Protection Program loan	**1,518**	—	—
Repayments of financing lease obligations	**(360)**	(275)	—
Proceeds from the exercise of stock options	**212**	344	2,622
Costs incurred related to shares withheld for net settlement	**—**	(813)	(230)
Proceeds from sale and leaseback of land, buildings, and equipment	—	414	1,240
Net cash (used) provided by financing activities	**15,407**	(330)	60,673
Net (decrease) increase in cash, cash equivalents and restricted cash	**(41,749)**	(35,250)	38,624
Cash, cash equivalents and restricted cash - beginning of period	**60,038**	95,288	56,664
Cash, cash equivalents and restricted cash - end of period	**$ 18,289**	$ 60,038	$ 95,288

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., formerly known as Cellectis Plant Sciences, Inc. was founded in 2010 and incorporated in Delaware. We are headquartered in Roseville, Minnesota. We are a technology company focused on delivering plant-based solutions that are healthy and sustainable. Prior to our initial public offering (IPO) on July 25, 2017, we were a wholly owned subsidiary of Cellectis S.A. (Cellectis). As of December 31, 2020, Cellectis owned 64.7 percent of our outstanding common stock. Certain prior year amounts have been reclassified to conform to current year presentation.

Use of Estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States requires us to make estimates and assumptions that affect the amounts reported in the consolidated financial statements and accompanying notes, including those related to revenue recognition, forward purchase contracts, stock-based compensation, and valuation allowances on deferred tax assets. Actual results could differ from those estimates.

Cash, Cash Equivalents and Restricted Cash

We consider all investments purchased with an original maturity of three months or less to be cash equivalents. Restricted cash, which we hold for the benefit of our counterparty on an equipment lease facility, is also invested in cash equivalents.

Short-term investments

We consider investments with more than ninety days to maturity at issuance to be short-term investments. These short-term investments are considered trading securities and are carried at fair value with any unrealized gains and losses recorded in current earnings as a component of interest, net.

Accounts Receivable

Accounts receivable are unsecured and are recorded at net realizable value. We make judgments as to our ability to collect outstanding receivables based upon patterns of collectability, historical experience, and our evaluation of specific accounts and will provide an allowance for credit losses when collection becomes doubtful. We perform credit evaluations of our 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.

Forward Purchase Contracts

We enter into seed and grain production agreements (Forward Purchase Contracts) with seed producers and growers.

The seed contracts often require us to pay prices for the seed produced at commodity futures market prices plus a premium. The seed growers have the option to fix their price with us throughout the term of the agreement. We pay 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 require us to pay prices for all grain produced at commodity futures market prices plus a premium. The grain growers have the option to fix their price with us throughout the term of the agreement. The grain grower contracts allow for delivery of grain to us at harvest if so specified when the agreement is executed, otherwise delivery occurs on a date that we elect through August 31 of the following year. We pay for grain within a contractually determined number of days following delivery and final pricing.

In all periods prior to January 1, 2019, we considered Forward Purchase Contracts to be derivatives and recorded the contracts at fair market value with changes in value reflected in earnings as R&D expense. Effective January 1, 2019, we designated all Forward Purchase Contracts as normal purchases and as a result no longer consider these agreements to be derivatives. As of that date, any mark-to-market gains or losses associated with those contracts were fixed and were reflected in inventory, upon our purchase of the underlying grain.

Inventory

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

We evaluate inventory balances for obsolescence on a regular basis based on the age of the inventory and our sales forecasts. At each period-end, we make assumptions regarding projected selling prices for our products considering futures market prices for the underlying agricultural markets and our associated risk management strategies, our anticipated costs, and other factors that take into consideration our limited operating history and compare those prices to the current weighted average costs of our inventories. If our costs are higher than the projected selling prices, then a valuation adjustment is recorded.

Prior to our commercialization of high oleic soybean products, all Grain Costs were expensed as R&D.

Fair Value of Financial Instruments

We record financial instruments at fair value with changes in those values reported in our results of operations each period. We determine values using readily available market prices, instruments with similar terms and underlying inputs that are quoted on exchanges, or other valuation techniques if no observable inputs are available.

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. Depreciation is computed based upon the estimated useful lives of the respective assets. Leasehold improvements are amortized using the straight-line method over the shorter of the lease term or the estimated useful life of the assets. Repairs 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 expense has been calculated using the following estimated useful lives:

Buildings and other improvements	10-20 years
Leasehold improvements	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

We review our long-lived assets for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset or asset group may not be recoverable. If the impairment tests indicate that the carrying value of the asset or asset group is greater than the expected undiscounted cash flows to be generated by such asset or asset group, further analysis is performed to determine the fair value of the asset or asset group. To the extent the fair value of the asset or 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 or asset group. 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. We have not recognized any impairment losses in these consolidated financial statements.

Revenue Recognition – Product Sales

We recognize sales revenue at the point in time that title transfers to the customer, which is based on shipping terms. Sales include shipping and handling charges if billed to the customer and are reported net of trade promotion and other costs, including estimated allowances for returns, unsalable product, and prompt pay discounts. Sales, use, value-added and other excise taxes are not recognized in revenue. Trade promotions are recorded based on estimated participation and performance levels for offered programs at the time of sale. We generally do not allow a right of return.

In certain instances, we may sell grain to a processor with a commitment to repurchase any soybean meal resulting from their grain crushing activity with a single net cash settlement occurring between the parties. In those instances, we recognize revenue from the sale of grain in the amount of the final net cash settlement with the processor. We also recognize revenue on our sale of the meal to our customers in accordance with our previously disclosed revenue recognition accounting policies. Costs are ascribed to grain and meal sold pursuant to the agreement with the processor.

In certain instances, we may sell grain to a processor and subsequent to the sale they will utilize our storage facility to hold the grain until such time they request it be delivered. We are responsible for all handling charges and delivery activities. In those instances, we recognize revenue from the sale of grain to the processor upon the transfer of the control of the grain through the assignment of warehouse receipts, and concurrently accrue all estimated future storage, handling, and delivery costs associated with that sale.

Revenue Recognition – Out-licensing of Technology

We recognize revenue from license agreements, which may consist of nonrefundable up-front payments, milestone payments, annual payments, royalties, and 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.

Milestone payments represent amounts received from our licensees, the receipt of which is dependent upon the achievement of certain scientific, regulatory, or commercial milestones. We recognize 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.

Advertising Costs

We expense advertising costs as incurred.

Research and Development (R&D)

We recognize 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 collaborator-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 a product, Grain Costs are expensed as R&D.

Patents

We expense 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 G&A expenses in the statements of operations.

Stock-Based Compensation

We generally measure employee and nonemployee stock-based awards at grant-date fair value and record compensation expense over the vesting period of the award. Prior to our adoption of new accounting rules on January 1, 2019, stock-based awards issued to nonemployees were remeasured until the award vests. We use the Black-Scholes option pricing model to value our stock option awards.

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 as we have limited historical information to develop reasonable expectations about future exercise patterns and post-vesting employment termination behavior for our stock option grants. For options granted to nonemployees, we use the remaining

contractual life. For stock price volatility, we use comparable public companies as a basis for our expected volatility. The risk-free interest rate is based on United States Treasury notes with a term approximating the expected term of the option. We assume no dividend yield because dividends are not expected to be paid.

We generally measure compensation expense for grants of restricted stock units using the value of a share of our stock on the date of grant. Prior to our adoption of new accounting rules on January 1, 2019, compensation expense for grants of stock awards to nonemployees were initially measured using the share price on date of grant and remeasured quarterly.

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, S&SC, or G&A expenses in our 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 we have 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 we believe 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.

2. FINANCIAL INSTRUMENTS, FAIR VALUE, AND CONCENTRATIONS OF CREDIT RISK

Financial instruments including cash and cash equivalents, restricted cash, accounts payable, due to related parties and all other current liabilities have carrying values that approximate fair value. We measure short-term investments and commodity derivative contracts at fair value on a recurring 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

The fair values of our assets, liabilities, and derivative positions recorded at fair value and their respective levels in the fair value hierarchy as of December 31, 2020 and December 31, 2019, were as follows:

	December 31, 2020				December 31, 2020			
	Fair Values of Assets				Fair Values of Liabilities			
In Thousands	**Level 1**	**Level 2**	**Level 3**	**Total**	**Level 1**	**Level 2**	**Level 3**	**Total**
Other items reported at fair value:								
Short-term investments	$ 11,698	$ —	$ —	$ 11,698	$ —	$ —	$ —	$ —
Commodity derivative contracts	467	—	—	467	—	—	—	—
Total	**$ 12,165**	**$ —**	**$ —**	**$ 12,165**	**$ —**	**$ —**	**$ —**	**$ —**

In Thousands	December 31, 2019 Fair Values of Assets Level 1	Level 2	Level 3	Total	December 31, 2019 Fair Values of Liabilities Level 1	Level 2	Level 3	Total
Other items reported at fair value:								
Commodity derivative contracts	$ 62	$ —	$ —	$ 62	$ —	$ —	$ —	$ —
Total	**$ 62**	**$ —**	**$ —**	**$ 62**	**$ —**	**$ —**	**$ —**	**$ —**

The non-current portion of our financing lease obligations are also considered a financial instrument, which we measure at fair value for disclosure purposes. It is a Level 2 liability and had a fair value of $15.2 million as of December 31, 2020, and a fair value of $15.7 million as of December 31, 2019.

The composition of our short-term investments as of December 31, 2020, and December 31, 2019 were as follows:

In Thousands	As of December 31, 2020	2019
Corporate debt securities	**$ 11,698**	$ —

Commodity Price Risk

We enter into seed and grain production agreements with settlement values based on commodity futures market prices. These Forward Purchase Contracts allow the counterparty to fix their sales prices at various times as defined in the contract. Because we intend to take physical delivery under the Forward Purchase Contracts, we have grain inventory we will need to sell. We intend to sell these inventories at then-current market prices. As a result, when the Forward Purchase Contract counterparty fixes their grain prices, we enter hedging arrangements by selling futures contracts which converts our exposure to these fixed prices to floating prices. We expect to maintain these hedging relationships until such grain inventory is sold to help stabilize our margins. We do not account for these economic hedges as accounting hedges. We expect any gains or losses from these hedging arrangements to be offset by gains or losses on the grain inventories when such grain inventories are sold. As of December 31, 2020, we have $2.0 million of unrealized commodity derivative losses from hedging contracts sold to convert our fixed price grain inventories and fixed price Forward Purchase Contracts to floating prices. As of December 31, 2020, we held commodity contracts with a notional amount of $12.8 million.

We previously designated all our commodity derivative contracts as cash flow hedges based on the nature of our business activities under the prior go-to-market strategy. 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). We reclassify amounts from AOCI to cost of goods sold when we sell the underlying products to which those hedges relate.

Certain amounts related to our hedging activities are as follows:

In thousands	Amount of Gain (Loss) Recognized in AOCI December 31, 2020	2019	Amount of Gain (Loss) Reclassified to Earnings Year ended December 31, 2020	2019	2018
Cash flow hedges:					
Commodity contracts	**$ —**	$ 17	**$ 17**	$ (81)	$ —
Total	**$ —**	$ 17	**$ 17**	$ (81)	$ —

Foreign Exchange Risk

Foreign currency fluctuations affect our foreign currency cash flows related primarily to payments to Cellectis. Our principal foreign currency exposure is to the Euro. We do not hedge these exposures, and we do not believe that the current level of foreign currency risk is significant to our operations.

Concentrations of Credit Risk

We invest our cash, cash equivalents and restricted cash in highly liquid securities and investment funds and until late December 2019, also held deposits at a financial institution that exceeded insured limits. In the first quarter of 2020, we diversified this risk by shifting our investments to a diverse portfolio of short-dated, high investment-grade securities we classify as short-term investments that are recorded at fair value in our consolidated financial statements. We ensure the credit risk in this portfolio is in accordance with our internal policies and if necessary, make changes to investments to ensure credit risk is minimized. We have not experienced any counterparty credit losses.

3. RELATED-PARTY TRANSACTIONS

We have several agreements that govern our relationship with Cellectis, some of which require us to make payments to Cellectis. Pursuant to our management services agreement with Cellectis, we incurred management fee expenses of $0.3 million in 2020, $1.3 million in 2019, and $2.3 million in 2018.

Cellectis has also guaranteed the lease agreement for our headquarters. Cellectis' guarantee of our obligations under the lease will terminate at the end of the second consecutive calendar year in which our tangible net worth exceeds $300 million.

During the year ended December 31, 2020, Cellectis purchased 1,250,000 shares of common stock in our follow-on offering at the public offering price of $4.00 per share. During the year ended December 31, 2018, Cellectis purchased 550,000 shares of common stock in our follow-on offering at the public offering price of $15.00 per share. In addition, in connection with the vesting on June 14, 2018, of restricted stock units for certain of our and Cellectis' employees and nonemployees, Cellectis purchased 63,175 shares of our common stock at a price of $19.49 per share (the closing price reported on the NASDAQ Global Market on June 14, 2018) directly from such employees and nonemployees in private transactions pursuant to share purchase agreements dated June 13, 2018.

TALEN is our primary gene editing technology, and it is the foundation of our technology platform. TALEN technology was invented by researchers at the University of Minnesota and Iowa State University and exclusively licensed to Cellectis. We obtained an exclusive license for the TALEN technology for commercial use in plants from Cellectis. We also license other technology from Cellectis. We owe Cellectis royalties on any revenue we generate from sales of products less certain amounts as defined in the license agreement, as well as a percentage of any sublicense revenues. We have incurred $0.2 million of license and royalty fees for the year ended December 31, 2020, $0.3 million for the year ended December 31, 2019 and nominal license and royalty fees for the year ended December 31, 2018.

We have entered into various agreements with the University of Minnesota, pursuant to which we have been granted both exclusive and non-exclusive license agreements that carry annual license fees, milestone payments, royalties, and associated legal fees. These agreements primarily relate to gene editing tools, enabling technologies and germplasm. We incurred nominal expenses pursuant to these agreements for the years ended December 31, 2020, 2019, and 2018.

4. 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

On May 22, 2018, we completed a follow-on offering of our common stock. We sold an aggregate of 4,057,500 shares of common stock at a price of $15.00 per share, including 457,500 shares of common stock pursuant to the exercise of the underwriters' option to purchase additional shares. In the aggregate, we received net proceeds from the follow-on offering and exercise of the overallotment option of $57.0 million, after deducting underwriting discounts and commissions of $3.2 million and offering expenses totaling $0.7 million. As part of the follow-on offering, Cellectis purchased 550,000 shares of common stock for a value of $8.3 million, the proceeds of which are included in the net proceeds of $57.0 million.

On October 20, 2020, we completed a follow-on offering of our common stock. We sold an aggregate of 3,750,000 shares of common stock at a price of $4.00 per share. In the aggregate, we 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, Cellectis 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.

Share Repurchases

We repurchased $0.8 million of common stock in 2019 and $0.2 million in 2018.

5. NET LOSS PER SHARE

Basic and diluted loss per share were calculated using the following:

	Year ended December 31,		
In Thousands, Except Share Data and Per Share Amounts	**2020**	**2019**	**2018**
Net loss	**$ (44,836)**	$ (39,612)	$ (27,897)
Weighted average shares outstanding - basic and diluted	**33,882,406**	32,805,684	30,683,421
Basic and diluted loss per share	**$ (1.32)**	$ (1.21)	$ (0.91)

	Year ended December 31,		
	2020	**2019**	**2018**
Anti-dilutive stock options, restricted stock units and performance stock units	**5,522,418**	5,606,552	4,253,301

All outstanding stock options and restricted stock units are excluded from the calculation since they are anti-dilutive.

We have not used the treasury method in determining the number of anti-dilutive stock options and restricted stock units in the table above.

6. STOCK-BASED COMPENSATION

We use 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 our shareholders. We have also granted equity-based awards to directors, nonemployees, and certain employees of Cellectis.

In December 2014, we adopted the Calyxt, Inc. Equity Incentive Plan (2014 Plan), which allowed for the grant of stock options, and in June 2017, we adopted the 2017 Omnibus Plan (2017 Plan), which allowed for the grant of stock options, restricted stock, restricted units, performance shares, and other types of equity awards.

As of December 31, 2020, 1,784,478 shares were registered and available for grant under approved registration statements, while 3,938,285 shares were available for grant in the form of stock options, restricted stock, restricted stock units and performance stock units under the 2017 Plan. Stock-based awards currently outstanding also include some granted under the 2014 Plan, under which no further awards will be granted.

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,		
	2020	**2019**	**2018**
Estimated fair values of stock options granted	**$ 3.24**	$ 10.18	$ 9.09
Assumptions:			
Risk-free interest rate	**.3% - 1.7%**	1.7% - 2.5%	2.2% - 3.0%
Expected volatility	**77.4% - 81.2%**	52.6% - 78.9%	40.9% - 57.2%
Expected term (in years)	**6.0 - 10**	6.8 - 10	5.6 - 10

We estimate the fair value of each option on the grant date, or other measurement dates if applicable, using a Black-Scholes option-pricing model, which requires us to make predictive assumptions regarding employee exercise behavior, future stock price volatility, and dividend yield. Our expected term represents the period that options granted are expected to be outstanding determined using the simplified method. We estimate our future stock price volatility using the historical volatility of comparable public companies over the expected term of the option. We estimate 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. We do not nor do we expect to pay dividends.

Options may be priced at 100 percent or more of the fair market value on the date of grant and generally vest over three to six years after the date of grant. Options generally expire within 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, 2019	1,789,567	$ 8.73	4,481,359	$ 11.73
Granted			887,765	4.67
Exercised			(58,575)	3.60
Forfeited or expired			(689,376)	12.89
Balance as of December 31, 2020	**2,347,665**	**$ 10.15**	**4,621,173**	**$ 10.30**

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

	Year ended December 31,		
In Thousands	**2020**	**2019**	**2018**
Stock-based compensation expenses	**$ 3,371**	$ 6,035	$ 3,609

The aggregate intrinsic value of options exercisable at December 31, 2020 was $0.6 million and the weighted average remaining contractual term was 6.2 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:

	Year ended December 31,		
In Thousands	**2020**	**2019**	**2018**
Net cash proceeds	**$ 212**	$ 344	$ 2,622
Intrinsic value of options exercised	**$ 179**	$ 905	$ 7,569

As of December 31, 2020, unrecognized compensation expense related to non-vested stock options was $7.7 million. This expense will be recognized over 30 months on average.

Restricted Stock Units

Units settled in stock subject to a restricted period may be granted to key employees under the 2017 Plan. Restricted stock units generally vest and become unrestricted over three to five years after the date of grant.

Information on restricted stock unit activity follows:

	Number of Restricted Stock Units Outstanding	Weighted-Average Grant Date Fair Value
Unvested balance at December 31, 2019	813,526	$ 10.31
Granted	105,633	6.54
Vested	(309,693)	10.08
Cancelled	(61,659)	10.80
Unvested balance at December 31, 2020	**547,807**	**$ 9.49**

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

	Year ended December 31,		
In Thousands	**2020**	**2019**	**2018**
Grant-date fair value	**$ 3,122**	$ 3,141	$ 2,691

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

	Year ended December 31,		
In Thousands	**2020**	**2019**	**2018**
Weighted average grant date fair value	**$ 6.54**	$ 12.48	$ 16.76

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

	Year ended December 31,		
In Thousands	**2020**	**2019**	**2018**
Stock-based compensation expenses	**$ 1,155**	$ 2,910	$ 776

As of December 31, 2020, unrecognized compensation expense related to restricted stock units was $2.0 million. This expense will be recognized over 25 months on average.

We treat stock-based compensation awards granted to employees of Cellectis as deemed dividends. We recorded deemed dividends for restricted stock units as follows:

	Year ended December 31,		
In Thousands	**2020**	**2019**	**2018**
Deemed dividends from grants to Cellectis employees	**$ 1,168**	$ 1,358	$ 2,253

Performance Stock Units

In June 2019, we granted 311,667 performance stock units under the 2017 Plan to three executive officers. The performance stock units will vest at 50 percent, 100 percent, or 120 percent of the shares under the award at the end of a three-year performance period based upon increases in the value of our common stock from the grant price of $12.48. The performance stock units will be settled in restricted stock upon vesting, with restrictions on transfer lapsing on the second anniversary of the restricted stock issuance date.

The estimated fair values of performance stock units granted, and the assumptions used for the Monte Carlo simulation pricing model were as follows:

Estimated fair values of performance stock units granted	**$ 7.06**
Assumptions:	
Risk-free interest rate	**1.71%**
Expected volatility	**75.0%**
Expected term (in years)	**3.0**

	Year ended December 31,	
In Thousands	**2020**	**2019**
Stock-based compensation expenses	**$ 445**	$ 225

As of December 31, 2020, unrecognized compensation expense related to performance stock units was $1.5 million and will be recognized over 42 months.

Cellectis Equity Incentive Plan

Prior to 2018, Cellectis granted stock options to our employees. Compensation costs related to these grants have been recognized in the statements of operations with a corresponding credit to stockholders' equity, representing the Cellectis' capital contribution to us. The fair value of each stock option was estimated at the grant date using the Black-Scholes option pricing model.

We recognized stock-based compensation expense related to our Cellectis' grants of $0.1 million in 2018. Expenses in 2019 were immaterial and as of December 31, 2019, all expenses related to these awards had been recognized.

7. INCOME TAXES

The following table reconciles the United States statutory income tax rate with our effective income tax rate:

	Year ended December 31,		
	2020	**2019**	**2018**
United States statutory rate	**21.0%**	21.0%	21.0%
State tax, net of federal benefit	**4.2%**	1.0%	0.7%
Stock-based compensation	**(0.5%)**	(1.6%)	3.6%
Officer compensation	**(1.0%)**	(1.3%)	—%
Deferred rate change	**—%**	—%	0.3%
R&D credit	**0.8%**	1.8%	0.7%
Other	**(0.1)%**	0.3%	0.7%
Change in valuation allowance	**(24.4%)**	(21.2%)	(27.0%)
Effective income tax rate	**—%**	—%	—%

Deferred assets and liabilities consist of the following:

In Thousands	December 31, 2020	2019	2018
Net operating losses	**$ 33,392**	$ 24,852	$ 16,372
Stock-based compensation	**2,531**	3,637	2,747
Financing lease obligations	**4,574**	4,640	4,009
Tax credit carry forwards	**2,577**	2,106	922
Compensation	**339**	97	474
Derivative liability	**703**	—	—
Other	**391**	307	116
Gross deferred tax assets	**44,507**	35,639	24,640
Less valuation allowance	**(39,898)**	(30,888)	(20,329)
Net deferred tax assets	**4,609**	4,751	4,311
Fixed assets	**(4,609)**	(4,746)	(4,352)
Other	**—**	(5)	41
Gross deferred tax liabilities	**(4,609)**	(4,751)	(4,311)
Net deferred tax asset or liability	**$ —**	$ —	$ —

We provide for a valuation allowance when it is more likely than not that we will not realize a portion of the deferred tax assets. We have 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, we have not reflected any benefit of such deferred tax assets in the accompanying consolidated financial statements

We have $206.1 million of tax loss carryforwards. Of this amount, $64.0 million are state operating loss carryforwards and $142.1 million are federal operating loss carryforwards. The federal carryforward periods are as follows: $100.2 million do not expire and $41.9 million expire between 2032 and 2037. The state net operating losses will expire between 2027 and 2037, with some amounts having indefinite carryover. We also have federal and state R&D credit carryovers of $1.9 million and $0.9 million, which will expire between 2032 and 2037.

We are subject to federal income taxes in the United States as well as various state and local jurisdictions. Several years may elapse before an uncertain tax position is audited and finally resolved. While it is often difficult to predict the outcome or the timing of resolution of any uncertain tax position, we do not believe that we need to recognize any liabilities for uncertain tax positions as of December 31, 2020. We will classify any future interest and penalties as a component of income tax expense if incurred.

We do not expect the amount of uncertain tax positions to change significantly in the next twelve months. Our 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 3 to 5 years.

8. LEASES, OTHER COMMITMENTS, AND CONTINGENCIES

Litigation and Claims

We are not currently a party to any material pending legal proceeding.

Leases

We lease our headquarters facility, office equipment, and other items. Our headquarters lease involved the sale of land and improvements to a third party who then constructed the facility. This lease is considered a financing lease.

Sale-Leaseback of Headquarters and Lab Facility

Our headquarters facility is comprised of a 40,000 square-foot office and lab building, greenhouses, and outdoor research plots. We are 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 us occupying the property at the time of extension. In 2017, we received $7.0 million in connection with the sale of the land and uncompleted facility.

The lease commenced in May 2018. Under the lease, we pay 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, we pay an annual base rent of $1.4 million.

We are also responsible for all operating costs and expenses associated with the property. Beginning on the eighteenth month anniversary of the start of the lease, if the landlord decides to sell the property, we have a right of first refusal to purchase the property on the same terms offered to any third party.

Concurrent with entering the lease, Cellectis guaranteed all our obligations under the lease agreement. Cellectis' guarantee of our obligations will terminate at the end of the second consecutive calendar year in which our tangible net worth exceeds $300 million, as determined in accordance with generally accepted accounting principles. At a point when Cellectis owns 50 percent or less of our outstanding common stock, we have agreed to indemnify Cellectis for any obligations incurred by Cellectis under its guaranty of our obligations under the lease.

Sale-Leaseback of Equipment

We also have an equipment financing arrangement that is considered a financing lease. This arrangement had a term of four years for each draw. We were 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, 2020, this restricted cash totaled $1.0 million. We have the option to request the return of excess collateral annually in December, and the amount we expect to receive is reflected as a current asset. The equipment financing arrangement allows for a six-month renewal option or a repurchase option at the end of the lease term.

Operating Leases

As a lessee, we lease office equipment, storage facilities and vehicles under various operating leases.

Rent expense from all operating leases was as follows:

	Year ended December 31,		
In Thousands	**2020**	**2019**	**2018**
Rent expense from operating leases	**$ 83**	$ 117	$ 200

Noncancelable future lease commitments are as follows:

In Thousands	**Operating Leases**	**Capital Leases**
2021	$ 26	$ 1,787
2022	20	1,709
2023	8	1,544
2024	8	1,479
2025	8	1,479
After fiscal 2025	1	19,950
Total noncancelable future lease commitments	**$ 71**	**$ 27,948**

Other Commitments

As of December 31, 2020, we have noncancelable commitments to purchase grain from farmers and seed from growers at dates throughout 2021 aggregating $21.2 million based on current commodity futures market prices, other payments to growers and estimated yields per acre. This amount is not recorded in the consolidated financial statements because we have not taken delivery of the grain or seed as of December 31, 2020.

9. EMPLOYEE BENEFIT PLAN

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

	Year ended December 31,		
In Thousands	**2020**	**2019**	**2018**
Employee benefit plan expenses	**$ 309**	$ 228	$ 136

10. SUPPLEMENTAL INFORMATION

Certain balance sheet amounts are as follows:

	December 31,	
In Thousands	**2020**	**2019**
Accounts Receivable:		
Accounts receivable	**$ 4,317**	$ 1,088
Receivables from growers	**570**	159
Allowance for doubtful accounts	**—**	(125)
Total	**$ 4,887**	$ 1,122

We carry receivables related to amounts we are owed by growers from their purchases of seed. These amounts reduce the cost of the grain we ultimately purchase from the grower and are repaid either on current terms or on an extended payment basis. If a grower has elected an extended payment term, they will pay a higher price per unit and grant us the right to deduct the amount we are owed from the payment we make upon the purchase of their grain. As of December 31, 2020, $0.6 million of the receivables from growers were on extended payment terms. As of December 31, 2019, this amount was zero.

	December 31,	
In Thousands	**2020**	**2019**
Inventory:		
Raw materials	**$ 1,383**	$ 2,211
Work-in-process	**—**	272
Finished goods	**—**	111
Total	**$ 1,383**	$ 2,594

In Thousands	December 31, 2020	2019
Land, buildings, and equipment:		
Land under capital lease	**$ 5,690**	$ 5,690
Buildings	**650**	650
Buildings under capital lease	**3,812**	3,812
Leasehold improvements	**160**	130
Leasehold improvements under capital lease	**10,023**	10,023
Office furniture and equipment	**4,813**	4,174
Office furniture and equipment under capital lease	**1,788**	1,788
Computer equipment and software	**83**	8
Construction in progress	**1,329**	550
Vehicles	**58**	83
Total land, buildings, and equipment	**28,406**	26,908
Less accumulated depreciation and amortization	**(5,546)**	(3,696)
Total	**$ 22,860**	$ 23,212

Certain statements of operations amounts are as follows:

In Thousands	Year Ended December 31, 2020	2019	2018
Revenue:			
Soybean oil	**$ 2,220**	$ 1,685	$ —
Soybean meal	**8,628**	5,604	—
Soybean grain	**12,976**	—	$ —
Other	**27**	7	236
Total	**$ 23,851**	$ 7,296	$ 236

In Thousands	Year Ended December 31, 2020	2019	2018
Stock-based compensation expense:			
Research and development	**$ 1,132**	$ 2,190	$ 629
Selling and supply chain	**(461)**	767	408
General and administrative	**4,300**	6,218	3,348
Total	**$ 4,971**	$ 9,175	$ 4,385

In Thousands	Year Ended December 31, 2020	2019	2018
Interest, net:			
Interest expense	**$ (1,435)**	$ (1,490)	$ (1,257)
Interest income	**557**	1,600	1,521
Total	**$ (878)**	$ 110	$ 264

In Thousands	Year Ended December 31, 2020	2019	2018
Depreciation and amortization expenses	**$ 1,869**	$ 1,607	$ 1,081

Certain statements of cash flows amounts are as follows:

In Thousands	Year Ended December 31, 2020	2019	2018
Cash, cash equivalents, restricted cash, and short-term investments:			
Cash and cash equivalents	**$ 17,299**	$ 58,610	$ 93,794
Restricted cash	**393**	388	381
Non-current restricted cash	**597**	1,040	1,113
Cash, cash equivalents, and restricted cash	**18,289**	60,038	95,288
Short-term investments	**11,698**	—	—
Total	**$ 29,987**	$ 60,038	$ 95,288

In Thousands	Year Ended December 31, 2020	2019	2018
Supplemental investing and financing transactions:			
Non-cash additions to land, buildings, and equipment	**$ —**	$ 414	$ 7,994
Offering costs in accounts payable and accrued liabilities	**$ —**	$ —	$ 443
Non-cash addition to financing lease obligations	**$ 37**	$ 25	$ —
Interest paid	**$ 1,455**	$ 1,472	$ 1,086

11. SEGMENT INFORMATION

We operate in a single reportable segment, agricultural products. Our current commercial focus is North America. Our major product categories are high oleic soybean grain, oil, and meal.

12. LONG-TERM DEBT

Our long-term debt is comprised of a $1.5 million promissory note pursuant to the Paycheck Protection Program (the Paycheck Protection Program loan) established by the Coronavirus Aid, Relief, and Economic Security Act (the CARES Act) implemented by the U.S. Small Business Administration (SBA). We received the funds under the Paycheck Protection Program loan on April 19, 2020. The Paycheck Protection Program loan matures in April 2022 and bears interest at a per annum rate of one percent. The Paycheck Protection Program loan may be prepaid at any time prior to maturity with no prepayment penalties. The Paycheck Protection Program loan contains customary events of default relating to, among other things, payment defaults and breaches of representations and warranties. Subject to certain conditions, the Paycheck Protection Program loan and accrued interest may 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 Paycheck Protection Program loan must 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.

We have applied the proceeds from the Paycheck Protection Program loan toward qualifying expenses and on October 21, 2020, as modified December 29, 2020, applied for forgiveness of the full principal amount and all accrued interest. No assurance can be given that we will be granted forgiveness of the Paycheck Protection Program loan in whole or in part.

13. RESTRUCTURING COSTS

On August 4, 2020, we approved the advancement of our soybean products to a streamlined go-to-market strategy. The impact of the advancement included staffing adjustments related to soybean processing and product sales, as well as the gradual exit of all supply chain contractual commitments that are not associated with the ongoing soybean seed go-to-market strategy. In the twelve months ended December 31, 2020, we recorded $0.7 million of restructuring costs for severance and other related payments, and we also recorded a $0.9 million recapture benefit of non-cash stock compensation expense from the forfeiture or modification of unvested stock awards. We have not incurred any other material costs from the disposal of any assets or contractual terminations as of December 31, 2020. Contracted grain purchases, subsequent sales of grain, and the wind down of other contractual obligations are on-track to be completed in late 2021.

The following table presents the employee separation liabilities as of December 31, 2020:

In Thousands	As of December 31, 2020
Balance as of December 31, 2019	$ —
Charged to expense	685
Cash payments	(265)
Balance as of December 31, 2020	**$ 420**

The December 31, 2020, liability of $0.4 million is expected to be paid through the second quarter of fiscal 2021.

14. SUBSEQUENT EVENTS

On February 19, 2021 Yves Ribeill, Ph.D., Chair of the Board of Directors of Calyxt, Inc., was appointed as the Executive Chair of the Board of Directors and in that capacity, will serve as Calyxt's principal executive officer until the appointment of a successor to James Blome, our former Chief Executive Officer. Mr. Blome is entitled to compensation and benefits as part of this termination without cause, and in the first quarter of 2021, we expect to record up to $2.3 million of cash expense for separation-related payments as well as an additional non-cash charge of $0.1 million from the acceleration of expense recognition of sign-on bonus paid to Mr. Blome in a prior period. The cash payments to Mr. Blome will be made over a period of 24 months from the date his separation agreement is executed. As of the date of this Annual Report that has not occurred, however, we expect it to be completed within its required execution period, which is by March 12, 2021. We also expect to record a benefit to earnings from a $2.5 million recapture of non-cash stock compensation expense from forfeitures of Mr. Blome's unvested stock awards.

Consent of Independent Registered Public Accounting Firm

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

1) Registration Statement (Form S-3 No. 333-233231) of Calyxt, Inc.
2) Registration Statement (Form S-8 No. 333-231336) pertaining to the Calyxt, Inc. 2017 Omnibus Incentive Plan of Calyxt, Inc.
3) 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 4, 2021, with respect to the consolidated financial statements of Calyxt, Inc. included in this Annual Report (Form 10-K) for the year ended December 31, 2020.

/s/ Ernst & Young LLP

Minneapolis, Minnesota
March 4, 2021

Exhibit 31.1

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

I, Yves Ribeill, 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 4, 2021

/s/ Yves Ribeill

Yves Ribeill
Executive Chairman

Exhibit 31.2

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 4, 2021

/s/ William F. Koschak

William F. Koschak
Chief Financial Officer

Exhibit 32

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, 2020, 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 4, 2021

/s/ Yves Ribeill

Yves Ribeill
Executive Chairman
(Principal Executive Officer)

/s/ William F. Koschak

William F. Koschak
Chief Financial Officer
(Principal Financial Officer)