Ceres, Inc.
Form 10-K
November 20, 2014

UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

Form 10-K

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

For the fiscal year ended August 31, 2014

.. **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: 001-35421

Ceres, Inc.

(Exact name of registrant as specified in its charter)

Delaware	**33-0727287**
	(I.R.S. Employer
(State of incorporation)	
	Identification No.)
1535 Rancho Conejo Boulevard	**91320**

Thousand Oaks, CA
(Address of principal executive offices) (Zip code)

Telephone: (805) 376-6500

(Registrant's telephone number including area code)

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

Title of Each Class	**Name of Each Exchange on Which Registered**
Common Stock, $0.01 par value per share	The Nasdaq Stock Market LLC

Securities registered pursuant to Section 12(g) of the Act: Not Applicable

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

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

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 x No ¨

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes x No ¨

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference into Part III of this Form 10-K or any amendment to this Form 10-K. ¨

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

company" in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer	¨	Accelerated filer	¨
Non-accelerated filer	x (Do not check if a smaller reporting company)	Smaller reporting company	¨

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

Under the Jumpstart Our Business Startups Act of 2012, or the JOBS Act, Ceres, Inc. qualifies as an "emerging growth company," as defined under the JOBS Act.

As of February 28, 2014 (the last business day of the registrant's most recently completed second fiscal quarter), the aggregate market value of the registrant's Common Stock held by non-affiliates of the registrant was approximately $14,150,207 (based on the last reported trading price of the Common Stock of $1.43 per share on that date, as reported on the Nasdaq Global Market).

As of November 7, 2014, there were 48,265,633 shares of Common Stock outstanding.

TABLE OF CONTENTS

FORWARD-LOOKING STATEMENTS

Certain statements that we make from time to time, including statements contained in this Annual Report on Form 10-K constitute “forward-looking statements” within the meaning of Section 27A of the Securities Act of 1933, as amended, or the Securities Act, and Section 21E of the Securities Exchange Act of 1934, as amended, or the Exchange Act. All statements, other than statements of historical facts contained in this Annual Report on Form 10-K, including statements regarding our efforts to develop and commercialize our products, anticipated yields and product performance, our short-term and long-term business strategies, market and industry expectations and future results of operations and financial position, including anticipated cost savings from our plan to align expenditures and liquidity, are forward-looking statements. In many cases, you can identify forward-looking statements by terms such as “may”, “will”, “should”, “expect”, “plan”, “anticipate”, “could”, “intend”, “target”, “project”, “contemplate”, “believe”, “estimate”, “p
or other similar words.

We based these forward-looking statements largely on our current expectations and projections about future events or trends that we believe may affect our business and financial performance. These forward-looking statements involve known and unknown risks and uncertainties that may cause our actual results, performance or achievements to materially differ from any future results, performance or achievements expressed or implied by these forward-looking statements. We have described in item 1A, under the heading entitled “Risk Factors,” and elsewhere in this Annual Report on Form 10-K the material risks and uncertainties that we believe could cause actual results to differ from these forward-looking statements. Because forward-looking statements are inherently subject to risks and uncertainties, some of which we cannot predict or quantify, you should not rely on these forward-looking statements as guarantees of future results, performance or achievements.

The forward-looking statements in this Annual Report on Form 10-K represent our views as of the date of this Annual Report on Form 10-K. We undertake no obligation to update publicly, except to the extent required by law, any forward-looking statements for any reason after the date of this Annual Report on Form 10-K to conform these statements to actual results or to changes in our expectations.

You should read this Annual Report on Form 10-K and the documents that we reference in this Annual Report on Form 10-K and have filed with the Securities and Exchange Commission, or the SEC, with the understanding that our actual future results, levels of activity, performance and events and circumstances may be materially different from what we expect.

Unless otherwise indicated in this Annual Report on Form 10-K, “Ceres”, “our company”, “the Company”, “we”, “us” and “ou
refer to Ceres, Inc. and our subsidiaries, Ceres Sementes do Brasil Ltda., Ceres Agrotechnologies Intl LLC and CS Semillas de México, S. de L. de C.V.

Our logos, "Ceres®", "Blade®", Persephone™ and "Skyscraper®" and other trademarks or service marks of Ceres, Inc. appearing in this Annual Report on Form 10-K are the property of Ceres, Inc. This Annual Report on Form 10-K contains additional trade names, trademarks and service marks of other companies. We do not intend our use or display of other companies' trade names, trademarks or service marks to imply relationships with, or endorsement or sponsorship of us by, these other companies.

This Annual Report on Form 10-K contains references to acres, hectares, gallons and liters. In the United States, blendstock fuels are typically measured and sold in gallons. In other parts of the world, the standard unit is liters. The following table sets forth the conversion factor between metrics.

1 Hectare = 2.471 Acres
1 Gallon = 3.785 Liters

Based on the Exchange Rate of the Central Bank of Brazil, on November 7, 2014, one Real was equivalent to 0.40 U.S. dollars.

PART I

Item 1. Business

Our Company

We are an agricultural biotechnology company that develops and markets seeds to produce crops for bioenergy and other markets that utilize plant biomass. We use a combination of advanced plant breeding, biotechnology and bioinformatics to develop seed products that we believe address the limitations of first-generation bioenergy feedstocks, such as corn and sugarcane. These technology platforms, which can increase crop productivity, improve quality, reduce crop inputs and improve cultivation on marginal land, have broad application across multiple crops, including food, feed, fiber and fuel crops.

One of our largest immediate commercial opportunities is in Brazil where we are pursuing multiple markets for our sorghum products. We market our sweet sorghum hybrids as a ‘‘drop-in’’ feedstock to complement existing feedstock supplies and extend the operating season of Brazilian sugarcane-to-ethanol mills. We also market our high biomass sorghum products to mills and other agri-industrial facilities for use in generating electricity, heat and steam. Biomass feedstocks grown from our seeds can also be used for the production of second-generation biofuels and bio-based chemicals. Due to the similarities among crops developed for bioenergy and those developed for livestock consumption, we believe that certain of our seed products may have application in the hay and forage feed market. Our upstream position in the value chain allows us to be largely independent of the success of any particular conversion technology or end use.

We believe that crops such as corn, rice and sugarcane can benefit from many of the traits and genetic technologies we are developing for bioenergy crops, such as traits that provide drought tolerance. We have also generated many biotech traits specifically for cereal crops, such as rice, that increase grain yields and provide greater yield stability across different environments. To date, our field evaluations have largely confirmed earlier results obtained in greenhouse and laboratory settings, and we believe that based on these multiple confirmations, we have an industry leading biotech trait technology pipeline, with applications in food, feed, fiber and fuel crops.

We market and sell our seed products under our Blade brand. In certain crops, including corn, rice and sugarbeet, we have out-licensed a portion of our traits and gene technology to existing market participants and continue to pursue opportunities to out-license these technologies, among other go-to-market strategies. We also market our proprietary genome viewer software, known as Persephone, to plant and biomedical researchers.

We believe that the strength of our technology has been validated by our receipt of multiple competitive grants as well as collaborations with leading companies in crop science, such as Syngenta Biotechnology and Bayer CropScience. In July 2014, our Brazilian subsidiary was selected for a competitive grant of up to approximately 10 million reais, or 4 million U.S. dollars, as well as a government subsidized credit facility for up to approximately 67.5 million reais, or 27 million U.S. dollars, from the Brazilian government under its *PAISS Agricola* initiative, which provides funding for transformational technologies in agriculture. Historically, we also have received a United States Agency for International Development, or USAID, grant and one of the U.S. Department of Energy's first Advanced Research Project Agency for Energy, or ARPA-E, grants, among other federal and state grants. We also have significant intellectual property rights to our technology platforms, traits and seed products.

Commercial Evaluations of Our Sorghum Products in Brazil

Since 2010, we have completed various field evaluations of our sorghum products in Brazil with approximately 50 ethanol mills, mill suppliers and agri-industrial facilities. During this time, our sorghum seeds were planted and harvested using existing equipment and fermented into ethanol or combusted for electricity generation without retrofitting or altering the existing mills or industrial facilities. We believe these experiences have demonstrated the "drop-in" nature of our both our sweet and high-biomass sorghum products, and along with higher yielding products in our pipeline, will serve as the basis for expanded adoption of these product lines as a feedstock for ethanol and power production in Brazil and other markets.

With industrial processing of sorghum feedstock generally well established in Brazil, we believe that field performance — primarily yields of sugars that can be fermented to ethanol — will largely determine the scale and pace at which our current and future sweet sorghum products will be adopted. Based on industry feedback, we believe that minimum average yields in the range of 2,500 to 3,000 liters of ethanol per hectare will be necessary to achieve broad adoption. While we achieved yields in this range in the 2013-2014 growing season in Brazil with multiple products in multiple regions, we expect that the 2014-2015 growing season in Brazil will be necessary to validate results. Additional growing seasons beyond the 2014-2015 season may be required to fully demonstrate this yield performance across numerous geographies and for our products to gain broad adoption.

For our high-biomass types, based on industry feedback, we believe that minimum average yields per hectare in the range of 30 to 40 metric tons of biomass, measured at 50% moisture content, will be necessary to achieve broad adoption. However, recent water shortages and increasing demand for power in Brazil have led to a spike in electricity prices. We believe these market conditions have made yields as low as approximately 28 metric tons per hectare economically attractive at current electricity prices.

2014 – 2015 Sorghum Growing Season in Brazil

For the 2014-2015 season, we expect to evaluate our products with more than 50 customers, which include, among others, ethanol mills and multi-mill conglomerates that we estimate are collectively responsible for more than 30% of the sugarcane crushed in Brazil. For the 2014-2015 sorghum growing season in Brazil, total plantings of our sorghum products are expected to cover up to approximately 5,000 hectares, compared to approximately 1,000 hectares planted the previous season. The increase in planted area is due primarily to increased demand for high biomass sorghum for power generation. Plantings also include small, multi-hybrid evaluations designed to determine yield potential, identify the best performing hybrids for specific regions and demonstrate various crop management practices.

To meet immediate demand for biomass for power generation and to facilitate the development of a supply chain for sorghum biomass, we will provide agronomy and crop management services for certain customers this season under our sales incentive and promotional programs, which include offtake agreements for sorghum biomass produced under our direction or management. Revenue for these plantings will be based upon yields of biomass per hectare rather than seed sales. We expect the majority of high biomass sorghum hectares this season to be planted under these sales incentive and promotional programs.

In addition to utilizing our sorghum seed products to grow feedstock for bioenergy, this season we initiated sales of our sorghum for use as livestock feed and forage, following successful evaluations in the U.S. and Brazil.

Prior Sweet Sorghum Growing Seasons in Brazil

We believe that the improvement of top yields achieved by the mills since 2010 – 2011 reflect an overall trend of improvement. The following summarizes the results of our previous sorghum growing seasons:

2013 – 2014 Growing Season. For the 2013–2014 sorghum growing season in Brazil, plantings consisted of both sweet and high biomass sorghum product types. Our products were planted with 49 customers, including ethanol mills and mill suppliers, across 55 different locations. These plantings primarily consisted of small, multi-hybrid evaluations designed to determine yield potential, identify the best performing hybrids for specific regions and demonstrate various crop management practices. Our agronomists worked more closely with our customers and took a greater role in implementing or helping implement these crop management practices than in prior growing seasons. Several mills planted larger evaluations in the 2013-2014 growing season. Total plantings of our commercial and pre-commercial sorghum hybrids covered approximately 1,000 hectares compared to approximately 3,000 hectares for the previous season due primarily to a greater focus among mills on field performance, which can be determined at a smaller scale than evaluations needed for confirming industrial performance. Calculated yields of ethanol per hectare from our sweet sorghum products were more than 35% higher on average than the previous season, primarily as a result of product improvements and better crop management, and despite dry and hot conditions that affected the company's sorghum evaluation areas for part of the growing season. Ethanol yields from 40 customer evaluation sites ranged from approximately 950 to 4,200 liters per hectare, according to company calculations. Twenty-eight evaluations sites achieved a minimum of 2,500 liters with one or more hybrids. In addition, several of our high biomass sorghum hybrids achieved average yields that we believe met or exceeded minimum yields levels needed for commercialization. Top yields exceeded 35 metric tons per hectare, as measured at 50% moisture content. Based on anecdotal customer reports, we believe our portfolio of sorghum hybrids largely outyielded competing products at multiple locations where side-by-side comparisons were available. Variations in ethanol and biomass yields were primarily due to differences in growing conditions during the season, as well as anticipated variation in the adaptation range and performance of individual hybrids under evaluation. Fifteen customer evaluation sites were lost or did not provide meaningful yield data due to weather or other causes such as herbicide drift. Based on the positive results of the 2013-2014 growing season, we commercialized several new sweet and high biomass sorghum products to support larger scale customer evaluations.

2012 – 2013 Growing Season. For the 2012 – 2013 sorghum growing season in Brazil, our products were planted by or for more than 30 mills through a combination of seed sales, agronomy and crop management services and product evaluations. We collected yield results from approximately two-thirds of the mills that planted our hybrids; the remaining mills reported incomplete results, did not complete the evaluation or chose not to report results. For mills that reported results, yields of fermentable sugars were approximately 50% higher on average than the previous season, primarily as a result of product improvements related to biomass quality and productivity, better crop management and more favorable growing conditions at most planting locations. Ethanol yields from our products ranged from approximately 450 to 3,600 liters per hectare, according to mill and company calculations. Mills representing the top 20% of yields, and which generally followed established crop management practices, achieved average yields ranging from 2,100 to 3,300 liters per hectare. Lower yields were primarily due to deviations from recommended crop management protocols, weather related delays during planting and disease infection late in the growing season.

2010 – 2011 and 2012 – 2012 Growing Seasons. In the 2010 – 2011 growing season, in collaboration with several mills, we completed commercial-scale evaluations on approximately 250 hectares of our sweet sorghum. The primary purpose of these evaluations was to demonstrate proof of concept rather than productivity. Calculated ethanol yields ranged from approximately 650 to 1,000 liters per hectare for the 2010 – 2011 growing season based on results from two mills. During the following 2011 – 2012 season, we completed our first sales of sweet sorghum, which amounted to greater than 3,000 hectares to more than a dozen mills. These evaluations included a greater number of hybrids and

more variable growing conditions over a broader range of geographies than the previous year. Proof of concept was again confirmed, and at a greater scale, although yields were less than optimal primarily due to severe drought conditions that affected agricultural crops in the region, including sugarcane and sweet sorghum. Calculated ethanol yields ranged from 300 to 2,100 liters per hectare for the 2011 – 2012 growing season based on results from 14 mills.

Mills use a variety of measurements and a complex formula to determine ethanol yields per hectare. Methodologies and assumptions used in these calculations can vary, and are therefore subject to greater variability than a controlled environment. Field evaluations are subject to significant variability from year to year, including differing locations, trial designs, soil types, products planted, agronomic practices and growing conditions, and therefore, results are not directly comparable. Moreover, results from smaller scale evaluations may not be indicative of yields that can be achieved in larger-sized commercial plantings, which are affected by greater variability.

Market Opportunities

Our advanced plant breeding, biotechnology and bioinformatics platforms, which can increase crop productivity, improve quality, reduce crop inputs and improve cultivation on marginal land, have broad application across multiple markets and crops, including food, feed, fiber and fuel crops.

Bioenergy

The world continues to seek economically and environmentally sound alternatives to fossil fuel-based transportation fuels, chemicals and power. We believe bioenergy is one of the few viable replacements for fossil fuels, particularly petroleum. Unlike other renewable technologies, biofuels are intended to utilize existing vehicles and transportation fuel infrastructure. Similarly, biopower, unlike wind and solar power, can provide baseload and dispatchable generation of renewable electricity. Despite the potential of biofuels, first-generation biofuel feedstocks have demonstrated their limitations in terms of scale, perceived competition with food production, net energy balance and dependence on government subsidies. Similarly, current sources of biomass, such as forestry residues and agricultural wastes, are limited in scale and are not optimized for use in bioenergy. They are also by-products derived from other processes and therefore subject to supply disruptions.

Our dedicated energy crops provide an attractive combination of high yield density, high net energy balances, low input requirements, the ability to grow on marginal land and, as a dedicated source of feedstock, the potential to be tailored for specific production and refining processes. As a result, we believe that dedicated energy crops will become a critical component for the growth of the biofuel, bio-based chemicals and biopower markets.

Brazil. One of our largest immediate commercial opportunities is in Brazil where we are pursuing multiple markets for our sorghum products. In Brazil, sugarcane is the predominant feedstock for ethanol and a major source of feedstock for power generation. According to the USDA, there are approximately 400 sugar and ethanol mills in Brazil, including approximately 350 mills in the Center-South of the country, where our field evaluations are located. The sugar and ethanol mills have a combined crush capacity of over 600 million metric tons, according to the United States Department of Agriculture, or USDA. Based on published reports, we estimate that the top 20 mill groups accounted for approximately 40% of the total crushing capacity. Due to the inherent limitations of sugarcane physiology and growth patterns, Brazilian mill operators typically obtain sugarcane that makes mill operation economically feasible approximately 200 days per year, based on a report issued by the Brazilian Ministry of Agriculture's crop forecasting agency, *Companhia Nacional de Abastecimento* (Conab), dated May 2012. We believe that mill operators are seeking alternatives that will allow them to increase production utilization of their existing mills beyond their current operating schedule in order to maximize their market opportunity. Conab estimates that approximately 9.1 million hectares of sugarcane are cultivated in Brazil, with approximately 11% of this area replanted annually, or renewed, according market surveys reported in August 2013 and August 2014. We believe that a significant portion of annual renewal areas, along with other under-utilized land, represent a market opportunity of one million hectares for sweet sorghum production once we consistently demonstrate economically attractive yields. We believe that the lower production costs of sweet sorghum compared to sugarcane provides an attractive incentive.

Based on our analysis and reports from industry research firms Informa Economics FNP and Agrosecurity, we estimate that total sweet sorghum production costs on a marginal cost basis range from approximately 2,850 to 3,050 Brazilian reais per hectare compared to sugarcane, which we estimate costs approximately 6,000 reais per hectare on an annualized basis to produce. Moreover, the current crush capacity in Brazil must increase to meet expected domestic demand. The Brazilian government's energy research institute, *Empresa de Pesquisa Energética*, or EPE, projects that Flex Fuel vehicles will comprise 76% of light duty vehicles in Brazil in 2022, up from 53% in 2012. This increase is expected to significantly increase the size of the ethanol market in Brazil.

In Brazil, our sorghum products also can be used to generate electricity. Ethanol mills typically combust sugarcane bagasse, the leftover biomass from ethanol production, to generate onsite power. For mills connected to the grid, excess electricity production provides an additional source of revenue. Biomass is also used as a source of power and heat for other agribusiness and industrial sectors. Wood is the primary feedstock. Based on field and industrial evaluations with mills and other industrial companies, we believe that sorghum has a number of favorable attributes as a biopower feedstock and can be utilized as a supplementary source of biomass, especially during the offseason or periods of sugarcane bagasse shortages. Based on current biomass usage in Brazil, we estimate that potential market size for high biomass sorghum is approximately one million hectares.

Biopower in Other Geographies. Our dedicated energy crops can be used to generate electricity in existing solid-fuel power facilities, such as coal-fired generating plants. In the U.S., Europe and other geographies, the conversion of biomass to power has traditionally been fueled by bio-based waste products and residues from the paper and timber industries. We believe this practice has limited the size, location, efficiency and scale of biomass power generation because power producers cannot reliably secure long-term supplies of consistent quality feedstock. We believe we will see a material increase in demand for biopower in the event that additional renewable energy legislation is passed in the United States, Europe or other regions that requires a higher percentage of generation from low-carbon sources or provides equal production incentives for the co-firing of biomass with coal, as are currently available for wind and solar power. Based on industry feedback, we believe that our products can be cost competitive with existing biopower feedstocks and, assuming that our products meet various biomass quality specifications, can be used by existing utilities and power producers.

Cellulosic Biofuels and Bio-Based Chemicals. According to a 2011 report published by International Energy Agency, or IEA, biofuel production could reach approximately 112 billion gallons per year by 2030, up from 26 billion gallons in 2010. To meet these targets, the IEA believes feedstock production would need to increase to 150 million acres in 2030, up from 75 million acres in 2010. We believe quadrupling the volume of biofuels while only doubling the feedstock production acres will require higher yielding second-generation feedstocks, like our dedicated energy crops. We believe that our dedicated energy crops and traits have the potential to become the common denominator in a broad array of bio-based products, including ethanol, butanol, jet fuel, diesel-like molecules and gasoline-like molecules, and can enable the development of larger-scale processing facilities.

Food, Feed and Fiber Crops

Row Crops. Approximately 432 million acres of biotechnology crops were planted globally in 2013, according to a February 2014 report published by the International Service for the Acquisition of Agri-Biotech Applications. The global market value of biotechnology crop seeds was approximately $15.6 billion, as reported in the same report. In the United States, we estimate, based on the price differential between conventional seed varieties and similar varieties with a trait, that retail premiums for traits and stacked trait combinations in food, feed and fiber crops range from approximately $10 to $50 per acre, depending on crop and geography. As people in many countries become more affluent, they tend to consume more of their dietary protein in the form of meat and dairy products, driving the demand for animal feed grains and forage higher. Therefore, greater production of food, feed, and fiber will require higher crop productivity levels among all crops over time. In order to continue the productivity gains made in many crops over the past 75 years, and to do so in a more sustainable manner, we believe that advanced breeding methods, and biotech traits, in particular, will be required to produce higher performance crops that make more productive use of cultivated land, as well as to develop more robust, stress-tolerant crops that can grow under more difficult conditions and on marginal land. Our belief is consistent with historical yield improvements achieved via plant breeding and the adoption of agricultural biotechnology.

Forage Crops. There are similarities among crops developed for bioenergy and those developed for livestock consumption, and we believe that certain of our seed products and traits may have application in the hay and forage

feed market. Globally, the market for forage feed was valued at approximately $85 billion in 2013, according to a 2014 report from Transparency Market Research. Due to increased global consumption of meat and dairy products, demand for forage feed and hay is expected to continue to increase. In the United States, approximately 40 million acres were planted with non-alfalfa forage crops in 2013, according to the USDA. We believe that growers of forage crops, including vertically integrated businesses such as dairies, will need to seek additional sources of forage as well as utilize more marginal quality cropland, or cropland with limited water availability, to meet their feedstock requirements. Based on evaluations with universities and dairies, we believe that certain of our products have a number of favorable attributes for forage feed, such as high yields and lower water requirements, as well as competitive production costs relative to corn and certain hay crops.

Global Sugar. Sugarcane is cultivated on approximately 25 million hectares worldwide, according to the United Nations' Food and Agriculture Organization crop database, FAOSTAT. We believe that a number of our biotech traits could provide significant benefits to sugarcane production, such as higher juice and sugar yields and greater resilience to drought and other stress conditions. Biotech solutions are particularly attractive in sugarcane since improvements through plant breeding have been cumbersome and slow compared to other crops. We also believe that sweet sorghum can be developed into a crop with yields and sucrose levels that are high enough to complement sugarcane as a source of crystalized table sugar. Today, it is not possible to economically produce crystalized table sugar from sweet sorghum on a standalone basis due to the mix of sugars in the plant and the relatively lower sucrose levels compared to sugarcane. However, we have demonstrated at pilot scale trial that crystalized sugar can be produced from sweet sorghum on a blended basis. We also have hybrids early in our development pipeline that have demonstrated sucrose purity levels that may be high enough to produce crystalized sugar. Due in part to sweet sorghum's ability to grow rapidly and lower production costs relative to sugarcane, we believe that sweet sorghum could be an attractive complement or alternative to sugarcane outside of our immediate opportunity in the Brazilian ethanol market.

Genomics and Bioinformatics Technologies

Bioinformatics Software. We use bioinformatics tools, such as our Persephone genome browser, to develop new seed product and traits. We believe that Persephone has applications outside of the plant sciences, such as in biomedical research, where genomics data is analyzed and viewed in a similar manner to plants. The genomics and bioinformatics markets are growing rapidly. According to a May 2014 industry report from Allied Market Research, the bioinformatics market alone is forecast to grow from $3.4 billion in 2013 to $12.8 billion by 2020. Bioinformatics involves the development and storage methods that help in the organizing, analyzing, and retrieving of biological information. Today, a genome can be sequenced in a few hours for several thousand dollars – a task that took 13 years and $2.7 billion to accomplish during the Human Genome Project. Gathering genetic data is no longer a bottleneck for scientific researchers; however, a major hurdle remains in the efficient organization, analysis, and interpretation of the data. We expect that the low cost and widespread application of DNA sequencing and genetic testing in both plant and medical research will require improved software tools, like our Persephone software, to visualize, explore and mine genetic data. Based on internal performance metrics, and those reported by our current collaborators, we believe that our Persephone software offers a number of competitive performance advantages and has applications across a number of life science technology platforms that utilize genomics data.

Competitive Strengths

We believe that we possess a number of competitive strengths that position us to become a leading provider of seeds, traits and bioinformatics technologies, including:

Commercial Products Available Today

We currently have a number of commercially available seed product lines, including sorghum and switchgrass. Our sweet sorghum and high biomass sorghum hybrids have been successfully planted, harvested and processed in Brazil

at commercial scale. We believe that the experience of using our products as a ‘‘drop-in’’ feedstock for the past four growing seasons, as well as new higher yielding hybrids in our product portfolio, will serve as the basis for expanded adoption of these product lines as a feedstock for ethanol and power production in Brazil and other markets.

Attractive Business Model

Seed businesses traditionally incur significant research and development expenditures and have long product development time lines, but benefit from a combination of high gross margins, low capital expenditure requirements and intellectual property protection. Once developed, seeds require little physical infrastructure or production cost to be replicated for sale. Seeds are typically priced, however, based on a share of the value created to the customer as opposed to their cost of production. In general, seed costs to growers are a relatively small percentage of their total production cost, but the performance of those seeds is critical to the growers’ economics. We believe we can position our business to take advantage of low production costs relative to the high value of our products to our customers.

Innovative R&D Technology Platforms

To develop higher performing varieties and traits, we use several advanced research and development methods, including biotechnology, marker-assisted breeding and genomics. We believe that our innovative integrated breeding and biotechnology approach allows us to efficiently identify traits, effectively introduce these traits into crops, and more quickly commercialize new and improved seeds and traits for the market. We have both biotech traits and non-biotech traits. Our biotech traits for high biomass yield, nitrogen use efficiency, drought tolerance and altered flower development, among others, have been successfully evaluated in the field; however, they are still at least four years away from commercialization. We believe we were one of the first companies to implement the practice of developing biotech traits using two test species, rather than just one, which we believe allows us to select gene-trait combinations that enhance commercial crops more successfully. We also utilize a proprietary gene stack discovery method to identify the best performing combinations of genes and gene promoters, which regulate gene expression and play a critical role in the effectiveness of biotech traits. We believe that our ability to continue to apply our advanced research and development methods will enable us to further enhance our proprietary germplasm and traits portfolios going forward.

Extensive Proprietary Portfolios of Germplasm and Traits

While many companies have developed portfolios of germplasm or traits, we believe we are one of the only companies focused on dedicated energy crops that has large portfolios of both field-validated traits and germplasm, which includes thousands of specimens and breeding lines, as well as multiple pools of regionally adapted germplasm spanning northern temperate to tropical climates. Having both germplasm and field-validated trait portfolios allows us to leverage the synergies created by combining the two and facilitates innovation in a way that would not be possible with germplasm or traits alone. We believe new market entrants would need to cultivate several generations of germplasm to achieve performance equivalent to our current product portfolio, by which time we believe we will have further evolved our germplasm. Therefore, we believe our proprietary position would be difficult and time-consuming to replicate.

Validated, Robust Bioinformatics Platform

We have established our Persephone bioinformatics software as a preeminent genome browser, displacing incumbent solutions at major life science companies. The software includes a number of proprietary data management optimizations to quickly fetch and render very large datasets. This speed enables more dynamic visualizations, intuitive discovery and greater insights into genomics data. We believe that our direct experience using Persephone internally and our ability to continually develop and launch new versions with additional features and functions will enable us to further establish our market position in the plant sciences and expand into new markets, such as biomedical research and diagnostics.

Management Team with Significant Industry Experience

Our management team includes top scientists and industry experts that have extensive experience in the field of agricultural biotechnology and possesses a deep understanding of a variety of agricultural, chemical and industrial

biotechnology businesses, including the seed industry, as well as our regional markets of Brazil, the United States and Europe.

Our Strategy

Our objective is to be the leading provider of seeds and traits to a variety of bioenergy markets, including first-generation biofuels, such as ethanol, as well as cellulosic biofuels, biopower and bio-based chemicals We also plan to pursue other opportunities to leverage our traits, germplasm and technology platforms in food, feed and fiber crops. Key elements of our business strategy include:

Expand Our Presence in Brazil

Brazil represents one of our largest immediate commercial opportunities and we have prioritized both product development and commercial resources for this market. Since our first industrial-scale trials in 2010 – 2011, we have significantly increased yields of fermentable sugars and biomass, and expect to continue to develop and launch new and improved sorghum products. We also continue to build commercial relationships directly with ethanol mills, agri-industrial facilities and their feedstock suppliers. While government policies have placed considerable economic pressure on ethanol production in Brazil, current market conditions are favoring the use of our sorghum products for electricity generation at mills and other agri-industrial facilities. We believe the adoption of sorghum in Brazil can follow similar rapid adoption curves seen for other seed and agricultural innovations. Our belief is based on the drop-in nature of our sorghum products and industry feedback which indicates that rapid adoption can occur once customers reliably achieve economically attractive yields with our products.

Pursue Additional Markets for Our Technology, Germplasm and Genes

We intend to pursue additional markets for our genetic technology, germplasm and genes. For example, we believe crops such as corn, rice and sugarcane can benefit from many of the traits and genetic technologies we are developing, such as traits that provide drought tolerance. We have also generated many biotech traits specifically for cereal crops, such as rice, that increase grain yields and provide greater yield stability across environments. We have chosen primarily to be a technology provider or a trait provider to companies in the food, feed and fiber sectors, however, for certain crops and markets within these sectors, we may explore direct marketing channels. We also intend to evaluate additional uses for our current crops. For example, based in part on purchases of our hybrids for use as livestock feed and forage, we are currently evaluating commercial interest in our seed products by forage producers in the U.S. and Brazil.

Expand Customer Base for Persephone

We intend to increase the number of customers utilizing our Persephone software as their primary genome browser through both client-server installations at major life science companies as well as a planned Software as a Service (SaaS) edition that targets the larger market of individual researchers. We plan to evaluate a beta version of our SaaS edition during our second fiscal quarter, which begins in December. To support ongoing customer satisfaction and attract new customers, we also intend to continue to enhance the functionality and features, and the overall performance of Persephone. We believe that Persephone has applications outside of the plant sciences, such as in biomedical research, where genomics data is analyzed and viewed in a similar manner to plants.

Continue Innovation and New Product Development

We are continuing to develop innovative solutions using a broad range of technological tools, including genomics, biotechnology and proprietary bioinformatics in order to produce crop varieties with improved yields and other performance characteristics. We believe we can accomplish these goals by finding innovative ways to utilize and combine traits and germplasm to further enhance our products.

Continue to Build Our Intellectual Property Portfolio

We believe we have established a strong intellectual property position in plant genes, traits and energy crop germplasm, based on the nature, size and filing dates of our patent portfolio and plant variety protection certificates. We believe we are one of the few companies focused on dedicated energy crops that have this combination of intellectual property assets. We use our integrated technology platforms to continually improve our products and develop innovations that will further strengthen our intellectual property position.

Our Technology Platforms

Our integrated technology platforms are a combination of existing genetic assets, specifically germplasm and traits, and competencies in genomics and gene mapping, biotechnology and bioinformatics. Integration of these platforms allows us to improve our existing genetic assets as well as develop and commercialize new products from them.

We believe we are one of the only companies focused on dedicated energy crops that has large portfolios of both field-validated traits and germplasm, which includes thousands of specimens and breeding lines, as well as multiple pools of regionally adapted germplasm spanning northern temperate to tropical climates. We have also identified to date numerous genes and their relatives from different species that significantly enhance agriculturally relevant traits. Having both germplasm and field-validated trait portfolios allows us to leverage the synergies created by combining the two and facilitates innovation in a way that would not be possible with germplasm or traits alone.

We believe that our innovative integrated breeding and biotechnology approach allows us to efficiently identify traits, effectively express these traits in crops, and more quickly commercialize new and improved seeds and traits for the market.

Germplasm

We believe we have the most comprehensive germplasm collections for our energy crops. Our belief is based on the diversity and nature of the entries we have and how well they have been evaluated, measured and cataloged. Germplasm comprises collections of parental lines and other genetic resources representing the diversity of a crop, the attributes of which are inherited from generation to generation. Germplasm is a key strategic asset since it forms the basis of plant breeding programs. Our early entry into the energy crop industry has allowed us to acquire access to valuable germplasm through strategic collaborations with leading institutions. We are currently involved in three major germplasm development collaborations, each with a history of successful research and germplasm development in an energy crop. When we sell varieties developed during such collaborations, or based on the results of such collaborations, we will typically pay our collaborators royalties on net sales of such varieties.

Traits

We are able to further improve the quality of our future product offerings by adding our proprietary traits to our germplasm collections. The majority of our traits are developed through biotechnology, also known as genetic engineering. Biotechnology allows us to precisely add traits not readily achievable through conventional breeding methods. In most cases, the same trait can be added to multiple crops with similar effect. In some instances, a gene introduced through biotechnology may confer more than one beneficial trait, such as salt tolerance and drought tolerance. Our strategy is to focus on genes that have shown large, step increases in performance, and whose benefits are largely maintained across multiple species.

We believe we were one of the first companies to implement the practice of developing biotech traits using two test species, rather than just one, which allows us to more successfully select gene-trait combinations that enhance commercial crops. Our current portfolio includes genes that have been shown to substantially increase sugar levels or biomass growth per plant as well as genes that have been shown to increase biomass under normal and reduced levels of nitrogen fertilizer. We have genes that allow plants to use water more efficiently and/or recover from water deficits more readily. We also have genes that have been shown to provide tolerance and enhanced recovery to both acute and prolonged salt stress, as well as withstand toxic levels of aluminum in the soil. In addition, we are developing genes

that have demonstrated enhanced conversion of biomass to fermentable sugars and genes that regulate flower development.

Our biotech traits are at various stages of development in our pipeline. We are currently evaluating their performance in various target crops primarily through replicated, multi-year field evaluations. These evaluations are designed to validate the function of the gene and measure the performance of the biotech trait in a specific crop. To date, our field evaluations have largely confirmed previous results obtained in greenhouse and laboratory settings.

The commercial development of biotech traits in commercial crops is a multi-year process. Following transformation, when the selected gene is inserted in a target crop, the resulting plants are evaluated in the greenhouse for one to two years, and then in the field to confirm results for two to four years. Following field trials, specific gene-trait combinations are typically selected and, if required, submitted for regulatory approval, or deregulation, which has historically been a multi-year process in the United States and Brazil. Assuming these averages, we believe that we could introduce our first regulated biotech trait or traits to the market in 2018 at the earliest.

We also develop non-biotech traits, including Skyscraper, a commercially available trait that provides a significant increase in biomass yields. Since Skyscraper was identified and developed using molecular marker technology, we have been able to rapidly incorporate it into our elite breeding lines and commercial products.

We intend to price our traits based on the added value they create, which can vary by crop and geography. For our biotech traits, we are considering various pricing models, including separate annual trait fees per acre as well as blended seed and trait prices. For our commercial Skyscraper trait, a per-bag trait fee is included in the seed price. In row crops, we have licensed and intend to license our traits to existing market participants. These licensing agreements are expected to vary by crop, geography, the nature and economic benefit of the trait, and how well advanced the trait is within our pipeline. Future payments to us may be based on a percentage of sales or other performance metrics or milestones.

Research and Development Programs

In order to maintain the lead we have established through our combination of superior germplasm and field-validated traits, we have developed research and development expertise that we believe will allow us to continue to improve our offerings over time. To develop higher performing seeds and traits, we deploy a variety of research and development methods and tools, including genomics, conventional and marker-assisted breeding, agronomy and other genomics-based technologies.

For the fiscal years ended August 31, 2014, 2013 and 2012, we invested $14.2 million, $16.4 million, and $19.2 million, respectively, on research and development, with the main emphasis on breeding and traits.

Genomics

Plant genomics involves the large-scale, simultaneous study of large numbers of genes, their effects and their interactions. One of our strengths in genomics involves our ability to organize the genetic data we amass into actionable information via proprietary relational databases, software and algorithms. In general, we have focused our research efforts on determining gene function, gene regulation and finding which genes enhance desirable traits. In addition to identifying novel gene-trait combinations, our genomics tools allow us to work with large groups of genes and complex biological processes controlled by multiple genes.

In order to capitalize upon our internal catalog of genetic information as well as information in the public realm, we developed our own proprietary software, including our Persephone genome viewer software, which serves as an important tool for locating, mapping and annotating genetic information in plants. We have used Persephone in our marker-assisted breeding and biotech trait pipelines to speed the development of elite parental breeding lines and improved sorghum hybrids. This software program has been non-exclusively licensed to Syngenta Biotechnology and Bayer CropScience. We are also developing a Software as a Service (SaaS) edition of Persephone and plan to evaluate

a beta version of the SaaS edition during our second fiscal quarter, which begins in December.

Conventional and Marker-Assisted Breeding

Plant breeding is the act of bringing together specific parent plants to produce a new offspring plant. This cross creates a new plant that will contain a mixture of the characteristics of its parents. The offspring are tested under various conditions to determine which has the superior combination of desired attributes. Further improvements are made by mating and continuing selection of superior parents and offspring through succeeding generations. Plant breeding allows researchers to identify plants with the most favorable combination of desired characteristics to serve as both parental lines and products. In addition to conventional plant breeding, we believe that our genomics expertise makes the identification of proprietary molecular markers more direct and more comprehensive, which allows us to select key crop characteristics more rapidly and accurately than conventional plant breeding alone. Marker-assisted breeding integrates molecular biology and information systems with plant breeding to identify and flag important genetic sequences so that they can be readily found in seeds or plant tissue at any stage of plant development. This platform allows us to track and select the most effective combination of genes, increase the number of progenies and breeding lines created at early stages in the breeding program, and cull them using marker-based selection thereby making greater gains per breeding cycle. Markers are especially useful when seeking to combine multiple non-biotech traits into elite commercial lines.

Agronomy

The performance of plant varieties and traits is influenced by the growing environment, which includes climate, day length, soil quality, pests, length of the growing season and crop management practices. Our network of field trials extends across numerous hardiness zones and regions. This network provides regional performance data and market fit information to support our research and commercialization efforts. Since 2013, we significantly expanded the number of locations and scope of field evaluations of our pre-commercial products and advanced breeding materials in Brazil in order to better position our future products among various geographies, growing conditions and production practices.

Our Current Product Lines and Product Pipeline

Sorghum

Our sorghum products include sweet, high biomass and forage types. Sweet sorghum is a type of sorghum that accumulates free sugars in its stalk much like sugarcane. It is sown by seed, grows faster than sugarcane, and typically requires substantially less water and nitrogen fertilizer than sugarcane to grow to harvestable maturity. To produce ethanol, sweet sorghum juice is extracted through crushing in existing sugarcane equipment, and then fermented to fuel. The leftover biomass, called bagasse, is combusted for biopower like sugarcane bagasse. Because sweet sorghum plants mature more quickly than sugarcane, and reach optimal sugar levels at different times of the year, we believe existing sugar-to-ethanol mills can complement their feedstock supply and extend their operational season through the use of our sweet sorghum product by up to 60 days. Our current sweet sorghum product line consists of improved, proprietary seed varieties and hybrids developed through conventional and marker-assisted breeding.

High biomass sorghum is a type of sorghum which is developed and grown primarily for enhanced biomass yield potential as opposed to sugar or juice content. High biomass sorghum is well suited for the generation of renewable electric power and the creation of cellulosic biofuels. Like other types of sorghum, high biomass types are seed propagated, and generally require less water and nitrogen fertilizer than Brazilian sugarcane and U.S.-grown corn. There are many similarities with sweet types and, in fact, some hybrids can be utilized for either purpose, depending on when they are planted and harvested, and how the crop is managed. Our current high biomass sorghum product line consists of improved hybrids developed through conventional and marker-assisted breeding.

Forage sorghum is a type of sorghum that shares many of the characteristics of sweet and high biomass types. It is grown primarily as silage for livestock. Our current forage products consists of improved hybrids selected from our sweet and high biomass product development pipeline. During the 2014 growing season in the United States, we completed pilot commercial sales of our forage sorghum hybrids. These hybrids have demonstrated competitive yield advantages in both company and university trials. In one university-led evaluation, with other seed companies, for example, we achieved the highest milk production yield per acre, which is a key metric for dairy operations. Results from small scale evaluations and research settings are not a guarantee of future commercial performance, and further evaluations will be necessary to confirm results. However, based on such results, we plan to move forward with

larger-scale commercial efforts in the United States. We are targeting sales in the several thousands of acres for the 2015 growing season in the United States. We are also marketing our forage sorghum hybrids in Brazil.

Based on the product candidates in our pipeline today, we expect to continually improve our commercial product line with higher yielding hybrids. We also plan to develop and launch a number of product innovations that provide greater flexibility in harvest time and end use, as well as other benefits, to our mill customers. In advanced hybrid field evaluations, where field evaluation plots are smaller, irrigated and managed more closely than commercial fields, ethanol yields from our later-stage product candidates exceeded 5,300 liters per hectare. Other experimental hybrids earlier in our product development pipeline demonstrated yields exceeding 6,000 liters per hectare. In addition, later-stage high biomass sorghum product candidates achieved yields well over 50 metric tons of biomass per hectare, measured at 50% moisture content. While we do not expect to achieve these yield levels at commercial scale at the present time, these research-stage results demonstrate the genetic potential of hybrids already in our pipeline. Further testing will be required to confirm these research results, and lower yields are expected as hybrids are advanced to larger-sized plantings which are affected by greater variability in weather, soil and other growing conditions.

We are also developing sorghum hybrids with biotech traits that offer higher yields. In a 2014 U.S. field evaluation, one of our leading biotech traits provided a greater than 20% biomass yield advantage in a commercial-type sorghum. We plan to continue to optimize the trait for potential use in the U.S. forage sorghum market as early as 2018. Should performance improvements be confirmed at commercial-scale, we believe that hybrids with this trait could provide us with a significant performance advantage over competitor seed products.

Switchgrass

Switchgrass is a perennial grass that tolerates a wide range of environmental conditions and offers high biomass yield potential compared to many other perennial grasses and crop plants. It generally requires substantially less water and nitrogen fertilizer than corn, and can grow under semi-arid conditions. Like sorghum, switchgrass is seed propagated. As a perennial, switchgrass is generally not harvested for sale during the first year when the crop is being established. A properly managed stand of switchgrass may persist for a decade. However, we believe that producers will likely choose to upgrade to a new variety as new generations of switchgrass seeds with even higher yields or more desirable characteristics become available. Our current switchgrass products have demonstrated higher biomass yields on average over comparable varieties depending on the variety and trial location. In our development pipeline, we have switchgrass varieties that can offer additional increases in biomass, including the first hybrid switchgrass developed for bioenergy. These pre-commercial products represent an important step in switchgrass plant breeding and have shown significant yield increases over our current products.

Miscanthus

The Miscanthus genus includes several perennial species that have potential as dedicated energy crops. The most common variety adopted in the United States and Europe to date is a sterile hybrid of two miscanthus species. While biomass yields for this hybrid may exceed those of switchgrass within its region of adaptation, very large-scale production is not commercially feasible at this time due to prohibitive establishment costs and propagation speed. Through our collaboration with the Institute of Biological, Environmental, and Rural Sciences of Aberystwyth University in Wales, U.K., or IBERS, and the Sustainable Bioenergy Centre of the U.K.'s Biotechnology and Biological Sciences Research Council (BBSRC,) we are developing seed-propagated varieties that have the same high-yielding attributes of comparable vegetatively propagated miscanthus hybrids, yet with establishment costs and propagation speed more comparable to other energy crops. Extending the region of adaptation is another focus area.

Food, Feed and Fiber Crops

Due to the conservation across species of mechanisms underlying traits, crops such as corn, rice and sugarcane can benefit from many of the biotech traits we have developed for use in our crops. This provides us with an additional market for our technology and genes, and mitigates the cost and risk of trait development. Based on results to date, we believe we have an industry-leading biotech trait technology pipeline, with applications in numerous food, feed and fiber crops. We have chosen primarily to be a technology provider or a trait provider to companies in this sector, however, for certain crops and markets within these sectors, we may explore direct marketing channels.

In June 2014, we initiated field evaluations of a number of our leading biotech traits in sugarcane in South America. These evaluations are designed to measure the performance of our traits in leading commercial varieties, with a goal of advancing the best plants for broader evaluation. We expect to increase the scope and scale of our biotech trait development activities in sugarcane with funding we expect to receive under the Brazilian government's PAISS program. In addition to sugarcane, a number of our biotech traits are being introduced and evaluated in sugarbeet through our collaboration with a leading seed company in this market.

We have also generated many biotech traits specifically for cereal crops, such as rice, that increase grain yields and provide greater yield stability across environments. Some of these have demonstrated double-digit percentage yield increases in rice, relative to average annual yield improvements for grain of approximately 1%, as reported by *Economic Botany*. In rice, our biotech traits for high grain yield and greater yield stability have advanced well past proof-of-concept, and are moving forward to the next stage of development, which will lead to field evaluations of our biotech traits in hybrid rice. The process of introducing these traits into hybrid rice parental lines is currently underway by our commercialization partner, who is preparing for field evaluations. These field evaluations must receive required government permits before proceeding. To date, our partner has not received these permits and we are unable to predict when or if these permits will be issued. In China, field evaluations of several our biotech traits and gene stacks in corn have been completed and results are expected by the end of calendar year 2014.

Seed Production and Operations

The production of commercial-scale quantities of seeds requires the multiplication of seeds through a succession of plantings and seed harvests. We produce commercial seed either on leased land managed by us or with contract seed producers. Healthy seeds can remain saleable for several years if stored under optimal conditions. In the United States, we receive, condition, treat, package and warehouse our seed grown in the northern hemisphere at our seed warehouse and order fulfillment center in Amarillo, Texas. We anticipate that we will be able to warehouse and process up to 8 to 10 million pounds of seed annually at this facility, or about 1.5 million or 2 million acres of commercial switchgrass or sorghum production. In Brazil and other countries in South America, we contract with growers to produce our seeds. In addition, we work with several third parties who have complete production and packaging capabilities to complement our own production capabilities. All of these seeds are processed, packaged and warehoused by third parties who are experienced in these functions. This method of production is able to supply enough seeds to plant up to 250,000 hectares of commercial sorghum. In the event we begin to generate orders in this range, we may invest in our own facilities to be able to handle production amounts capable of planting 2 million or more hectares of commercial sorghum.

Sales and Marketing

We primarily market and distribute our seed products directly to our customers under the trade name, Blade. These customers have included ethanol mills, utilities, independent power producers, agri-industrial facilities, cellulosic biofuel companies, individual growers and grower cooperatives. We are positioning Blade in the marketplace as a premium brand that represents quality, innovation and value across multiple seed markets. As a result, we price our proprietary products based on their added value, and not on production costs. Our seed prices are determined based on a series of complex considerations, including the best alternative use of land and perceived added value to growers, mills and other customers. Our pricing philosophy is to share a portion of the added value we create with our customers.

In Brazil, our market development activities typically include field evaluations of our current and experimental seed products. These generally small-scale evaluations provide new and prospective customers an opportunity to gain first-hand experience with our Blade products as well as identify the best mix of seed varieties for their growing conditions and harvest timelines. For customers with greater experience with our products, we sell and supply various seed products to support larger, commercial-scale evaluations and uses. For the 2014-2015 growing season in Brazil, the retail price for our sorghum products has ranged from 240 to 265 Brazilian reais per hectare. We have offered leading mill groups and agri-industrial customers the opportunity to participate in sales incentive and promotional programs, which we are using to encourage customers to adopt our products sooner and at larger scale. Under the programs, we expect to incur additional costs of sales for crop management and agronomy support services, which we expect to be reimbursed from revenue generated through biomass sales. Depending on biomass yields per hectare, we may incur certain unreimbursed costs for seed, crop production and agronomy services provided under these programs.

While the markets for second-generation biofuels, bio-based chemicals and biopower markets are developing more slowly than the renewable fuels industry originally anticipated, we believe these markets could represent a significant

opportunity. We have adjusted the pace and nature of our product development and marketing activities with these extended timelines in mind. In these markets, we are building our customer base primarily by forming collaborations with biorefineries, power generators and biomass users at their existing, planned and future facility locations. In the United States, our market development activities have typically included agronomy trials, harvest and handling evaluations, test conversions or burns, various post-harvest assays, and supply chain analysis. These tests have confirmed that biomass from our energy grasses can be converted and processed into various fuels or bio-based products. We have conducted similar activities in Europe, although to a lesser extent than in the United States or Brazil at this time. In Europe, we are also working with local institutions to build brand recognition and to advance our research, especially in miscanthus, through our collaboration with IBERS and the U.K.’s Biotechnology and Biological Sciences Research Council (BBSRC).

Major Research Collaborations

Texas A&M University

In August 2007, we entered into an agreement with The Texas A&M University System, or Texas A&M, for the development and commercialization of high biomass sorghum, sweet sorghum and selected related crops as energy crops, together with the discovery of molecular markers for certain traits. The agreement was amended and restated in September 2011 and provides us with exclusive access to a highly regarded sorghum breeding program and the extensive sorghum genetics, breeding and genomics infrastructure of Texas A&M through September 2026. This agreement provides exclusive options and licenses to defined sorghum germplasm, elite sorghum breeding lines, parental lines, advanced hybrids and genomic markers. We fund the majority of the activities performed by Texas A&M pursuant to our Amended and Restated Sponsored Research Agreement, or the Sponsored Research Agreement. The specific research projects and budgets undertaken pursuant to such agreement will be determined by an Executive Committee comprised of two members from each of Texas A&M and us as set forth in the Sponsored Research Agreement. Ownership of intellectual property rights on results from the program work are allocated based on inventorship. Pursuant to our Sponsored Research Agreement and Amended and Restated Intellectual Property Rights Agreement, or the IP Rights Agreement, we have an option to obtain an exclusive world-wide commercial license to results of the program. Texas A&M has agreed not to conduct any activities in the field of our collaboration under an agreement which would grant rights to a third party during the term of our Sponsored Research Agreement. Our Sponsored Research Agreement expires in September 2026, unless terminated earlier pursuant to customary contract termination provisions or program inactivity. Our licenses on results of the joint program survive termination of the Sponsored Research Agreement and survive until, on a country-by-country basis, the expiration of all registered or patented intellectual property rights of Texas A&M covering the licensed line. Under the Sponsored Research Agreement, we were obligated to enter into good faith negotiations regarding our provision to Texas A&M of certain in-kind research support for Texas A&M's use in performing project activities under the agreement. We satisfied this obligation by entering into a software license, use and access agreement with Texas Agrilife Research in April 2012, pursuant to which we provide them with up to two years of access to our proprietary Persephone genome viewer software, and by providing other relevant information.

We have entered into two exclusive world-wide license agreements with Texas A&M for sorghum lines. The terms of such exclusive license agreements provide that the licenses expire on a country-by-country basis upon the expiration of all registered or patented intellectual property rights of Texas A&M covering the licensed line. Pursuant to such agreements, we pay Texas A&M a royalty on sales of varieties developed using the licensed line at a rate that decreases from low double digits to low single digit rates as a percentage of sales when the licensed line is combined with lines from other sources to develop a variety. We also pay Texas A&M a royalty in the low double digits as a percentage of license income if we grant sublicenses and minimum royalties creditable against royalties on sales. Royalty rates for our current commercial varieties developed using lines licensed from Texas A&M are in the mid single digits as a percentage of sales. Minimum royalties payable to Texas A&M under these agreements escalate on a yearly basis and range from zero to $5,000 per year. We also bear reasonable expenses for intellectual property protection. Further, pursuant to our Amended and Restated Sponsored Research Agreement and Amended and Restated Intellectual Property Rights Agreement, we have an option to obtain an exclusive world-wide commercial license with the right to grant sublicenses to the inventions and sorghum lines resulting from our sponsored program. As of August 31, 2014, aggregate upfront license fees that have been paid or have become due to Texas A&M under these agreements have been $7,000. There are no milestone payments payable under our agreements with Texas

A&M. Pursuant to the IP Rights Agreement, we issued warrants in December 2011 to Texas A&M to purchase 66,666 shares of our common stock at an exercise price equal to $14.30. The warrants expire on September 24, 2026 and, subject to certain conditions, vest in equal installments on the fifth, tenth and fifteenth anniversary of the IP Rights Agreement.

The Samuel Roberts Noble Foundation, Inc.

In May 2006, we entered into an agreement with the Samuel Roberts Noble Foundation, Inc., or the Noble Foundation, a non-profit agricultural institute, for the development and commercialization of switchgrass. This relationship provides us access to extensive breeding infrastructure and exclusive licenses to elite switchgrass varieties, breeding lines and advanced cultivars. We use our markers and other genomics technologies to expand the conventional and molecular breeding program in switchgrass at the Noble Foundation. The collaboration further encompasses the development of agronomic systems and management practices for switchgrass. Our funding commitments under this agreement are determined jointly with the Noble Foundation on a three-year project basis. All germplasm and plant varieties resulting from the joint program are jointly owned by us and the Noble Foundation, while the ownership of other intellectual property rights is allocated based on inventorship, except that Noble Foundation inventions resulting from projects to which we provide a financial contribution are jointly owned. Further, pursuant to our Master Research Agreement, the Noble Foundation has agreed to grant us an exclusive world-wide license with the right to grant sublicenses to exploit commercially the results of our joint collaboration program, subject to paying the Noble Foundation a reasonable remuneration to be negotiated in good faith. There are no upfront license fees or milestone payments payable under any of our agreements with the Noble Foundation. The Noble Foundation has agreed not to collaborate with or perform any activities for the benefit of or grant any rights to third parties in the field of switchgrass without our prior written consent, subject to certain exceptions. This agreement expires in May 2026, unless terminated earlier pursuant to customary contract termination provisions or under certain circumstances, for example if either party ceases substantially all activities in switchgrass, if the institutional mission, purpose or structure of the Noble Foundation changes substantially and adversely affects the Noble Foundation's ability to satisfy its obligations under the agreement, or if no active collaborative research projects exist for more than two years.

We have entered into exclusive license agreements with the Noble Foundation for three switchgrass varieties, which the Noble Foundation has licensed on an exclusive basis from the University of Georgia Research Foundation, or UGARF. Such agreements provide that we will file for intellectual property protection on such varieties at our expense in the joint names of the Noble Foundation and UGARF. The term of each such exclusive license agreement is, on a jurisdiction-by-jurisdiction basis, the longer of the duration of the intellectual property rights covering the licensed variety or 15 years from the first sale of the licensed variety in such jurisdiction. Pursuant to one agreement, we pay the Noble Foundation a royalty on sales that ranges from mid single digits to low double digits as a percentage of sales and a royalty on license income in low double digits as a percentage of license income if we grant sublicenses and minimum royalties creditable against royalties on sales and license income. Pursuant to the second agreement, we pay the Noble Foundation a royalty on sales in mid single digits as a percentage of sales, a royalty on license income in the low double digits as a percentage of license income if we grant sublicenses and minimum royalties creditable against royalties on sales and license income. The minimum royalties payable to the Noble Foundation under these agreements escalate on a yearly basis and range from $2,500 to $20,000 per year, per variety. In addition, we have an outstanding exclusive option to enter into an exclusive license to two switchgrass varieties, which the Noble Foundation has the exclusive option to license, or to the extent exercised, an exclusive license from UGARF. Such option is exercisable at any time, by Ceres providing written notice to Noble, but no later than twelve months from the respective release date of the subject switchgrass variety. The respective release dates have not been set yet. The royalty rates on such varieties are not yet determined.