GLOBAL FOOD AND AGRIBUSINESS M&A REVIEW – 2019

HIGHLIGHTS AND INSIGHTS OF SIGNIFICANT TRANSACTIONS, INVESTMENTS, AND PARTNERSHIPS IMPACTING THE GLOBAL FOOD AND AGRICULTURE INDUSTRY

2019

VERDANT PARTNERS™

INTRODUCTION

Verdant Partners is pleased to present its annual review of M&A activities impacting the global food and agribusiness industry. This installment has three distinct features: 1) unique insights on developments in the industry; 2) summaries and comments on select transactions and investments during the past year; and 3) perceptions and expectations for the year to come.

INSIDE THIS EDITION

ABOUT VERDANT PARTNERS

Verdant Partners is wholly focused on food and agribusiness. We advise buyers and sellers through the business transactions that shape the competitive landscape of our industry. We have built a team of professionals with real world industry experience, having developed skills that extend beyond those of traditional M&A advisors. For this reason, we are recognized as the leading transaction advisory group for the global food and agribusiness industry. Verdant is comprised of professionals located in offices across North America, South America, Europe, and Australia, and has represented clients in over 30 countries. Our team has a high level of industry and deal expertise, enabling us to facilitate the proper and professional handling of transaction and consulting projects. Our network of professionals have experience across a wide range of sectors, including:

- Biotechnology & New Breeding Techniques
- Seeds & Crop Protection
- Precision & Digital Technologies
- Legal Cannabis
- Biologicals & Seed Care
- Grain Handling & Logistics
- Food & Feed Ingredients
- Horticulture & Floriculture
- Packaging & Preservation
- Fresh Produce & Permanent Crops
- Agricultural Processing & Manufacturing

VERDANT'S YEAR IN REVIEW

At Verdant Partners, we consider our focus on M&A advisory for a single industry to be our core competency and the root of our success. This acute focus enables us to leverage our global knowledge and perspectives of food and agriculture in each project we undertake. We are uniquely positioned in the market and deliver tailor-made solutions to our clients. At Verdant, we take great pride in our client's track record of success.

Over the course of Verdant's 20+ year history, our firm has represented hundreds of client companies in various capacities. For the first 20 years, we found that the market's primary need was advising clients on sell-side transactions, which represented approximately 90% of our engagements. In the past 2-3 years, changes in the industry have resulted in a considerable uptick in demand for assistance with identifying and acquiring businesses. This evolution has resulted in Verdant's activities becoming equally balanced between sell-side and buy-side mandates.

We believe that the increased demand for buy-side work is primarily linked to three factors: 1) sellers have experienced a more recent market-driven decline in profitability and have gone into a holding pattern with concern that timing is bad for a sale; 2) buyers have excess cash that they seek to deploy for high-quality opportunities in the food & ag space; and 3) buyers in regions of the world experiencing negative interest rates are increasingly incentivized to look abroad for more lucrative international investments opportunities. This third element is where Verdant Partners is particularly well equipped: we leverage our global and diverse team of professionals to assist buyers that seek acquisition opportunities in new markets and/or new regions.

While crop input agriculture has long been the primary pillar of Verdant's success, we are increasingly excited about the opportunities that we have identified developing further downstream in the crop value chain. These new focal points are particularly centered on specialty food/feed ingredients, fresh fruits and vegetables, and digital agriculture. Meanwhile, we are exploring new possibilities to leverage our industry contacts to better serve the livestock and animal protein sector, with the anticipation of new and exciting announcements in the year ahead.

From all of us at Verdant Partners, we hope that you will read this installment of our annual review with great interest. While we are surely biased, we believe more than ever that the future remains bright for food and agriculture. To that end, should you have questions or be interested in exploring opportunities together, the team at Verdant Partners remains eager to assist in the execution of your M&A strategy.

Verdant Partners
+1 (217) 359-8470
www.verdantpartners.com

FEATURED VERDANT TRANSACTION

Verdant Assists Leading Argentine Seed Company to Establish its Presence in the U.S. Seed Market

Joint Venture Formed Between Two Family Owned Companies

Client Overview

GDM Seeds ("GDM") is a leading soybean research, development and commercialization company with activities in all of the primary soybean producing regions of the world. Since 1982, GDM has been intensely focused on the development of soybean genetics, and today has an established research presence in fifteen countries. As a result, they are the leading provider of soybean genetics in the South American market and estimate that their genetics account for more than 20% of total global soybean production.

Client Objective

GDM engaged Verdant to assist them with the development of their North American strategy, which included a multi-pronged approach for the distribution of soybean genetics. As part of its strategy, GDM has established relationships with independent seed companies that market branded soybean seed products to growers across North America's 100+ million acres that are dedicated to the crop each year. In addition to introducing its germplasm through a licensing model, GDM elected to adopt a branded marketing strategy that involved formally partnering with companies that possessed a strong regional presence, an in-depth knowledge of the market, and a keen awareness of growers' preferences.

Verdant Solution

Upon the adoption of the second phase of the strategy co-developed between Verdant and GDM's management team, Verdant leveraged its network of contacts in the target space to identify a subset of companies that met GDM's strategic criteria. Introductory meetings were held with multiple target companies to better gauge the interest of parties and determine if there would be a cultural fit with GDM. After multiple face-to-face meetings, GDM found its ideal partner in Mustang Seeds, a family-owned marketer of corn, soybean, and cover crop seed products based in South Dakota.

Successful Result

On March 1, 2019 it was announced that Mustang Seeds and GDM had entered a joint venture to develop and provide high-quality soybean genetics and innovative technologies to North American farmers. In addition to soybean genetics, the new relationship creates considerable other opportunities for the GDM team, including: 1) a deep understanding of the U.S. seed business; 2) the platform from which to expand into the Canadian market; and 3) additional product offerings including corn and cover crops.

> ***"Through Mustang Seeds in-depth knowledge of the American producer and its vast distribution network, GDM will deliver the best genetics to the American farmer." – Ignacio Bartolome, U.S. and Canada Business Director for GDM Seeds***

OTHER VERDANT NEWS

During the past year, Verdant has actively focused on bolstering its team in an effort to expand into new areas as part of our own strategic initiatives. These initiatives are primarily centered around an expanded focus across the broader food and agriculture value chain. We maintain a commitment to the crop input segment from which we have built our success, while actively improving our knowledge and resources in new opportunistic sectors of food and agriculture. One of Verdant's specific initiative is to enhance our capabilities in digital and precision agriculture. We were pleased to add Chris Harbourt, co-founder of Agrible, to our team of Advisors. To further improve our capabilities in the global agricultural technology space, Verdant formed a strategic relationship with AgTech Insights, a global technology consulting firm. Meanwhile, to keep up with the growing demand for our services, we added a new member to our core deal support team. Andrew Jonson is a new Associate and will be based in our Champaign, Illinois headquarters. We hope that you will soon meet our new team members and we look forward to showcasing our new capabilities in 2020 and beyond.

UPDATE ON INDUSTRY SHAPING CONSOLIDATION – THE "BIG FOUR"

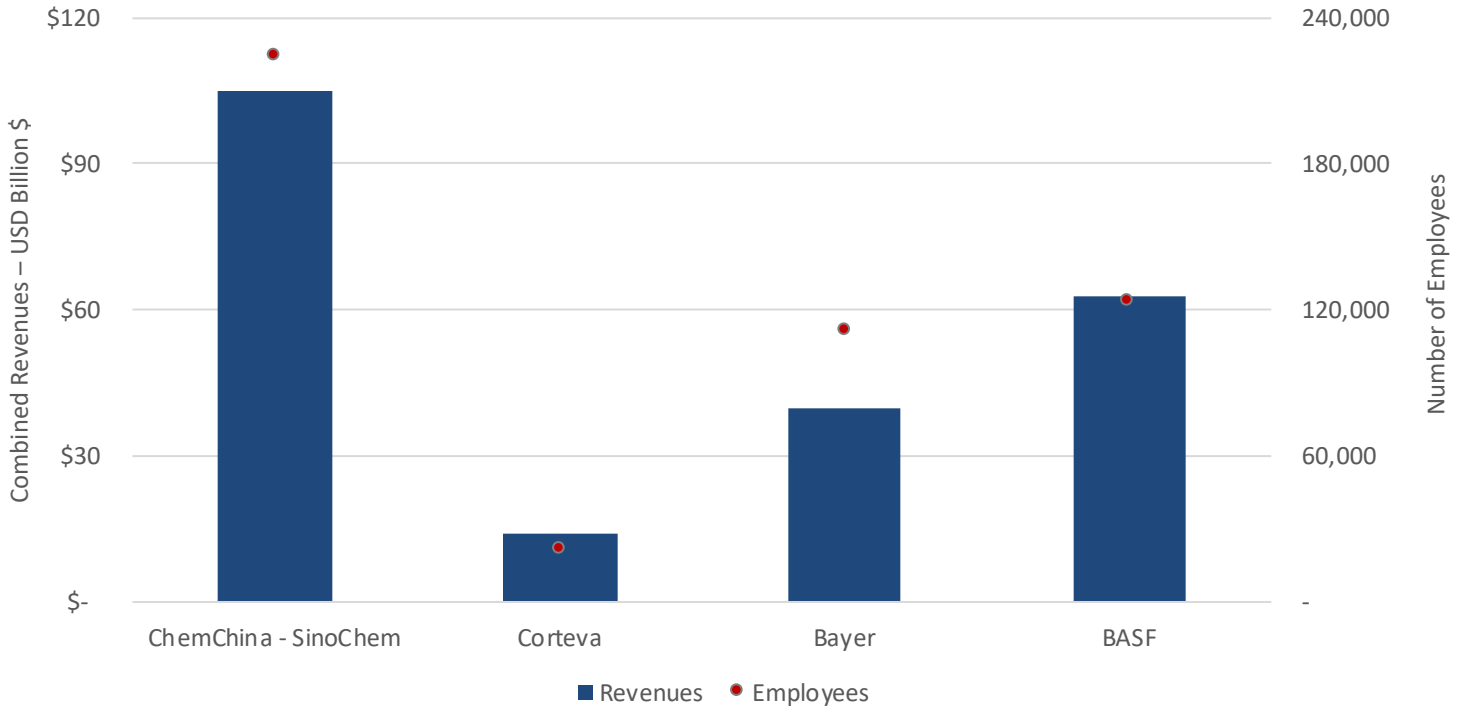
Amidst speculation that dated back to 2018, ChemChina and SinoChem announced their intentions to merge in mid-2019, and the merger became official in January 2020. With the merger, ChemChina and SinoChem are consolidating their agricultural assets into a new holding company called Syngenta Group. The new Syngenta Group is projected to have sales in excess of $100 billion and will be a global giant in the agriculture industry. (source)

Corteva Agriscience officially went public on June 3, 2019, separating from DowDuPont to become a global leader in agricultural solutions. The Company's 2019 earnings report is scheduled for release at the end of January 2020. Better than expected Q3 results lifted Corteva's stock price above its original IPO level, but the continued challenges of the U.S. agriculture market and expected flat revenue and earnings performance have kept share prices below beginning trading values. (source)

Bayer closed its US$63 billion all-cash acquisition of Monsanto in June 2018. As a result of regulatory concerns, Bayer agreed to divest effectively all of its agricultural assets to BASF for approximately US$9 billion. Bayer has continued to face numerous lawsuits related to glyphosate, with recently published reports indicating that Bayer could offer to settle the over 40,000 Roundup-related lawsuits this summer. These lawsuits and the agricultural headwinds have resulted in the Company's share price being down over 30% since the June 2018 Monsanto acquisition. (source)

As a result of the required antitrust divestment stemming from Bayer's acquisition of Monsanto, BASF became the successful acquirer for Bayer's agricultural assets, including canola, cotton, soybean, vegetable seed, the LibertyLink trait, Liberty herbicide, and digital farming assets. The combined revenue of this collection of assets exceeded $2.6 billion in 2017. BASF has been relatively quiet since the acquisition of the Bayer assets, with no major public announcement of acquisitions of agriculture businesses or assets in 2019.

BIG FOUR CONSOLIDATED REVENUES (as reported FY2018)



SECTOR FOCUS: AG RETAILERS IN THE UNITED STATES

Total revenues for the United States' Top 100 ag retailers increased by 6% in 2019, growing from US$30.5 billion in 2018 to US$32.3 billion in 2019. The 6% jump far exceeds the growth seen in previous years, as average revenues have historically grown by approximately 2%. This overall increase in revenue is likely related to the increase in the number of total retail outlets, which increased 5.1% from 2018 to 2019. Seven of the Top 100 ag retailers accounted for nearly 70% (or US$21.8 billion) of total revenue in 2019. Across the major crop services categories, three segments saw an increase in revenue from 2018 to 2019, including: 1) fertilizer revenues grew from US$12.2 billion to US$13.7 billion; 2) crop protection products increased from US$11.9 billion to US$12.1 billion; and 3) custom application rose from US$1.6 billion to US$1.7 billion. Seed sales remained constant with revenues of US$4.8 billion. (source)

KEY DEVELOPMENTS WITH MAJOR RETAILERS

Nutrien Ag Solutions expanded its digital ag platform in 2019, allowing farmers to manage inputs and analyze yields and profitability for an entire crop year. In September 2019, Nutrien acquired Montana-based Northern Seed, bolstering its strength in this geography. In February 2019, Nutrien acquired Actagro, a developer of sustainable soil and plant health products, for $340 million. These two transactions and internal digital ag expansion demonstrate Nutrien's commitment to growth and innovation, as well as its focus on owning proprietary technologies.

In November 2019, Helena broke ground on a new chemical formulation and packaging facility in Des Moines. This facility will be a key aspect of Helena and Corteva Agriscience's ongoing relationship, as Corteva has pledged a large portion of its liquid herbicide formulation and packaging business to Helena's Des Moines facility. It is anticipated that construction will be completed in mid to late 2020, with production in the new facility expected to begin shortly thereafter.

Growmark was active with acquisitions during 2019, including Miller Spraying LLC in April, Solu-Cal USA in December, and Mid-Iowa Cooperative in December. The Company also partnered with Solinftec and Growers Edge to help farmers improve their digital connectivity and overall efficiency. In late 2018, Growmark's seed division, Seedway, complete the acquisition of Champion Seed Company, a distributor of vegetable seeds in the western United States.

Wilbur-Ellis was also active in 2019, making numerous acquisitions in order to bolster its portfolio. In February 2019, Wilbur-Ellis acquired successful independent ag retailer Wiles Brothers Fertilizer, allowing the Company to expand its footprint to eastern Nebraska and western Iowa. In May 2019, Wilbur-Ellis acquired California-based Ag Services Inc., an ag retailer that has provided services to the Coachella Valley of California for over 15 years. Lastly, Wilbur-Ellis announced the acquisition of Nachurs Alpine Solutions in November 2019, marking the largest acquisition in Wilbur-Ellis' history.

In March of 2019, CHS acquired West Central Distribution, LLC, a central Minnesota-based distributor of agronomic products. CHS also announced its intentions to renovate its Fairmont, MN-based soybean processing plant, which will increase the crush and oil production capacity of the plant.

In November 2019, the sixth and seventh largest ag retailers in the United States came together, as J.R. Simplot Co. announced that it had acquired Pinnacle Agriculture. Prior to the acquisition, both companies had revenues in excess of $1 billion and over 90 locations across the United States. This acquisition effectively forms the third largest ag retailer in the United States, trailing only Nutrien Ag Solutions and Helena Agri-Enterprises. While the deal has not yet been officially finalized, the newly formed company will have a vast footprint, serving much of the Western, Southern and Midwestern United States.

KEY AG MERGERS & ACQUISITIONS

In February 2019, Nutrien reached an agreement to purchase Actagro, LLC, a developer and manufacturer of crop nutrition products, for $340 million. Through this acquisition, Nutrien gained 100% ownership of Actagro's US manufacturing facilities in Arkansas and California; Nutrien also acquired Actagro's R&D team and their R&D facility in California. This acquisition allows Nutrien to leverage Actagro's strong relationships and track record for developing quality products, and further strengthens Nutrien's role in providing high-quality crop inputs and solutions. (source)

Elders, the second largest farm services company in Australia, acquired Australian Independent Rural Retailers (AIRR) for $187 million in September 2019. This acquisition served to increase Elders' presence in the wholesaling market, as AIRR functions primarily as a buying group that wholesales rural merchandise, supplying goods to nearly 2,000 independent stores across the country. (source)

Syngenta acquired all relevant assets of the Cropio Group, which develops software solutions that provides imaging, record-keeping, and equipment tracking, in September 2019 for an undisclosed price. Recognized as a frontrunner in digital agriculture in Eastern Europe, Cropio has customers in over 50 countries and houses approximately 25 million acres of cropland data on its platform. Through this acquisition, total acres managed by Syngenta will grow to upwards of 98 million, indicating the strength and scope of Syngenta's digital partnerships. (source)

In December 2019, Telus acquired Decisive Farming, an ag tech platform that focuses on farm management, precision agronomy, and crop marketing, for an undisclosed price. Decisive Farming uses satellite imagery and remote sensing to provide real-time insights to farmers and is used to manage over 5 million acres and 40 different crop types in North America. (source)

Japan's Sumitomo Chemical purchased Nufarm's South American crop protection and seed treatment assets in September 2019 for $805 million. Sumitomo, which owned 16% of Australian-based Nufarm prior to this deal, will realize a growth in revenue from the South American crop protection market, especially in Brazil. Previously, Sumitomo had earned much of its crop protection revenue in North America. (source)

In November 2019, the J.R. Simplot Company agreed to acquire Pinnacle Agriculture Holdings, LLC, effectively unifying two giants of the crop input industry. Prior to the transaction, Simplot had major operations in the United States, Canada, Mexico, Australia, South America, and China, and marketed products in over 60 additional countries around the world. Through the acquisition, Pinnacle adds a domestic presence to Simplot's portfolio, adding over 1,400 employees and hundreds of crop advisors and retail locations across the United States. (source)

Plant Response and Koch Biological Solutions merged in November 2019 to form Plant Response Biotech, Inc. The new company is headquartered in Raleigh, NC and has R&D sites in California and Madrid. Leveraging the commercial presence of Plant Response in Europe and Koch Biological Solutions in North and South America, Plant Response Biotech plans to roll out 12 product lines over the next three years. (source)

In June 2019, KWS acquired Dutch-based Pop Vriend Seeds, a worldwide leader in supplying spinach seeds with customers in over 100 countries. Pop Vriend brings 80 employees and breeding expertise in spinach, beans, swiss chard, carrots, and red beets. The acquisition of Pop Vriend is KWS' first step in establishing a strong position in the vegetable seed sector, as KWS has committed to developing their vegetable seed business through breeding activities and organic growth. (source)

Marrone Bio acquired Finland-based Pro Farm Technologies in September 2019 for an enterprise value of $31.8 million, including $6.2 million in cash and 12.7 million shares of Marrone Bio stock. Pro Farm Technologies, a global leader in sustainable plant health solutions, has offices in Finland, Estonia, Uruguay, and Brazil and distribution agreements around the world. As a wholly-owned subsidiary of Marrone Bio, Pro Farm will increase Marrone Bio's technological capabilities through Pro Farm's proprietary technology platform, which is set to be released for the 2020-21 growing season. (source)

KEY FOOD MERGERS & ACQUISITIONS

In February 2019, the Ontario Teachers' Pension Plan acquired Washington-based Broetje Orchards, which grows and processes apples and cherries under the First Fruits brand. Prior to the sale, Broetje Orchards represented one of the largest privately-owned orchards in the United States, employing over 2,800 people at its peak and producing 7 million boxes of apples each year. Through this deal, the Ontario Teachers' Pension Plan acquired the 6,175-acre Broetje Orchard, First Fruits Marketing of Washington, LLC, and Snake River Housing, Inc. (source)

Sun World International, LLC announced in May 2019 that it had sold its leased and owned California properties to an unnamed investor group. The new entity, known as Famous Vineyards, will farm the table grape vineyards utilizing contracts with Sun Pacific. This strategic realignment is the result of Sun World's shifting focus from farming to genetics and fruit breeding, through its breeding and licensing business, Sun World Innovations. (source)

Equilibrium forged a strong partnership with Revol Greens over the course of the past thirteen months, with major events taking place in both in December 2018 and January 2020. In December 2018, Equilibrium invested US$11.3 million in Revol Greens' greenhouse operations. More recently, Equilibrium announced its partnership with Revol Greens to develop a 16-acre greenhouse in Tehachapi, California with a focus on lettuce and leafy greens. Equilibrium also purchased a 64-acre greenhouse in California, which was acquired from SunSelect Produce, a hydroponic vegetable grower. This greenhouse is part of Equilibrium and Revol Greens' plan to position Revol Greens as a leader in the technology and production of high-quality leafy greens in the United States. (source)

In January 2019, Church Brothers Farms acquired the commodity vegetable business of Growers Express, LLC. The transaction allowed Church Brothers to acquire the growing, harvesting, and selling of field-packed vegetable commodities which are currently marketed under the Green Giant Fresh label. Growers Express, which had been involved in the commodity vegetable space for over 30 years, will maintain the value-added segment of its business. Both Church Brothers Farms and Growers Express are based in Salinas, California. (source)

Salinas-based Taylor Farms purchased the assets of Covington, Kentucky-based Club Chef in October 2019. Club Chef, a processor that was previously owned by the Castellini Co., is recognized as a leader in the fresh-cut vegetable industry. This acquisition by Taylor Farms allows an increased level of focus in the fresh-cut vegetable space, while also establishing a strong partnership with the Castellini Co. (source)

Mucci Farms announced that it had acquired a controlling interest in fellow Canadian greenhouse grower, Orangeline Farms, in August 2019. The transaction included Orangeline's established 32-acre greenhouse, as well as 100 acres to be used for expansion. Orangeline Farms began operations in 2000 and is well known in the fresh produce sector for its production of sweet and hot peppers. (source)

In December 2019, Performance Food Group acquired Reinhard Foodservice LLC for US$2 billion, effectively making Performance Food Group one of the largest food distributors in the US. Prior to the transaction, Reinhart had 26 distribution centers across the United States, net sales in excess of US$6 billion, and was the fifth largest food service distributor in the U.S. Reinhart's capabilities are highly complimentary to those of Performance Food Group, which boasts 80 plus distribution centers across the U.S. and over US$20 billion in annual sales. (source)

Two Minnesota-based produce companies, J&J Distributing and H. Brooks and Company, were acquired by New Harvest Foods in August 2019. New Harvest Foods is controlled by the Dragonfly Group and sought to bring together two organizations that can create a customer-centric healthy foods company. By merging two well-respected companies, New Harvest Foods is poised to be a leader in the fresh produce space. (source)

Optimum Agriculture purchased Generation Farms, LLC and approximately 5,600 acres of land and processing facilities in December 2019. Generation Farms is a respected grower and shipper of Vidalia onions and has acreage in several counties in southeast Georgia. Following the acquisition, Optimum indicated that it planned to increase production of onions, watermelons, sweet potatoes, green beans, cabbage, and sweet corn in order to provide a steady supply of products to retailers throughout the year. (source)

SIGNIFICANT FUNDRAISING ACTIVITIES

In August 2019, Benson Hill Biosystems, a crop improvement company unlocking the natural diversity of plants, raised US$32.6 million in Series C funding.

AeroFarms, which develops aeroponic growing systems for producing plants without sun or soil, announced in July 2019 that it raised US$100 million of Series E Funding, led by Ingka Group.

New York-based indoor farming group, Bowery Farming, announced in November 2019 that it had raised US$50 million in Series B funding led by Temasek Holdings.

Gingko Bioworks, a Boston-based designer of custom microbes, raised US$290 million in Series E funding led by T. Rowe Price in September 2019.

Infarm, a Berlin-based vertical farming startup, raised US$100 million in Series B funding in July 2019. Funding was led by London-based firm Atomico.

In January 2019, Greenlight Biosciences, a privately-held biotech company, raised US$50 million in Series E funding led by Baird Capital and S2G Ventures.

Boulder-based Inscripta, Inc., developer of a scalable digital genome engineering platform, raised US$125 million of Series D funding in December of 2019 led by Paladin Capital Group.

Impossible Foods, a leader in the development of plant-based meats and cheeses, raised US$300 million in Series E funding in May 2019, led by Horizons Ventures and Temasek Holdings.

In early January 2020, Indigo announced that it had raised US$200 million in convertible equity and debt, bringing its total funding to US$850 million.

Vancouver-based Terramera, developer of plant-based crop protection products, raised US$45 million in Series B funding in September 2019.

Mile High Labs, the largest CBD extractor in the world and an end-to-end manufacturer of CBD oil, distillate, and isolate, announced the closure of a US$65 million term loan in April 2019.

Ninjacart, an online B2B platform focused on fresh produce, raised a total of US$100 million in Series C funding, while also raising US$4.2 million in debt financing in 2019.

Inari Agriculture Inc., a Cambridge-based ag tech startup, raised US$89 million in Series C funding in August 2019, led by Flagship Pioneering and Acre Venture Partners.

Ynsect, a developer of insect-based feeds based in France, raised US$125 million in Series C funding in February 2019, led by Astanor Ventures. Ynsect also earned a grant worth approximately US$22 million from the European Commission in June 2019.

VERDANT FOOD & AG DIGEST

The past year could be classified as a tale of two stories: one to remember, and one to forget. As an industry, we experienced weather events that caused substantial reductions to crop output and farm-level profitability; encountered economic and political headwinds that included trade wars, hyperinflation, and changes in government; and faced devastating disease outbreaks that threaten global food security. In the end, one word seems to capture the essence of those involved in the food and agribusiness industry: resilience.

Despite the headwinds, our firm still tracked considerable M&A activity across all aspects of the food and agribusiness value chain. According to Verdant's proprietary database of transactions covering the span of food and agribusiness, total observed deal volume during 2019 increased 8.4% compared to 2018. The average transaction size decreased from 2018, although Bayer's acquisition of Monsanto significantly influenced the prior year's average. Verdant observed fewer transactions of businesses with proprietary products and technology, but increased deal flow in crop protection and ag retail distribution. Growth markets, such as biologicals, digital and precision technology, and cannabis, maintained strong transaction volume and financial investment. Verdant also observed growing investments and transactions in the markets of protected / indoor growing of fruits and vegetables, identity preserved / specialty products, plant proteins, and innovative new breeding techniques.

In Verdant's view, after three years of the most substantial reorganizations the crop input industry has ever experienced, the stage is now set for return to some state of "normalcy." Meanwhile, new startup companies that are focused on disruptive technologies will challenge status quo and offer new products and services that lead to increased productivity, efficiency, and ultimately profitability at the farm gate.

Verdant anticipates that there will be five primary M&A drivers in the food and agribusiness industry in 2020:

1. "Decomoditization" of Commodity Ag: today's consumer is different than that of 10 years ago. They desire to consume food products that are sustainably produced, healthier and more nutritious, and offer transparency and traceability to the origin. More and more premiums exist today for farmers who are willing to adopt practices to deliver feed, grain and food ingredient products in a non-commoditized fashion.
2. Advancements in Digital Ag: for far too long the output from precision agriculture has been a collection of multicolored maps that are hard to interpret and utilize in the crop input decisions making process. A new era of data driven agriculture is fostering a new concept of outcome-based pricing of inputs, input selection for the acre as opposed to the field, traceability of grains from farm-to-fork, and even the creation of a secondary income source for farmers when their farms would otherwise lie dormant.
3. New Aged Breeding: an array of advanced breeding tools are now being utilized by today's breeders. Unlike predecessor technology that was based on transgenics, new breeding techniques accelerate a breeder's ability to achieve naturally occurring desirable outcomes such as reduced allergens, increased shelf life, and healthier plants. The European Union's decision to classify these new techniques in the same way as GMO products will cause them to fall behind the rest of the developing world.
4. Rethinking Distribution: more data is available for today's farmer than ever before, and we are living in an era where sharing this data is much less interpersonal than what was previously possible. This has led to more clarity about the effectiveness of crop inputs and the measurement of true ROI to the farmer. The demystification of the decision-making process increases pressure on distributors to deliver transparency, high quality products, and competitive prices.
5. True Commitments to Sustainability: for far to long the "sustainability" buzz word has been thrown around, but we are now seeing world leading food companies implementing their sustainability across the value chain. Beyond their own sustainable practices, these companies will also require their suppliers to follow the same standards.

In addition to the subset of transactions and industry trends that have been discussed previously in this report, the Verdant team has specifically identified several specific sectors and regions that were most impacted by deals in the past year, or that we expect will be impacted in the year to come. These reflections and predictions are reported on the following pages.

Inclement Weather

When we meet with professionals in the ag sector, we are often asked what we are hearing in the industry. The answer is an easy one – weather, weather, weather! The past two crop cycles have been very difficult due to weather complications. Weather issues have resulted in delayed or even aborted planting of crops and, in some areas, have resulted in significant delays in harvest. In the U.S., soybeans were being harvest in November and 65% of the corn in North Dakota was still in the field. The continuity and the severity of the weather-related issues are unprecedented. The farmer has taken a direct hit, but the impact is felt by those who supply products to the farmer as well, including marketers of seed, fertilizer, crop protection, propane for drying, and more. On the bright side, and in spite of the severe challenges, yields were better than expected and, in some cases, corn yields were near normal levels (which is amazing). The current projection is for a significant increase in U.S. corn planting in 2020, with acres expected somewhere in the mid-90 million acre range, and soybeans estimated to be 80-85 million acres. If U.S. farmers have favorable weather conditions in the spring, we may see better fortunes for them and their suppliers in 2020.

Dean Cavey, Managing Partner

Vegetables

People are changing their eating habits. They are not only demanding healthier food but also more knowledge about where the food comes from. They want fresh as opposed to processed food, and they are interested in how and where the food was produced. We are seeing interest in the acquisition of grower, packer, shippers of fresh fruit and produce. We are also seeing interest in the development of more protected production of vegetables in large, urban areas to provide locally sourced produce that is fresh and does not incur the high cost of freight from the west coast.

Increasing demand for fresh produce is resulting in increased interest in acquisitions of vegetable seed companies, especially those with proprietary breeding programs. We expect to see more transactions in the vegetable seed segment as new players enter the space and as demand for vegetables continues to rise.

Dean Cavey, Managing Partner

Ag Tech

The performance of the general agriculture market continues to disappoint, and with it comes the challenge for precision and digital technology companies to grain market adoption, notably those platforms focused on major row crops. Despite the difficult market conditions, Ag Tech deal volume was steady compared to 2018. The slight reduction of closed transactions from 2018 to 2019 was largely related to a drop in deals in the digital farm management segment, although there was a slight uptick at the end of the year and into 2020. I anticipate an increase in M&A activity in 2020 driven by 1) strategic companies' continued demand for technological innovation that can only be acquired; 2) continued pressure on startups from early stage investors to make returns; and 3) reduction in partnership structures that are undervaluing the technology companies at the benefit of those with market access. We've seen an increased interest for resource efficiency technologies (water, energy, and conservation), commodity monitoring and handling technology (identify preservation and specialty ingredients), and profitability optimization technology. Two deals in 2019 that we expect to be indicators for future consolidation were:

Intellifarms acquired by AGI- Hardware and software solutions that benefits grain growers, processors, and other participants in the agriculture market, notably through BinManager, a leading grain storage management solution
Decisive Farming acquired by Telus - Precision agronomics, crop marketing, and information management service that gives farmers a single platform for operational and profitability efficiencies.

Blake Croegaert, Director

Consumer Impact on Food & Agriculture

Despite urban populations growing larger and people becoming farther removed from production agriculture, today's consumer desires to know more about the origins of their food and how it was produced, sourced, and transported. The change has been enabled by growing wealth with a willingness to pay premiums for specialty, quality, traceable food ingredients, made further possible by improvements in technology. Millennials are now the world's largest workforce and are shaping food purchasing demand, often propelled by the influence of Gen Z, for healthy, sustainable, "natural" foods and ingredients. The consumer demand is working its way through the agriculture supply chain down to the grower. In 2019, we witnessed an increase in processers and food retailers directly contracting for specialty products in a closed loop system with traceability from field to fork. The closed model is being acquired by participants up and down the supply chain, generating deal flow across a wider channel. In addition to a significant increase in investments, notably in alternative proteins and plant-based foods, Verdant observed an increase in investments by downstream human and animal food, feed, and ingredients companies of businesses and assets focused on the supply of specialty commodities, identity preservation, and organic and non-GMO products. The trend is only expected to continue as wealth and influence grow for the younger consumer. Verdant expects to see consolidation in 2020 between entities traditionally focused on certain segments of the upstream or downstream input, production, processing, and food value chains. Nestlé's announced partnership with Merit in early 2020 is an example of collaboration and potential future acquisition in the coming year and beyond. (source)

Blake Croegaert, Director

Forage & Turf Grass

The worldwide grass markets have long been in a state of flux, plagued by waves of oversupply, economic downturn, and an ongoing dependence on government programs. Significant acceleration in M&A activities occurred in the late 1990s and early 2000s before the bottom fell out of the market. One of the most opportunistic areas for participants in this space remains the possibility of large-scale uptake of cover crops in large-acreage growing regions such as the Midwestern U.S. The grass seed industry in the Northern Hemisphere is dominated by a handful of European companies, the largest (worldwide) being DLF Seeds A/S. Meanwhile, the Southern Hemisphere has more regionalized leaders that vary by market, although PGG Wrightson Seeds is the leader in the Southern Hemisphere. Thus, the acquisition of PGG Wrightson by DLF Seeds (announced in 2018, closed in 2019) has only further solidified the world leader and created significant distance between the number one and number two company.

Garrett Stoerger, Partner

Agricultural Input Distribution

The sale of agricultural input products to farmers has historically been driven by three key factors: 1) relationships; 2) service; and 3) price. During much of the last ten years, elevated farm level profitability has enabled farmers to pay a higher price-point in exchange for better service. However, soft commodity prices have driven farm-level profits into the ground and caused growers to prioritize price ahead of relationship and service. This has given rise to a new type of input provider – one that has been labeled as "disruptive" by placing emphasis on low-cost over service – which has its place in today's market.

Companies who have long been mainstays in the ag input distribution arena continue to shop for opportunities to acquire independent wholesale and retail outlets in core geographies. Some of these acquisitions will be privately held businesses with 2-3 storefronts, while others will be takeover bids that are very significant in size and scope. In addition to the U.S.-based transactions that have been previously mentioned in this report, there are several noteworthy global transactions in ag retail that took place last year:

- Nutrien's acquisition of Australian based Ruralco for €366 million significantly enhanced Nutrien's already dominant position on the continent, where they conduct business through their "Landmark" brand.
- Elders expanded its reach in agricultural input distribution with its acquisition of Australian Independent Rural Retailers for AU$157 million. AIRR is comprised of 240 independent member outlets and another 100 pet food stores. The acquisition of AIRR gives Elders a national wholesale platform.
- Sumitomo Chemical Company's takeover of Nufarm's South America crop protection and seed treatment business, with operations in Brazil, Argentina, Colombia and Chile, for €1,040 million greatly enhanced Sumitomo's sales network in South America.
- Bunge acquired a 30% share of Agrofel Grãos e Insumos, a Brazil-based grain originator and provider of crop inputs such as seeds, plant nutrients and pesticides. The acquisition further bolsters the established position that Bunge has in the South American market. The financial terms of this deal were not disclosed publicly.
- Mitsui & Co. acquired a 62% share of Belchim Crop Protection, a Belgium based importer, exporter and distributor of crop protection products across Europe and North America. This strengthens Mitsui's agrochemical distribution platform, which is consistent with its commitment to nutrition and agriculture as part of its growth initiative.

Garrett Stoerger, Partner

European Vegetables

In 2019, M&A activities in the European seed world were quite limited after the huge acquisition of Monsanto by Bayer but with one significant exception: KWS's acquisition of Pop Vriend.

After the transfer of the Bayer seed businesses assets to BASF, four seed leaders, Bayer, Syngenta, Limagrain and BASF were operating in field and vegetable seeds. Two seed leaders, Corteva and KWS, were only involved in field seeds, while both had clearly and publicly indicated their interest in adding vegetable seeds to their existing businesses.

The company profile of Pop Vriend was particularly attractive for the different seed actors:

- One of the rare family business available after many years of consolidation;
- A mid-size activity, whose potential valuation was accessible for several existing seed players; and
- A worldwide leadership position in a quite profitable specie, with a market growth perspective.

In fact, Pop Vriend was an opportunity for:

- Consolidation for the existing vegetable seed leaders; and
- Entrance into the vegetable seed market for the other seed leaders. On this aspect, Pop Vriend was not a full platform, operating in several species, and specifically in the most important ones. But the size of the existing business, its financial performance, and its uniqueness afforded Pop Vriend a high level of strategic attractiveness.

The outcome of the selling process is full of insights:

- Now five out of the six world seed business leaders are involved both in field and vegetable crops. Corteva is the only one to have not joined the club. We must remember that 2019 was their first year of being a standalone company, meaning that their priority focus was probably not on diversification.
- KWS has successfully implemented its strategic goal to enter the vegetable seed sector, through the acquisition of a company whose roots and history were highly compatible with its own. They are also located quite close geographically.
- What has been released by KWS on the enterprise value of the Pop Vriend acquisition - 20% of its market capitalization, i.e. around € 400 million, means that the vegetable seed companies maintain a very high valuation level: more than 5x Sales, and around 15x EBITDA.
- Even with the strategic premium that KWS has logically paid, that confirms the high attractiveness of the vegetable seed sector, and the potential competitiveness for future targets.

Emmanuel Rougier, Senior Global Advisor

European Field Crops

In July 2019, two major Southwest French cooperative companies, Caussade Semences Group and Euralis Semences, announced their intentions of merging. The indications are that this merger will take place in the near future. Caussade Semences is an important maize seed company that is also involved in the production and marketing of sunflowers, rapeseed, small grain cereals, soybeans, forage crops, protein crops and cover crops. Over half of the Company's sales are maize, and approximately 25% are sunflower. The group has 613 employees and sales amount to approximately €160 million; 60% of sales are made outside of France.

Similarly, Euralis deals in the same kind of seeds and has a turnover of approximately €215 million with 1,300 employees. It is a bigger and more successful group than Caussade, which implies that this this is a rescue deal which has likely been encouraged by the French authorities. Both groups have quite large research activities which will presumably be rationalized along with all seed production. This deal effectively means that there are only 3 agricultural cooperative groups in France who have major research supporting their seed activities: Groupe Limagrain, Euralis, and Maisadour. This large-scale consolidation has taken place over the past 40 years, when there were well over 10 major active cooperative seed research groups. This consolidation mirrors what has taken place in the private space, as well.

David Palmer, Senior European Advisor

Microbiome

Financial investment into the plant/soil microbiome product sector continued to grow during 2019. There has been a rather slow evolution of strategy in the sector, and this includes the critical balance of spending between R&D, production, sales, and then exit strategies. Some companies have pulled back from the multi-species "consortium" approach to focus on singular bacterial or fungal components, and this is driven by the complexities of co-fermentation and/or sequential formulation. Others still confront the challenges of bringing any fermentation-derived product into the agricultural markets with attractive ROI and margins on sales. However, there is an encouraging growth in real sales, and gains in the market share of biologicals in the traditional ag-chem markets. As always, the difference between successful and unsuccessful companies in this sector will be an understanding that science does not necessarily translate into profitable operations. Success will be based on solid, consistent and achievable production projections, unrelated to short-term hype sold to potential investors in newly attractive markets.

Alan Gould, Senior Technology Advisor

Advanced Breeding Technologies

The widespread future impact of gene editing technologies on product development in crop genetics is difficult to underestimate. The technology has evolved far beyond the early CRISPR/Cas9 with its problems on off-target effects. Next generation CRISPR approaches will probably eclipse the earlier technologies such as zinc fingers and TALENS. However, the uncertain landscape of current licenses, and patent litigation, especially in Europe, may offer opportunities for the older technologies. The real question is not about the gene editing technologies themselves, but about the commercial attractiveness of the traits that they can provide.

This boils down to the "How many traits can the grower afford at point of seed sale?" If the days of transgenic technology and stacked transgenic traits are ending, trait development companies need a different value realization model that goes beyond trait licensing. Imagine a situation where corn lines are carrying traits for herbicide tolerance, insect resistance, disease resistance, drought tolerance, improved photosynthetic efficiency, apomixis for hybrid genetics, and many others. Many many new traits can be developed, and each one has similar and predictable sunk costs in terms of discovery, testing, development, and commercialization.

The bottom line is this: The major companies must have analyzed the balance between trait value in the marketplace, the cost of developing them, and how to extract value. What will the grower be willing to pay for a bag of multiple-traited seed, before retreating to cheaper non-traited traditional varieties?

Alan Gould, Senior Technology Advisor

South America

The South American continent, with diverse crop activities and heterogenic ecosystems, is a food and agriculture net exporter with a surplus of products destined to supply offshore markets. This key investment driver is what makes companies think of a long-term strategy in their capital deployment for the region which partially offsets the general political instability that existed throughout 2019. The two main trends of the past year have been deals involving Ag Inputs and Ag Tech.

The most noteworthy transaction was Sumitomo's $805 million acquisition of Nufarm's crop protection and seed treatment business in South America. In the same line of Ag Inputs and Ag input retail, we highlight Patria Investments' acquisition of Impacto and Bunge's minority investment in Agrofel. Both target companies are involved in Ag Input retail activities in Brazil. Moreover, we can name deals involving biological inputs which are also a hot topic in terms of M&A criteria. Specifically, (cont.)

Sapec acquired Microquimica of Brazil, and Koppert acquired Nitrasoil of Argentina. Lastly, Ag Tech is certainly a field of increasing attractiveness for many, with numerous local startups delivering innovative solutions for farmers. The best known representation of this promising area was the $23 million series B fundraising round closed by Agrofy, an agriculture input digital marketplace with a presence throughout LATAM.

As a recap, Ag Inputs and Ag Tech have dominated the agriculture M&A landscape over the past year in South America. For 2020, we foresee increasing deals involving Ag Tech, especially in Brazil, Argentina and Chile.

Felipe Lanusse, South American Advisor

Luis Casanova, South American Advisor

Produce

Two significant transactions in the fresh produce segment in 2019 signaled the likelihood of further consolidation in the sector in 2020 and beyond.

Taylor Farm's acquisition of Earthbound Farms was met with a mixed reaction from the produce industry insiders. It was encouraging that the Earthbound brand was back in the hands of a "Strategic" company instead of a CPG firm. EBF was acquired several years ago by White Wave Foods in their efforts to expand their portfolio of "on trend" foods. Eventually, Danone acquired White Wave Foods as they outlined a path to acquire a healthier portfolio of brands. Earthbound Farms struggled throughout the period of ownership by CPG firms. It is my view the CPG's made some strategic mistakes by focusing only on value added and not investing in forward processing and distribution. Taylor Farms and others captured a lot of EBF's market share. Taylor Farms was able to outmaneuver the leadership at EBF by providing retailers with a one stop approach of conventional and organic products supplied from facilities close to the retailer. The final straw may have been when Taylor Farms acquired EBF's largest grower, Mission Ranches, significantly compromising EBF's ability to source raw product and depressing their selling price for the company.

It was sad in some respects to watch the demise of Earthbound Farms as they were the first significant organic produce company and brand in the industry. In their heyday, EBF was the only choice in organic salads, as they helped many retailers get into organic produce by providing value added and many key organic commodities. It is just a reminder that the produce industry is an "insiders' game." CPG's and financial buyers often overlook the need to have leadership in their produce companies that understands the nuance of the produce world. It is especially important to know the buyers well and to be able to adapt to their needs and the competitive threats.

A second significant headliner in the produce sector was Butterfly's acquisition of Bolthouse. On the surface, this acquisition can be looked at as just another private equity acquiring a produce company. After all, the Bolthouse family divested this company several years ago to another private equity who eventually sold it to the Campbell's Soup Company. During this period of non-family ownership, the carrot category saw a decline in consumption. Pricing for carrots stayed relatively stagnant while costs increased. The juice category saw many new entrants squeezing shelf space for all players. One can only imagine the impact these two realities had on margins and ultimately profit. It was reported that Campbell's took a huge write down on the Bolthouse business and forced their CEO to resign in part because of the performance at Bolthouse.

The bright side is that Butterfly saw the importance of bringing in a strong leader. They made Jeff Dunn the CEO. Jeff was the CEO prior to the sale to Campbells. Jeff understands the importance of innovation and the long-term impact this will have on sales and margins. Bolthouse came out strong right after the deal closed with a new portfolio of products launched at the PMA convention in October. It is reasonable to expect that Jeff will drive more innovation. I would not be surprised to see them bolt on some complimentary companies through acquisition. Campbell's learned a tough lessen much like Danone and White Wave. Produce is an "insiders' game." If you don't respect the nuance of the industry and operate the fundamentals well, you will lose ground to your competitors.

Don Goodwin, Senior Produce Advisor

Cannabis

U.S. and international policy deregulation for both hemp and marijuana during 2018 and 2019 has brought a surplus of startup companies, investors, and strategics into the market. The value of the hemp market has gone towards high-CBD products. The downstream branded and wholesale retailer CBD and marijuana markets have received most of the deal volume and media coverage to date, but there's also been considerable activity in 2019 to improve the upstream segments, notably genetics, indoor production tech, harvesting mechanization, and processing. One deal that involves both retail and indoor production technology is Cresco Labs' acquisition of Origin House, effectively combining Cresco's vertically-integrated portfolio with Origin House's distribution capabilities. This deal was initially announced in April 2019 and closed in early 2020.

As domestic and international policy continues to ease, we expect to see continued consolidation. It's likely to continue in the downstream channel but look for deal announcements in the upstream seed genetics segment in 2020. (source)

Andrew Johnson, Associate