SMART MICRO-IRRIGATION SOLUTIONS PROMOTING LOCALIZED FOOD PRODUCTION IN WATER-SCARCE REGIONS. PLAYERS LIKE LNN ARE LIKELY TO EMERGE AS WINNERS.

*Key takeaway: The world continuously faces challenges to feed its growing population and irrigation solutions have and will continue to play a critical role to ensure the world meets these challenges. According to the Food and Agricultural Organization (FAO), irrigated agriculture contributes 40% of the global food supply suggesting that optimized water use, may play a material role to increase global crop yields. Smart irrigation solutions can help farmers adapt to changing weather patterns that impact water resource availability. Increased irrigation and water resource solutions present promising agricultural production outcomes for water-stressed regions like the Middle East and North African (MENA) region. From an investment perspective, companies in the micro-irrigation segment such as* **Lindsay Corporation** *[NYSE: LNN] are developing advanced data-enabled remote irrigation solutions to enhance local food production in these regions. In June 2024, LNN entered into a significant partnership to provide its irrigation systems and FieldNET remote management and scheduling technology in select areas of the MENA region. We believe the micro-irrigation segment, including LNN, will likely emerge as beneficiaries of smart and sustainable irrigation solution adoption.*

The Importance of Irrigation in Global Agriculture

The expansion of irrigated agriculture has increased crop production which may temporarily put localized pressure on freshwater resources. More than half (52%) of localized irrigation expansion occurs in areas that experience water stress. It is these areas that offer companies such as LNN an opportunity to provide solutions to optimize water resource management in an economically viable manner.

Over 3.6 million square kilometers of land worldwide currently utilize some form of man-made irrigation. According to a U.S. Geological Survey report, however suspect, irrigation accounted for 42% of the country's total freshwater use in 2015. Approximately 2,700 cubic kilometers of water are deployed globally each year for irrigation purposes. The increasing demand for water has become a headline concern, particularly in regions already experiencing water stress. More than 40% of global agricultural production relies on groundwater extraction which will require solution-enabled optimization practices to ensure that food production can continue to meet demand requirements as localized water source stress inevitably occur.

Chart 1: Share of Cropland Area Equipped for Irrigation by Region and Subregion
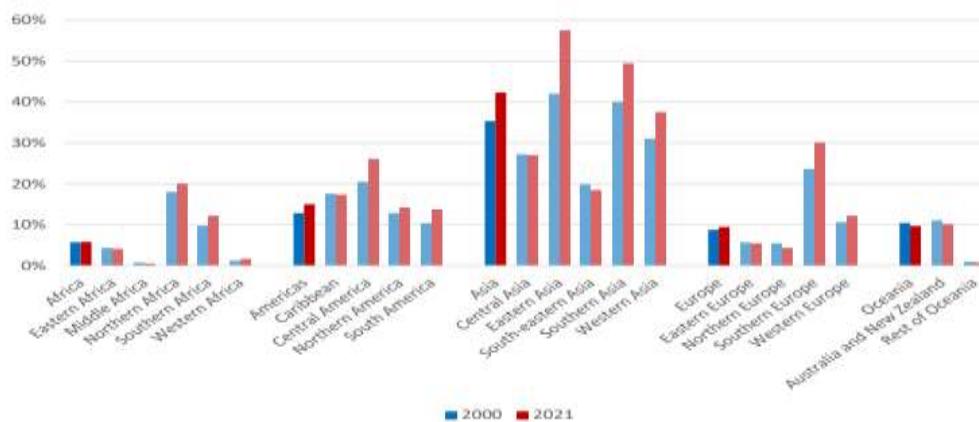
Source: Intro-act, Food and Agriculture Organizations of the United Nations (FAO)

While irrigation can help mitigate the effects of temperature fluctuations in some areas, it can also exacerbate stresses in other regions. Irrigation has the potential to enhance nitrogen loading into groundwater which can increase eutrophication and unwanted runoff foliation, creating competition for valuable soil inputs. Unmanaged irrigation can result in issues related to waterlogging, mineral leaching, and uneconomical water use.

To address this issue, it is essential to transition to managed agricultural systems that reduce excessive and uneconomical freshwater use compared to conventional methods. This can be achieved through modified crop cultivation strategies, water conservation practices, and, when inexpensive energy is available, wastewater treatment for irrigation purposes. Additionally, adoption of precision agriculture solutions and leveraging Internet of Things (IoT) sensor technologies commercial water consumers can maximize agricultural outputs while minimizing water resource costs. **The U.S. government recently earmarked $400 million to address irrigation funding in the western states**. The funding will help farmers continue commodity production while conserving water by promoting micro-irrigation practices across agricultural communities.

Smart Micro-Irrigation: The Potential Gamechanger for Water-Stressed Regions

One solution for enabling more economically viable agriculture worldwide that has gained significant attention in recent years is smart irrigation systems. These innovative technologies utilize advanced sensors, data analytics, and machine learning algorithms to optimize irrigation practices, reducing waste and improving crop yields. These systems not only save time and labor but also enable farmers to make informed decisions based on real-time data analysis. This data-driven approach allows for precise water delivery, promoting sustainable water use and conservation. Moreover, optimized irrigation leads to improved crop health and yield, making it a crucial component of economically sustainable agriculture.

The benefits of smart irrigation solutions extend beyond just water conservation and increased crop yields. According to the Irrigation Association, efficient irrigation technologies can also contribute to cost savings for farmers, making agriculture a more economically viable sector. This is particularly important in regions where food security is a pressing concern. In addition, smart irrigation solutions can help minimize water runoff supporting long-term ecological balance. Data integration allows for real-time monitoring, predictive analytics, and early detection of anomalies in the network. Smart irrigation systems also contribute to optimized energy consumption, minimizing water waste, and yielding customized irrigation solutions tailored to each type of crop based on soil moisture and plant vigor indexes obtained from satellite images.

Chart 2: Key Features of Smart Irrigation Systems

Source: Intro-act

At the heart of these smart irrigation systems are cutting-edge technologies that integrate data analytics, real-time monitoring, and intelligent algorithms to optimize water resource use in agriculture. Key features include soil moisture sensors that measure the moisture content in the soil, providing accurate data on crop water needs. This information enables farmers to avoid overwatering or underwatering, promoting healthier plant growth while minimizing water waste. Weather forecast integration leverages real-time weather data to anticipate environmental conditions. By adjusting irrigation schedules based on upcoming weather patterns, farmers can adapt to changing circumstances, ensuring efficient water management and minimizing the risk of crop damage. Through mobile applications or online platforms, farmers can remotely monitor and control irrigation systems, saving time and labor while allowing for quick adjustments in response to unexpected events or changes in crop conditions. Data analytics also play a vital role in these systems, enabling farmers to make informed decisions, optimize resource allocation, and improve overall farm management practices.

Thus, we believe companies that are developing innovative data-driven remote irrigation solutions, which conserve water and boost agricultural productivity, will offer agricultural industry investment opportunities. Companies such as **Lindsay Corporation [NYSE: LNN],** are likely to benefit as the irrigation resource management trend continues.

Company Spotlight: Lindsay Corporation [NYSE: LNN]

Lindsay Corporation is a leading global manufacturer and distributor of irrigation and infrastructure equipment and technology. The company has been at the forefront of innovation since its establishment in 1955. The company's agricultural irrigation solutions include center pivot and lateral-move systems, remote irrigation management and scheduling technology, engineering services, and Industrial Internet of Things (IIoT) solutions. In addition to agriculture, LNN also manufactures equipment for infrastructure projects, such as road safety and traffic management.

The company has announced plans to invest over $50 million in its largest global manufacturing facility in Lindsay, Nebraska, over the next two years. This investment will accelerate the development of innovative products, including the Smart Pivot, and align with the company's strategic growth plan. The modernization of the facility will include implementing Industry 4.0 technologies such as data connectivity, analytics, artificial intelligence, automation, and robotics. The facility will also house new equipment and advancements in galvanizing, a core process for manufacturing pivot irrigation systems and road safety products. Additionally, the facility's footprint will be expanded by 40,000 square feet to increase capacity and capabilities in metal forming.

In June 2024, it entered into a significant partnership to provide its Zimmatic irrigation systems and FieldNET remote management and scheduling technology in the MENA region. The multi-year agreement, valued at over $100 million, is the largest project in LNN's history and aims to support localized food production in the region. The FieldNET technology plays a crucial role in this project, providing growers with real-time monitoring and control of irrigation systems, as well as customized recommendations based on millions of agronomic data points synthesized with artificial intelligence. The partnership is expected to have a significant impact on food security in the region, with pivot shipments beginning in the F4Q24 and continuing through 2025.

LNN, however, sees some near-term challenges in the U.S. agricultural sector including decreasing corn and soybean prices, and the USDA's estimated net farm income decline from $155.9 billion in 2023 to $116.1 billion in 2024, driven by decreases in government support payments (16%), cash receipts for crops (6%), and increases in cash expenses (4%). U.S. farm balance sheets, however, remain strong following three years of profitability. In Brazil, the market is tempered by lower commodity prices and limited credit availability. Project opportunities in developing international markets, however, continue to be active due to food security concerns.

In contrast, the infrastructure sector is experiencing a boost. The Infrastructure Investment and Jobs Act (IIJA) has marked the largest infusion of federal investment into infrastructure projects in over a decade, with $110 billion in incremental funding for roads, bridges, and other transportation projects. This additional funding is expected to support

higher demand for LNN's products and solutions. In 2023, contract awards reflected an increase of 19% for highways and 12% for bridges compared to 2022. Public capital spending for highways and bridges is expected to grow by approximately 13% in CY24. While the timing and scope of construction projects can be impacted by various factors, LNN's infrastructure segment is well-positioned to benefit from this growth.

LNN's F3Q24 financial results were impacted by softening agricultural market conditions, which led to tempered demand in North America and Brazil. Despite this, the company secured a significant multi-year irrigation project in the MENA region, worth over $100 million. This project, along with new sales of its Road Zipper System and growth in lease revenues, contributed to improved consolidated margin performance. Revenues for the quarter decreased by $25.4 million compared to the same period last year, while operating income declined by $7.0 million. Diluted EPS was $1.85, which included recognition of a one-time income tax benefit of $0.44.

The Irrigation Segment experienced a $27.7 million decline, primarily due to lower unit sales volume and slightly lower average selling prices in North America. International revenue also decreased by $20.9 million, while order activity remained constrained due to the impact of lower commodity prices on farmer profitability and credit availability. Operating income for this segment declined by $11.2 million, primarily due to lower irrigation revenues and the resulting impact of deleveraging of fixed operating expenses. The Infrastructure Segment reported an increase in total revenue of $2.4 million, driven by project sales and higher Road Zipper System lease revenue. Operating income for this segment also increased by $2.7 million, primarily due to higher revenue and a more favorable margin mix of revenues.

Lindsay Corporation's stock price has risen 7.6% in the past month, in contrast to the S&P 500's -4.6% decline. This uptick follows stronger-than-expected fiscal third-quarter earnings despite demand softness. With anticipated growth from international markets and improved infrastructure margins, the company presents a strong value proposition. LNN is trading 17.9x TTM eps, below the S&P 500's 26.6x and 3.8% lower than its previous 4 quarters— Lindsay Corporation presents a longer-term investment opportunity as capital availability reaccelerates and commodity prices rebound.

Chart 3: LTM Stock Performance – LNN Vs. S&P 500
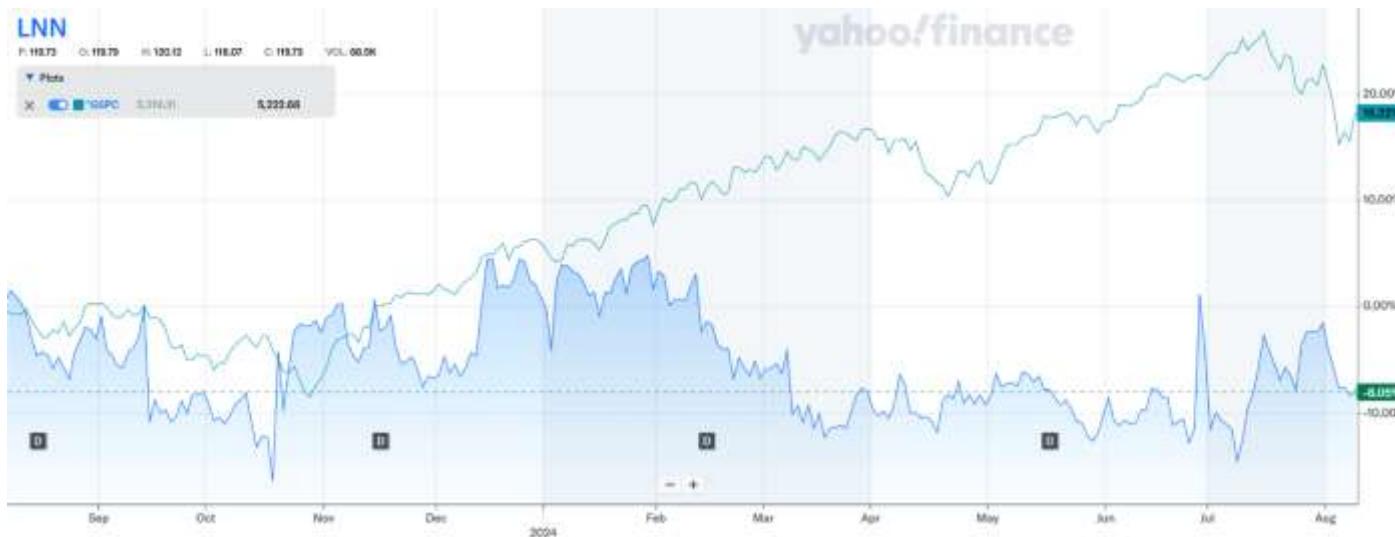
Source: Intro-act, Yahoo Finance

AGTECH NEWS

INDUSTRY TRENDS

Agriculture Market Set to Surpass USD 57 Billion by 2032. The digital agriculture market is poised to surpass USD 57 billion by 2032, driven by the need to increase food production to meet the demands of a growing population. Key technologies fueling this growth include Internet of Things (IoT), Artificial Intelligence (AI) and Machine Learning (ML), drones and remote sensing, blockchain, and big data analytics. These innovations enable farmers to optimize resource use, reduce waste, and adopt sustainable practices, leading to increased profitability and long-term viability. For consumers, digital agriculture ensures greater transparency and food safety, allowing them to make informed choices and support the fad of "sustainable" farming practices. Read more. *(Global Agtech Initiative)*

Chart 4: Global Digital Agriculture Market – Overview

Source: Intro-act, Global Market Insights

Agtech retailers team to fight potential China drone ban. Agricultural drone distributors have formed a coalition to fight a proposed ban on Chinese-made drones, which could impact the US crop spraying market. The group, representing 80% of the market, will also advocate for continued consumer access to products and address broader cybersecurity concerns in agricultural technology. They argue that DJI's drones do not store data or survey restricted airspace, and the company has demonstrated a commitment to security. Read more. *(AgricultureDive)*

Emerging Tech Research - Agtech. US equities saw significant gains in H1 2024, but agricultural technology (Agtech) stocks substantially underperformed. Animal biotech was the only segment to rise, with a 5% average increase. Indoor farming solutions and plant biotech segments declined by 28% and 26%, respectively, due to both fundamental softness and macroeconomic factors such as inflation and high interest rates. Meanwhile, animal agriculture logged a median enterprise value-to-revenue multiple of 3.1x in H1 2024, up from 2.4x in 2023, with companies expected to achieve a median 35% gross profit margin in 2024. Read more. *(Pitchbook)*

Chart 5: Agtech Public Comparable Valuation Trends - EV/LTM EBITDA
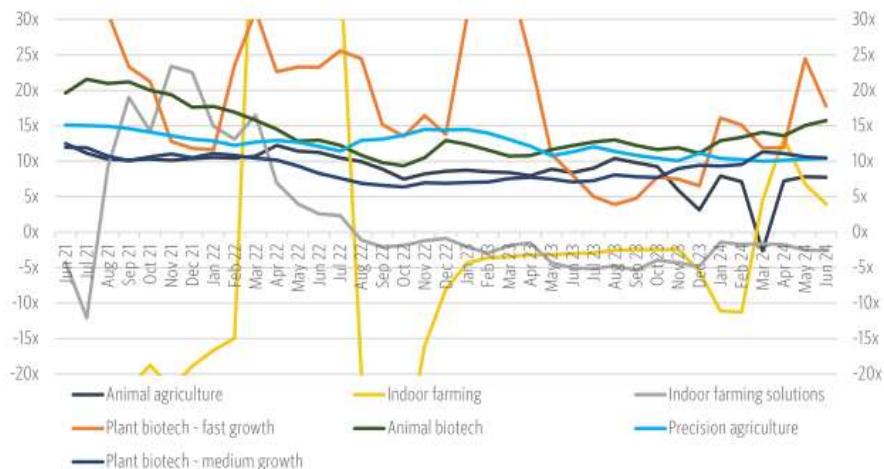
Source: Intro-act, Pitchbook

Agriculture Annual Report Finds the Global Agricultural Drone Industry is Booming. DJI Agriculture's annual report reveals the global agricultural drone industry is booming, with over 500 million hectares of farmland treated worldwide by June 2024. The rapid adoption has led to substantial savings in water (210 million metric tons) and pesticides (47,000 metric tons), as well as a reduction in carbon emissions equivalent to 1.2 billion trees. Governments have begun to liberalize regulations, and the report highlights best practices for farmers, technological advancements, and case studies showcasing the industry's growth and potential. Read more. *(AgriTech Tomorrow)*

Chart 6: Overview of the Global Agricultural Drone Industry
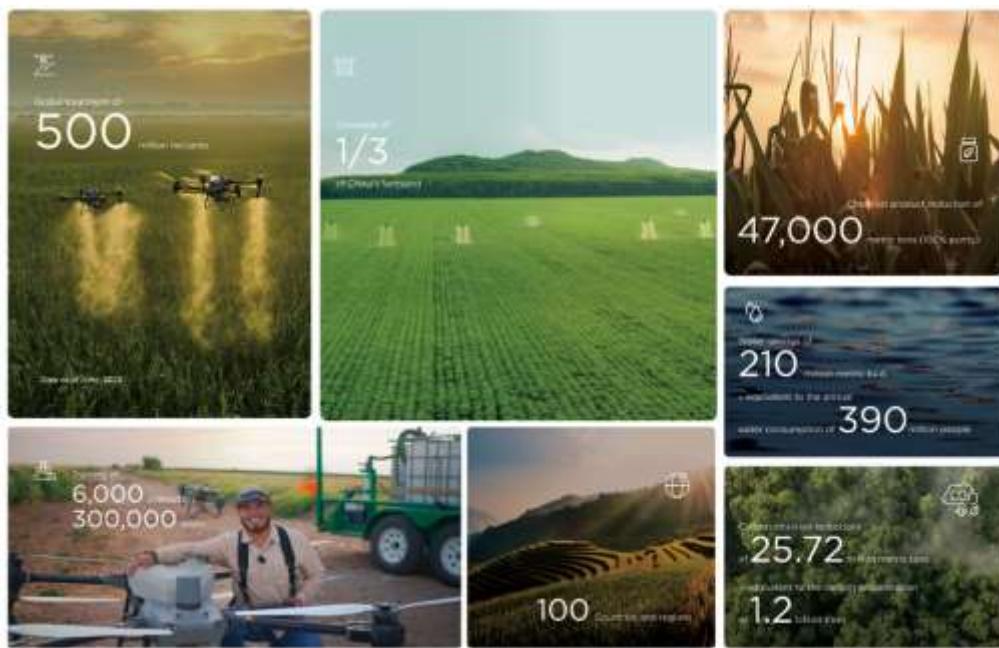
Source: Intro-act, DJI

Farms brace for grasshopper invasion. Farmers in Western states are preparing for a potential grasshopper invasion this summer as drought conditions create an ideal environment for the pests. Grasshoppers and Mormon crickets are spreading across at least seven states, causing millions of dollars in damage to crops last year. The University of California Cooperative Extension suggests, however foolishly, that climate change is likely contributing to the increase in pests, with warmer soil temperatures allowing weeds and insects to appear earlier in the spring. The impact on agriculture is significant, with farmers facing reduced crop rotation opportunities, increased weed growth, and pest migration. Read more. *(AgricultureDive)*

Agroforestry carbon services face testing times after raising less than $10m in H1 2024. Agroforestry carbon services companies, which support farmers in adopting sustainable practices that sequester and store carbon, have raised only $9.7 million in the first half of 2024, a significant drop from the $100 million raised in the same period last year. The industry faces challenges engaging farmers, with low ROI being a major barrier, and controversy surrounding any perceived or real value of carbon certification and offset providers., Some companies, however, have managed to secure seed round deals, including Downforce Technologies, Seqana, and Jejakin, which are pioneering land management solutions, soil monitoring SaaS, and climate tech projects respectively. The industry's resilience is tested as it navigates a tough road ahead. Read more. *(AgFunder News)*

Chart 7: Largest Deals in the Agro Carbon Services Sector over the Last 3 Years
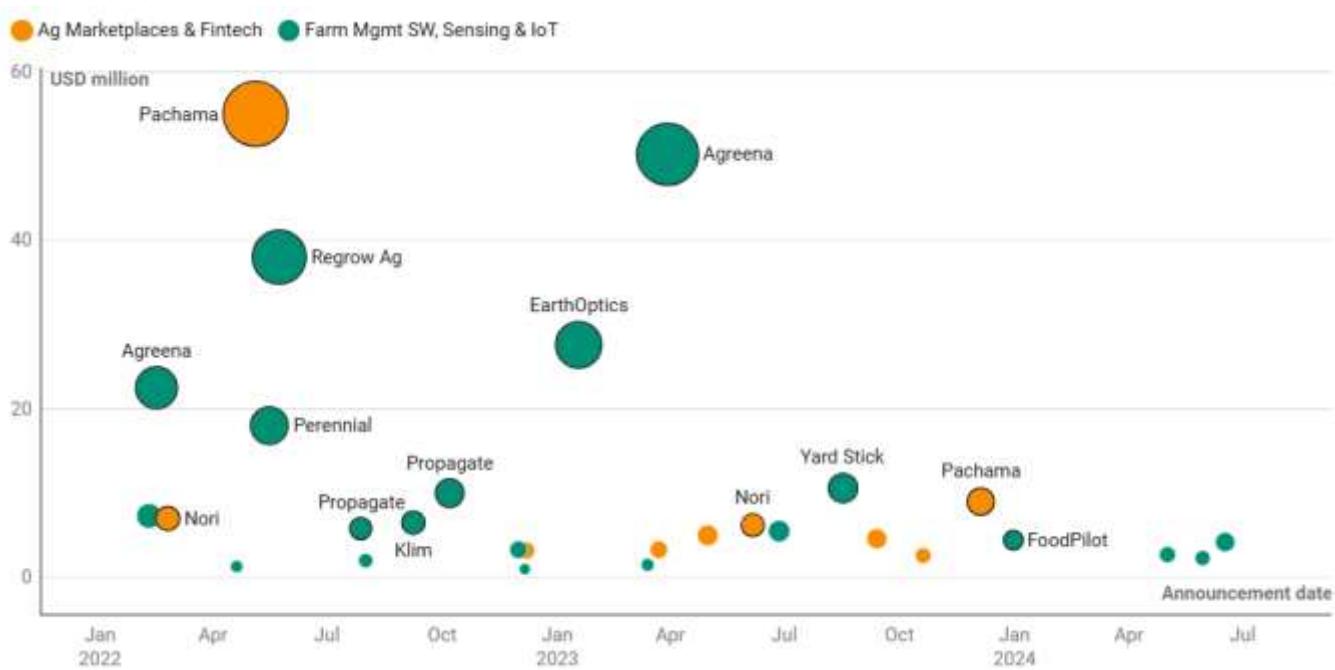
Source: Intro-act, AgFunder

REGULATORY UPDATES

White House unveils guidance on slashing methane, purported super pollutant emissions. The White House unveiled strategies to slash "greenhouse gas" emissions generated by "climate super pollutants," including methane, hydrofluorocarbons, and nitrous oxide. The Biden-Harris administration hosted a summit to discuss reducing emissions from these pollutants, proposing solutions such as enhanced monitoring through commercial aircraft and satellites, thermal reduction units for nitrous oxide elimination, and methane leak detection technologies. The meeting concluded with several strategies and proposals, including collaborations between United Airlines and NOAA's Global Monitoring

Lab, and Ascend Performance Materials' plan to install a thermal reduction unit at its Florida facility. Read more. *(AgricultureDive)*

Rantizo Receives FAA Approval for Advanced Drone Operations. Rantizo, the largest drone spraying network in the country, has received FAA approval for advanced drone operations, allowing service hub operators to swarm up to three drones over 55 pounds without a visual observer and at night. This approval enables increased productivity, flexibility, and efficiency, as well as the ability to cover more acres and spray during favorable weather conditions. The amendment also allows for flying without a visual observer and multiple drones at once, boosting operator productivity and reducing exposure for pollinators and farm workers. Read more. *(Global Agtech Initiative)*

Heinen Brothers Agra Services and Kelly Hills Unmanned Systems Announce FAA-Approved UAS Test Range. Heinen Brothers Agra Services and Kelly Hills Unmanned Systems have received FAA approval for a 49,000-square-mile UAS test range across four states. The range will support advanced drone testing for agricultural applications, accelerating the commercialization of UAS technologies in agriculture through collaboration and innovation. The grand opening event featuring test flights is scheduled for August 22 at Kelly Hills Unmanned Systems in Seneca, Kansas. The initiative highlights Kansas' strengths in aviation and agriculture, offering opportunities for stakeholders to explore "climate-friendly" precision agriculture. Read more. *(iGrow News)*

Chart 8: Fixed-Wing Aircraft Operated by Heinen Brothers Agra Services

Source: Intro-act, Heinen Brothers Agra Services

INNOVATIONS

BeeHero launches Pollination Insight Platform 2.0. BeeHero has launched Pollination Insight Platform 2.0, an in-field sensing solution that measures pollinator activity to improve pollination efficacy and increase yields. The upgraded platform features expanded pollinator identification, enhanced sensor design, advanced monitoring capabilities, innovative heat map technology, and comprehensive field coverage. It provides real-time data-driven insights and predictive models for growers, allowing them to identify preferred foraging times, assess bee activity, and build predictive models for yield and pollination success. Read more. *(The Packer)*

New AI assistant to simplify access to agricultural data for professionals. Stratovation Group has launched AgriSearch Assistant, an AI-powered tool providing agricultural professionals with simplified access to credible data from sources like USDA, ERS, NASS, and land-grant universities. The free tool, available to ChatGPT users, aggregates information from institutions, streamlining the process of finding data. It also highlights the work of governmental organizations and land-grant universities, providing a source for the data. Read more. *(Future Farming)*

Nestlé develops technology to reduce fat in dairy ingredients. Nestlé has developed a technology to reduce fat in milk powder by up to 60% without compromising on quality, taste, and creamy texture. The process involves binding larger milk protein clusters during manufacturing, allowing for large enough aggregates to provide a creamy mouthfeel while being small enough not to have a perception of sandiness. This innovation is initially being used in Ninho Adulto, a popular milk powder in Brazil, with plans to expand to other dairy products and locations globally. The technology aims to offer healthier options without compromising on taste, aligning with Nestlé's goal to increase sales of nutritious products by 50% by 2030. Read more. *(AgricultureDive)*

Precision AI Unveils New Spray Drone: Is This the Dawn of a New Era in Crop Input Application? Precision AI has unveiled the Stratus AirSprayer, a "flexwing" drone system designed for crop input applications. The drone boasts a longer flight time of up to five hours, higher payload capacity, and greater efficiency compared to conventional rotary and fixed-wing UAVs. It features a parachute design for precise application, an adjustable spray bar angle for real-time droplet size control, and advanced software capabilities for precision spraying through its SEED software. The Stratus AirSprayer is expected to revolutionize crop protection with its cost-efficiency and operational capabilities, potentially transforming precision agriculture. Read more. *(Global Agtech Initiative)*

Chart 9: Precision AI's "Stratus AirSprayer" Drone

Source: Intro-act, Precision AI Inc.

Taranis Launches AI-Powered Agronomic Assistant. Taranis has launched Ag Assistant, an AI-powered agronomic assistant that integrates data sources from images, text, and audio to provide field-specific insights and actionable recommendations. This revolutionary tool is powered by a generative AI model trained on proprietary agronomic data and additional sources like weather maps, machinery data, and university research reports. Ag Assistant enhances the service provided by agriculture retailers and producers, enabling advisors and growers to respond to threats with unprecedented timeliness and accuracy, ultimately improving productivity and profitability. The assistant can identify and address opportunities to improve yields, provide detailed reports on crop conditions and threats, and generate comprehensive recommendations for product use, nutrient management, and input decisions. Read more. *(Global Agtech Initiative)*

Revolutionizing grain cleaning: Metra unveils AI-powered color sorters. Metra Grain Cleaners has launched a new line of color sorters equipped with advanced Deep AI technology, revolutionizing the grain cleaning industry. The machines use deep learning algorithms to analyze grains by color, shape, size, texture, and variety of defects, accurately identifying and sorting out imperfections. Key features include comprehensive defect detection, precision sorting, and versatility across all grain types. Real-world applications demonstrate exceptional performance in contaminant removal, quality sorting, and specific detection, ensuring enhanced grain quality, increased productivity, and improved profitability for farmers and processors. Read more. *(AgriTech Tomorrow)*

Chart 10: Metra's Deep Artificial Intelligence Color Sorter

Source: Intro-act, Metra Group Inc.

Biome Makers Launches New Agronomic Insights Tool BeCrop Farm. Biome Makers has launched BeCrop Farm, a digital platform providing precise input recommendations and tailored agronomic insights on soil health, disease risk, and management practices. The platform evaluates over 1,000 parameters, including biological data and environmental factors, to help farmers and retailers make informed decisions. It offers product recommendations, hi-definition maps, agronomic insights, and a user-friendly digital experience. BeCrop Farm aims to empower farmers by providing actionable guidance on which management practices to implement, ultimately maximizing the potential of every acre. Read more. *(AgriBusiness Global)*

Farm mapping tool predicts effects of "climate change." Maine Farmland Trust launched an interactive tool called Climate Impact Assessment Mapping Tool to help farmers predict and prepare for climate change effects on their specific farms. The tool uses geospatial information, climate science, and geological data to generate risk assessment reports on water availability, floodplain risk, temperature changes, sea level rise, and soil erosion. Based on these factors, the tool assigns a weighted overall score indicating the farm's vulnerability to weather volatility. Read more. *(AgricultureDive)*

Ohalo plant breeding discovery promises big boost in crop productivity. California-based Ohalo Genetics has developed a plant breeding technology called Boosted Breeding that accelerates and improves crop yields by enabling two parents to pass on their entire genome to the next generation. This results in "boosted" plants with all beneficial traits from each parent, leading to healthier, larger, and higher-yielding crops with gains of up to 100%. The technology unlocks uniform seed production, replacing traditional methods, and can be applied to nearly every crop, promising unprecedented improvements in crop productivity. Read more. *(AgricultureDive)*

VineView launches 'PinPoint RTK' – an affordable high accuracy GPS receiver for precise data collection. VineView, a leading data analytics company, has launched PinPoint RTK, an affordable high accuracy GPS receiver designed specifically for precise field data collection in vineyards. The device offers superior accuracy through Real-Time Kinematic technology, with an accuracy of 2-5cm, outperforming traditional GPS receivers. It allows tracking information at the individual plant level and enables vineyard operators to build precise maps for informed decision-making and planning. The PinPoint RTK is ultra-portable, durable, and water-resistant, with three programmable buttons for specifying data collection. Read more. *(AgriTech Tomorrow)*

Chart 11: 'PinPont RTK' Launched by VineView

Source: Intro-act, Wine-Intelligence.

FUNDING

Monarch raises landmark $133M for self-driving electric tractors. Monarch Tractor has raised $133 million in its largest fundraising round to date, marking a milestone in agricultural robotics history. The funding will scale production of self-driving electric tractors and support development of digital farm tools. With over $220 million raised so far, Monarch has entered various markets across 12 states and three countries. The company's MK-V tractors feature computer vision and remote operation capabilities, while its WingspanAI system allows farmers to collect crop imagery data. Monarch plans to use the funding to introduce new AI capabilities and expand into new markets in the US and abroad, driven by investor interest in generative artificial intelligence and regenerative agriculture. Read more. *(AgricultureDive)*

AgFunder VC closes Fund IV oversubscribed on $102m, reveals deep tech portfolio focus. AgFunder VC has closed its fourth early-stage fund on $102 million, exceeding its target and surpassing industry expectations. The firm's deep tech portfolio focus includes startups like Atinary, a no-code AI platform accelerating materials discovery by 100x, and Nium, a nanotechnology company disrupting ammonia production. The fund also features innovative food and drinks brands, high-growth marketplaces, and carbon removal businesses, such as Rarebird, KEY, and Aquaconnect. With over a third of the fund already deployed, AgFunder VC's total assets under management now reach $300 million following its takeover of the Blue Horizon Growth Fund. Read more. *(AgFunder News)*

Superfruit grower raises $100M. Agtech firm Agrovision has raised $100 million for its farms growing premium fruits such as jumbo blueberries, fragrant raspberries, and seedless table grapes. The funding values the Los Angeles-based company at over $1 billion and will be used to invest in future crops, superfruit varieties, and scale operations to meet retailer demand. Agrovision has recently invested heavily in expansion, genetics, artificial intelligence, and other proprietary technologies to ensure consistent fruit quality year-round. Read more. *(AgricultureDive)*

Chart 12: Blueberries Raised by Agrovision

Source: Intro-act, Agrovision.

InnerPlant Raises $30 million Series B, Led by North American Farmers. InnerPlant, a company that genetically engineers plants to emit optical signals when stressed, raised $30 million in Series B funding led by North American farmers. The investment group, a consortium of progressive farmers, identified InnerPlant's technology as a tool to help them be more profitable in their operations. The company's platform uses data traits, not resistance traits like traditional seed companies, and provides early warning systems for farmers to proactively protect their crops. With partnerships with leading agribusinesses, including John Deere and Syngenta, InnerPlant is poised to drive better agronomic decisions and more profitable farms through its innovative technology. Read more. *(Upstream Ag)*

Startup raises $21.5M to turn crop waste into carbon-capturing biochar. Applied Carbon, a Houston-based startup, raised $21.5 million to deploy automated machines that convert crop waste into biochar across the U.S. South. The funding was led by To.vc, with participation from other investors. The company's robots, powered by AI, pick up crop residue, convert it into biochar, and deposit it back onto the field in a single pass, supporting agriculture industry efforts to increase soil health and sequester carbon at scale. The biochar has potential to remove gigatons of CO_2 from the atmosphere each year, purportedly creating value for farmers. Read more. *(AgricultureDive)*

VC Firm Cultivation Capital Introduces $20 Million Agtech Fund Amid Dealflow Optimism. Cultivation Capital, a St. Louis-based VC firm, has introduced the Cultivation Capital AgTech Fund IV with a total offering amount of $20 million, with an option to increase it to $25 million if demand is robust. The fund will be managed by Kyle Welborn, Martha Schlicher, and Grant Pothast. The firm's Agtech strategy involves a partnership with Yield Lab, which invests in early-stage startups across various market segments, including crop innovation, animal health, and precision ag. With 55 venture capital investments under its belt, the Yield Lab has a median deal size of $2.9 million. Read more. *(Global Agtech Initiative)*

Digestiva Closes $18.4 Million Series A Financing. Digestiva, a food biotech company, closed its Series A financing round, raising $18.4 million led by Magdalena and including participation from other investors. The company's enzyme technology platform focuses on enhancing protein bioavailability to address global malnutrition and promote sustainable nutrition. Digestiva has entered into an exclusive manufacturing partnership with Magdalena and is executing pilot projects to accelerate commercialization. Its first precision protease has shown promise in human studies and industrial processes, potentially revolutionizing the quality of protein ingredients from various sources. The company aims to commercialize applications in pet food, animal feed, and human nutrition markets, with a cost-effective production method using precision fermentation and Self-Affirmed GRAS status for its first product. Read more. *(PRNewswire)*

Leaf Agriculture raises $11.3M in Series A Funding to Accelerate the Digital Transformation of Agriculture. Leaf Agriculture, a unified farm data API and largest farm data processing platform, has raised $11.3 million in Series A funding led by Spero Ventures, with participation from existing investors. The company aims to accelerate the digital transformation of agriculture by providing a single API for companies to access and manage farm data, reducing the need for massive infrastructure investments. Founded by G. Bailey Stockdale, Leaf was created to address the pain of connecting agriculture data, inspired by fintech and telecom solutions like Stripe and Twilio. The funding will be used to expand product offerings, partnerships, and operations to support growth. Read more. *(AgriTech Tomorrow)*

Australia-based Farmbot raises $4.6M for U.S. expansion. Farmbot, an Australian-based company, has raised $4.6 million in a bridge round to support its US expansion plans. The investment will be used to fund the next growth phase, which includes expanding beyond water management to include tools for broader farm infrastructure and natural capital assets like soil, pasture, and biodiversity. Existing shareholders Telstra and Macdoch Ventures participated alongside new investors from the US ranching sector. Farmbot aims to maintain its 100% year-on-year growth rate with over 20,000 sensors in the field, currently supporting over 3,500 farms and stations across Australia. Read more. *(Future Farming)*

Chart 13: Farmbot Monitoring Solutions

Source: Intro-act, Farmbot

Mitti Labs raises $3m seed round to tackle methane emissions in rice farming. Mitti Labs, a startup focused on reducing methane emissions in rice farming, has raised $3 million in seed funding. The company is working with local partners to implement methane-mitigating practices such as direct seeded rice, alternate wetting and drying, and no-burn strategies. These approaches can reduce water use by 30% and methane emissions by 50%. Mitti Labs uses AI models trained on ground data and remote sensing to measure and validate methane reduction, generating carbon credits that can be traded in the voluntary market. The company is working with organizations like Gold Standard and Verra to ensure the credibility of these credits. Investors are attracted to Mitti Labs' technology as a service approach, which allows it to apply its measurement and validation tools to other projects beyond its own. Read more. *(AgFunder News)*

Foray Bioscience Raises $3M to Restore Forests with Plant Cell Culture Tech. Foray Bioscience, a Boston-based startup, has raised $3 million in seed funding led by ReGen Ventures to develop plant cell culture technology for restoring forests and securing plant supply chains. Founded by Dr. Ashley Beckwith, the company aims to make biomanufacturing accessible across species and applications by reducing barriers to entry. With the new capital, Foray will expand its predictive platform, launch product development projects with partners, and grow its team. The startup's technology cultivates plant cells outside the plant in a controlled environment to produce valuable compounds like molecules,

materials, and seeds, overcoming the hurdle of plant diversity through a database that predicts plant cell behavior and growth requirements for specific species. Read more. *(AgFunder News)*

AI startup raises $2.5M for vineyard sensor tech. Farmblox, an automation startup based in Massachusetts, has raised $2.5 million to expand its in-field sensor technology to vineyards and orchards. The platform uses machine-learning sensors to monitor farm operations, identifying issues like irrigation leaks, weather risks, or equipment failure, which can cut labor costs by up to 50% and reduce water usage. Farmblox currently has 55 farm customers covering over 14,000 acres in North America, with plans to expand to lower-margin crops in the future. The funding will help achieve the company's mission of providing a practical digital platform for producers to adopt climate and water sustainability practices. Read more. *(AgricultureDive)*

Blue Tree Technologies nets $2.26m to expand sugar reduction tech for beverages. Blue Tree Technologies, an Israeli startup, has raised $2.26 million to expand its patented technology for selectively removing sugars from beverages like juice, milk, and beer. The company's approach uses ultrafiltration coupled with adsorption to remove disaccharides without sacrificing taste or compromising clean label credentials. With self-GRAS status secured and a scaled solution in place with Israeli juice manufacturer Priniv, Blue Tree plans to license its system to juice producers worldwide, aiming to charge not more than 5% of the gross margin. The company's technology enables significant sugar reduction while maintaining natural flavor and aroma, making it an attractive option for manufacturers seeking to cater to consumer demand for lower-sugar products with clean labels. Read more. *(AgFunder News)*

M&A

Agco to offload grain and protein business for $700M. Agco has agreed to sell its grain and protein business for $700 million as part of a strategic review aimed at focusing on digital services and products. The decision allows Agco to streamline its portfolio, with Chairman Eric Hansotia stating that the move will enable the company to concentrate on high-growth, high-margin businesses. The grain and protein division generates around $1 billion in annual revenue and includes 14 manufacturing facilities across North America, Brazil, Europe, and Malaysia. Agco expects a loss of between $450 million to $475 million from the sale, but believes the move will unlock new potential for the business under its new owner, American Industrial Partners. Read more. *(AgricultureDive)*

Registrar Corp expands sustainability solutions through Foodsteps acquisition. Registrar Corp, a provider of regulatory and compliance software, has acquired Foodsteps, a UK-based platform that helps food businesses reduce their environmental impact. Foodsteps' platform measures and communicates sustainability metrics across supply chains, offering automated life cycle assessments to meet growing reporting requirements. The acquisition enhances Foodsteps' reach globally, leveraging Registrar's expertise in regulation and compliance. Read more. *(FoodBev Media)*

Big Idea Ventures Announces Acquisition of Portfolio Company Uproot Inc. by Califia Farms. Big Idea Ventures announces the acquisition of Uproot Inc., a plant-based milk dispensing system company, by Califia Farms LLC. The acquisition aligns with Califia Farms' commitment to sustainability and product expansion. Uproot's team will join Califia Farms, allowing for further development and expansion of their plant-based offerings. This marks the fifth exit for Big Idea Ventures' New Protein Fund I, highlighting its dedication to supporting innovative companies in the food industry. The acquisition underscores Big Idea Ventures' role in fostering innovation and sets a positive precedent for future successes with its Global Food Innovation Fund II. Read more. *(iGrow News)*

Chart 14: Plant-based Milk Dispensing System by Uproot Inc.

Source: Intro-act, Uproot Inc.

GAMAYA Announces Merger Agreement with Terraview. GAMAYA has announced its merger with Terraview, combining their AI-powered platforms to enhance sustainability and climate-resiliency in global food production. The merged company will operate under the GAMAYA brand, aiming to address decarbonization and water efficiency in sugarcane and grape crops, with plans to expand into additional value chains and new markets. GAMAYA has built its flagship product CanaSight, serving over 1.5m hectares of farmland, while Terraview has become a global leader in the grape crop value chain with its flagship product TerraviewOS. The merger will be led by CEO Yury Vasilkov and Chief Science Officer Piyush Harsh, backed by key investors including Seed4Equity, Glasshouse, ICOS Capital, Mahindra Group, VI Partners, and 3SV. Read more. *(Restaurant Robotic)*

Senior Sistemas acquires GAtec Gestão Agroindustrial. Senior Sistemas, a Brazilian management technology multinational, has acquired GAtec Gestão Agroindustrial, a company specializing in agribusiness management solutions. The acquisition is part of Senior's strategy to focus on high-growth segments and expand its expertise in agribusiness. GAtec has 300 customers across 10 countries, serves eight of Brazil's largest rural producers, and recorded net revenue of R$34.5 million in 2023 with an average growth rate of 22%. The combined companies aim to provide end-to-end solutions for the sector, driving digital transformation and innovation. Read more. *(bnamericas)*

AKVA group ASA: Acquisition of 100% ownership in Observe Technologies. AKVA group ASA has completed the acquisition of 100% shares in Observe Technologies, a move aimed at strengthening its digital capabilities and complementing its products. The partnership between AKVA and Observe has led to the development and sale of AI feeding solutions to over 100 farm sites worldwide, resulting in improved feed conversion ratios. With this acquisition, AKVA now offers four digital products, including AKVA Fishtalk, Observe, Connect, and Submerged, providing a complete precision fish farming solution. The transaction was financed through bank financing options, with an additional consideration of up to GBP 20.5 million dependent on certain conditions being met. Read more. *(GlobeNewswire)*

COMPANY NEWS

Microsoft partners with agricultural tech company for carbon removal. Microsoft has partnered with agricultural tech company Indigo Ag to buy 40,000 carbon credits produced through soil-based carbon farming. The credits are verified by the Soil Enrichment Protocol of the Climate Action Reserve and will help Microsoft accelerate its progress towards becoming carbon-negative by 2030. The credits rely on sustainable practices such as adding cover crops, reducing tillage, and rotating crops to retain carbon in the soil. Farmers can earn an additional revenue stream through the production and sale of these credits, with Indigo Ag paying farmers at least 75% of the average credit price. This deal marks a major milestone for Indigo Ag's carbon program and promotes nature-based carbon solutions. Read more. *(AgricultureDive)*

Danone partners with Microsoft to scale AI projects. Danone has partnered with Microsoft to integrate artificial intelligence throughout its supply chain, aiming to train 100,000 employees in AI skills. The Danone Microsoft AI Academy will focus on predictive forecasting and real-time adjustments to streamline operations. This builds upon Danone's Danskills program, which has already upskilled 50,000 employees to use AI tools like Microsoft Copilot. The partnership aims to enhance efficiency, consumer engagement, and data analysis, with CFO Juergen Esser emphasizing the importance of fostering a culture of continuous learning and innovation. Read more. *(AgricultureDive)*

Google's Parent Company Alphabet Disperses Its Ag Tech Subsidiary. Alphabet's ag tech subsidiary, Mineral, will wind down its operations and disperse its technology to leading agribusinesses. Founded in 2018 as part of X, the moonshot factory, Mineral developed an image database of crops, a semi-autonomous rover platform, geospatial analysis, phenotyping databases, and machine learning technologies. The company partnered with Driscoll's to develop AI tools for crop phenotyping, yield forecasting, quality inspections, and reducing food waste. Driscoll's will license the technology, marking the first step in ensuring Mineral's breakthroughs achieve maximum impact. Read more. *(The Packer)*

PepsiCo teams with fertilizer maker to cut food emissions in Europe. PepsiCo Europe has partnered with fertilizer manufacturer Yara to reduce food emissions in Europe. The collaboration will provide farmers with lower-carbon crop nutrition products and digital tools to adopt regenerative agriculture practices. Yara will deliver up to 165,000 tons of fertilizer per year, mostly from its Climate Choice line made from renewable or low-carbon ammonia. By 2030, the partnership aims to use solely Climate Choice fertilizers as production scales and technologies mature. The effort will start with potatoes, covering approximately 1,000 farms across the EU and UK, before expanding to other crops. Read more. *(AgricultureDive)*

Syngenta Integrates Cool Farm Tool Into the Cropwise Sustainability Application. Syngenta has integrated the Cool Farm Tool (CFT) into its Cropwise Sustainability (CWS) application, enabling growers to measure estimated greenhouse gas emissions on their farms and receive custom recommendations to reduce their environmental footprint. CWS tracks six outcomes, including water impact and soil health, providing actionable insights for improvement. The CFT module allows growers to track and communicate on-farm GHG emissions at a crop level, empowering them with vital metrics for sustainability reporting and regenerative practices. Read more. *(Global Agtech Initiative)*

Swiss Precision Sprayer Joins RDO Equipment Co.'s Product Lineup. Ecorobotix, a Swiss company specializing in AI-driven agricultural technology, has partnered with RDO Equipment Co. to expand its presence in the US market. The partnership brings Ecorobotix's ARA ultra-high precision sprayer to select RDO locations nationwide. This cutting-edge AI solution ensures precise application of phytosanitary products with a 2.4x2.4 sq inch spray footprint, reducing chemical use by up to 95% and decreasing crop phytotoxicity. The ARA sprayer is versatile, adaptable for various crops like carrots, lettuce, and onions, and can reduce input expenses while increasing yields. RDO will support growers in embracing this ultra-precise spraying solution, with over 80 locations across the US and a global network. Read more. *(Global Agtech Initiative)*

Defense contractor Tesseract retools military drones for US farms. Tesseract Ventures, a robotics company and defense contractor, is repurposing its military drone technology for use on US farms. The Tesseract Ag Drone uses computer vision to provide real-time information on fields, paired with synthesis software analyzing raw data for actionable insights. Entering the agricultural drone market as the US considers banning China-based DJI, Tesseract partnered with Landus Farm Cooperative in Iowa to soft launch the tech through a Department of Defense program. Read more. *(AgricultureDive)*

Chart 15: Tesseract's Ag Drone and Synthesis Software

Source: Intro-act, Tesseract Ventures

New IoT Partnership Addresses Rural Connectivity Gap in Northwest Ohio. Emergent Connext has launched its innovative Internet-of-Things (IoT) network solution in Northwest Ohio, with the City of Defiance as its first customer. The low-cost, long-range network addresses the connectivity gap in rural communities and agricultural fields, enabling smart IoT sensors and devices to connect to the internet in real time. This partnership with MetaLINK Technologies will enhance capabilities for rural municipalities, reducing operating expenses and improving profitability while conserving natural resources. The network will also enable smart cities and AgTech applications, such as monitoring propane tanks and water meters, reducing waste and local tax burdens. Read more. *(Global Agtech Initiative)*

Tyson engages 5 supply chain startups for potential partnerships. Tyson Foods has selected five supply chain startups for potential partnerships after its Demo Day event, where 12 early-stage firms from the US, Canada, and UK pitched their solutions. The chosen startups are Acoustic Extra Freezing (Paradigm Labs), JLE Truckwash, Orderful, Pactum AI, and SnoFox, which focus on efficient supply chain solutions for issues like industrial refrigeration, truck fleet cleaning, data exchange, and supplier negotiations. Tyson's vice president of global strategy, Heidi Solomon, expressed excitement about the potential for transformational solutions to make a difference with the company's global reach and scale. Read more. *(AgricultureDive)*

Nature's Miracle Announces Grow Light Sales Order of $5.1 Million by What Rebates LLC. Nature's Miracle Holdings Inc., a leader in vertical farming technology, announced a $5.1 million sales order for grow light products from What Rebates LLC, a utility rebate company, to support the U.S. energy rebate market. The order is expected to increase Nature's Miracle's 2024 gross revenue by $5.1 million and will be delivered in late 2024. The sale is supported by the Inflation Reduction Act, which provides rebates for commercial lighting, with 78% of the US covered by an active program. Read more. *(AgriTech Tomorrow)*

SweetWater Technologies Announces First Drone Franchise Partners: Innovating Agriculture through New Business Models and Drone Technology. SweetWater Technologies announced its first group of independently owned and operated franchises, marking a milestone in its mission to elevate agronomic practices through innovative business models and drone technology. The franchise partners, including Bill Pirkl, Nathan Janz, Grant Bell, Skyler Stahl, and Cameron Woodring, are dedicated to providing farm clients with the benefits of drone technology, maximizing crop potential, and offering precise spraying, spot treatments, and accurate application. SweetWater's drones offer clear ROI advantages, reducing fuel consumption and emissions while enhancing efficiency and yields. The company also offers an exclusive portfolio of performance crop inputs designed specifically for drone applications, helping producers increase yield, enhance ROI, and maximize plant potential. Read more. *(AgriTech Tomorrow)*

JoyHub & FALL LINE Announce Strategic Partnership to Boost High-Tech Agriculture. JoyHub and FALL LINE announced a strategic partnership to promote high-tech agricultural innovation, leveraging JoyHub's market network and FALL LINE's expertise. The collaboration aims to increase efficiency, sustainability, and technological advancement in agriculture, with notable investment targets including Sound Agriculture, Greenlight, and Micropep. BNP Paribas and Bank of Montreal are co-investors providing substantial financial support. Representatives from both organizations expressed optimism about the partnership's potential, highlighting its focus on fostering advancements in agricultural technology. Read more. *(iGrow News)*

TEAL Partners With AquaSpy to Revolutionize Crop Monitoring With Advanced IoT Connectivity. TEAL has partnered with AquaSpy to revolutionize crop monitoring through advanced IoT connectivity. The collaboration enables AquaSpy to offer a fully wireless soil moisture monitoring solution, overcoming traditional systems' limitations of solar power, cables, and towers. TEAL's eSIM technology provides consistent carrier coverage globally, streamlining operations and improving reliability and efficiency. With this partnership, farmers worldwide can access critical data and tools to refine irrigation techniques, driving sustainability and productivity in farming operations. Read more. *(Global Agtech Initiative)*

EARNINGS

AGCO Corporation Reports Sales Decline Amid Challenging Market Conditions. AGCO, a leading agricultural equipment manufacturer, has launched several initiatives to drive growth and innovation. These include FarmerCore, a digital platform for farmers and dealers; AGCO Ventures, an early-stage agri-tech investment arm; and precision agriculture solutions like ONE SMART SPRAY. The company also acquired FarmFacts GmbH and partnered with Trimble to create a mixed-fleet precision agriculture platform. Read more. *(iGrow News)*

Zoetis Announces Second Quarter 2024 Results. Zoetis reported its second quarter 2024 results, with revenue increasing 8% to $2.4 billion and net income decreasing 7% to $624 million. Adjusted net income rose 9% to $711 million. The company raised its full-year guidance for 2024, expecting revenue of $9.1-9.25 billion, reported net income of $2.45-2.49 billion, and adjusted net income of $2.64-2.69 billion. Zoetis also announced the approval of several products, including Alpha Ject Micro in Canada and Draxxin KP in Japan. The company is strengthening its Diagnostic offerings with the anticipated launch of a new premium point-of-care hematology analyzer, Vetscan Opticell, in the second half of 2024. Read more. *(Morningstar)*

Kerry Group-Half Year Results 2024. Kerry Group reported strong half-year results with group revenue reaching €3.9bn, driven by Taste & Nutrition volume growth of 3.1%. The segment's EBITDA margin expanded by 130bps, contributing to group EBITDA of €552m, up from €518m in H1 2023. Adjusted EPS rose 9.1% on a constant currency basis, with free cash flow reaching €445m. The company also announced an interim dividend increase and share repurchases of €279m. CEO Edmond Scanlon attributed the performance to strong volume growth in foodservice channels and retail applications while updating full-year guidance for constant currency-adjusted EPS to 7-10%. Read more. *(Company Press Release)*

CAT Financial Announces Second-Quarter 2024 Results. Cat Financial reported a 9% increase in second-quarter 2024 revenues to $865 million, driven by higher average financing rates and earning assets. The company's loss was $65 million, a 143% decrease from the prior year's profit of $150 million. Excluding a $210 million loss on divestiture, profit before income taxes decreased 6% to $192 million due to higher provisions for credit losses. Retail new business volume increased 8% to $3.41 billion, driven by higher volume in North America. Past dues decreased to 1.74%, and write-offs were $18 million. The allowance for credit losses totaled $254 million or 0.89% of finance receivables as of June 30, 2024. Read more. *(Company Press Release)*

First half-year 2024: Solid result in a volatile environment. Bucher Industries reported a solid result for the first half of 2024 despite a volatile environment, with demand for products and services declining compared to the strong prior-year period. The order intake fell across all divisions, particularly in agriculture, while sales were below the previous year's levels except at Bucher Municipal. The operating profit margin remained in the double-digit range, but the group's profit declined significantly. The financial position remains solid, with net liquidity of CHF 186 million and an equity ratio of 62%. Read more. *(Company Press Release)*

Gorman-Rupp Reports Second Quarter 2024 Financial Results. Gorman-Rupp reported its financial results for the second quarter and first six months of 2024, with net sales decreasing 0.9% to $169.5 million and 0.8% to $328.8 million, respectively, compared to the same periods in 2023. Net income was $8.3 million, or $0.32 per share, for the second quarter and $16.2 million, or $0.62 per share, for the first six months of 2024. Adjusted earnings per share were $0.54 and $0.84, respectively. Gross margin improved to 31.9% in the second quarter and 31.2% in the first six months of 2024 due to cost savings and pricing increases. The company refinanced its debt, which is expected to reduce interest expenses by over $7 million annually. Incoming orders increased 5.5% to $162.5 million in the second quarter and 6.3% to $341.4 million in the first six months of 2024. Read more. *(Yahoo Finance)*

Gibraltar Announces Second Quarter 2024 Financial Results. Gibraltar Industries reported its financial results for the three- and six-month period ended June 30, 2024, with GAAP net sales down 3.3% to $36 million and adjusted net sales down 2.0%. The company's Agtech bookings reached a record $90 million in the quarter, supporting strong revenue growth in the second half. Despite market headwinds impacting Residential and Renewables businesses, Gibraltar delivered solid execution and strong operating cash flow performance. GAAP net income increased 4.9% to $32.2 million, or $1.05 per share, while adjusted net income rose 2.8% to $36.4 million, or $1.18 per share. Read more. *(Company Press Release)*

Valmont Reports Second Quarter 2024 Results and Raises Full-Year 2024 Diluted Earnings per Share Guidance. Valmont Industries Inc., a global leader in infrastructure and agriculture, reported its second-quarter 2024 results, with net sales of $1.0 billion, operating income increasing 10.2% to $147.3 million, and diluted earnings per share growing 16.6% to $4.91. The company raised its full-year 2024 diluted EPS guidance to $16.50-$17.30 from $15.40-$16.40. Infrastructure segment sales decreased 1.0% year-over-year, while agriculture segment sales grew slightly due to increased replacement sales in North America. Valmont generated operating cash flows of $130.8 million and returned $27.1 million to shasreholders through share repurchases and dividends. The company is reaffirming its commitment to focus on strategic areas to enhance profitability and return on invested capital, exiting certain low-margin solar projects and adjusting the expected increase in utility sales downward. Read more. *(Company Press Release)*

AGTECH CHART OF THE MONTH

Chart 16: Agrifoodtech VC Funding Trends by Category: H1 2024 vs. H1 2023

Legend: ■ H1 2024 ■ H1 2023

Category	H1 2024	H1 2023
Ag Biotech	1,700	782
In-store Tech	1,000	856
Innovative Food	828	909
Bioenergy&Biomaterial	761	1,400
Supply Chain	759	534
Online Restaurant & Meal Marketplace	758	271
eGrocery	694	887
Ag Marketplaces & Fintech	513	330
Farm Robotics, Mechanization&Equipment	398	505
Farm Management Software&Sensing	365	536
Novel Farming Systems	336	424

Source: Intro-act, AgFunder

COMMODITIES DASHBOARD

AGRICULTURAL COMMODITIES MARKETS

Chart 17: Agricultural Commodities Price Returns

Agricultural Commodities	Price as of 31 July 2024	1M	3M	6M	1Y	YTD
Grains						
Corn (Cen III $/bu)	3.87	▼ -4.12%	▼ -10.50%	▼ -12.45%	▼ -16.33%	▼ -12.45%
Corn (St. Louis Miss R $/bu)	4.10	▼ -3.19%	▼ -11.60%	▼ -11.93%	▼ -12.87%	▼ -11.93%
Ord Hard Red Wheat (Kansas City $/bu)	5.41	▼ -6.31%	▼ -10.88%	▼ -9.84%	▼ -12.56%	▼ -9.84%
Soft Red Wheat (St. Louis Miss R $/bu)	5.08	▼ -8.51%	▼ -11.56%	▼ -15.76%	▼ -13.67%	▼ -15.76%
Dns/Ns Wheat 14 (Minneapolis $/bu)	7.57	▼ -4.54%	▼ -13.41%	▼ -16.56%	▼ -19.06%	▼ -16.56%
Oats (Minneapolis $/bu)	4.01	▼ -0.86%	▼ -5.48%	▼ -9.32%	▼ -3.31%	▼ -9.32%
Butter AA Chicago (¢/lb)	312.75	▲ 0.08%	▲ 5.48%	▲ 13.11%	▲ 17.80%	▲ 13.11%
Flour Hard Winter USDA ($/cwt)	16.15	▼ -2.12%	▼ -9.01%	▼ -11.02%	▼ -10.53%	▼ -11.02%
Aus Feed Barley Near Term (SFE AUD/mt)	315.00	▲ 0.00%	▼ -0.63%	▲ 5.53%	▼ -2.33%	▲ 5.53%
Softs						
Cocoa Ivory Coast New York ($/mt)	8083.00	▲ 5.08%	▼ -19.57%	▲ 68.05%	▲ 81.31%	▲ 68.05%
Coffee Brazilian New York (¢/lb)	233.30	▲ 2.03%	▲ 3.63%	▲ 23.45%	▲ 35.86%	▲ 23.45%
Coffee Colombian New York (¢/lb)	252.93	▲ 1.01%	▲ 0.99%	▲ 19.24%	▲ 28.22%	▲ 19.24%
Sugar #11 World Raw New York (¢/lb)	19.02	▼ -6.35%	▼ -2.16%	▼ -20.95%	▼ -26.79%	▼ -20.95%
Oils and Oil Seeds						
Corn Oil Food Grade (Degummed) Central US FOB-R ($/to	52.00	▲ 0.00%	▲ 0.00%	▲ 0.00%	▲ 0.00%	▲ 0.00%
Soybean Oil Illinois FOB-T/R (¢/lb)	44.16	▲ 2.84%	▼ -1.30%	▼ -9.14%	▼ -19.24%	▼ -9.14%
Livestock						
Broilers Composite Average 12-City (¢/lb)	129.81	▼ -1.56%	▼ -1.67%	▲ 1.51%	▲ 11.24%	▲ 1.51%
Eggs Large White USDA (¢/Dozen)	267.50	▲ 7.21%	▲ 32.10%	▲ 13.59%	▲ 16.56%	▲ 13.59%
Hogs Lean/Average Iowa/S Minn Lean Hog Index (¢/lb)	93.53	▲ 4.89%	▲ 3.24%	▲ 28.63%	▲ 32.51%	▲ 28.63%
Pork Bellies Frozen 12-14 lbs. Chicago/Midwest (¢/lb)	176.48	▲ 22.72%	▲ 14.14%	▲ 9.59%	▲ 56.94%	▲ 9.59%
Feeder Cattle Near Term (CME $/lbs)	2.57	▼ -0.79%	▲ 5.18%	▲ 7.12%	▲ 16.96%	▲ 7.12%
Dairy						
Cheese Barrels CME (¢/lb)	1975.00	▲ 5.05%	▲ 6.47%	▲ 29.93%	▲ 30.79%	▲ 29.93%
Cheese Blocks CME (¢/lb)	1915.00	▲ 0.26%	▲ 9.59%	▲ 16.06%	▲ 24.35%	▲ 16.06%
Grade A Nonfat Dry Milk Chicago USDA ($/lb)	1.25	▲ 5.29%	▲ 11.16%	▲ 1.22%	▲ 5.96%	▲ 1.22%

Source: Intro-act, FactSet. Data as of 08/08/2024

Chart 18: Indexed Change in Grain Prices Last 12 Months

Corn (Cen Ill $/bu)

Ord Hard Red Wheat (Kansas City $/bu)

Oats (Minneapolis $/bu)

Butter AA Chicago (c/lb)

Flour Hard Winter USDA ($/cwt)

Aus Feed Barley Near Term (SFE AUD/mt)
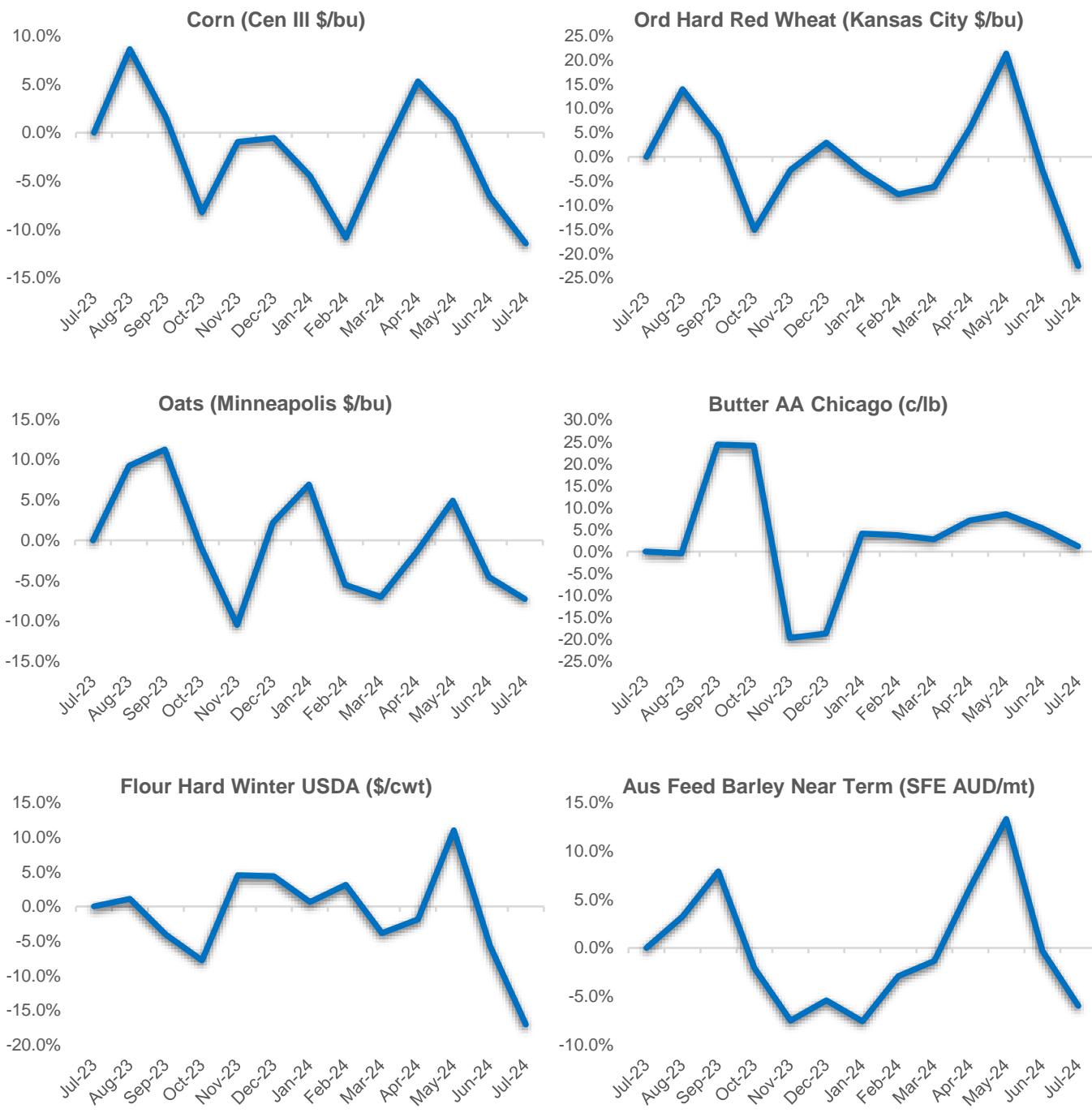
Source: Intro-act, FactSet. Data as of 08/08/2024

Chart 19: Indexed Change in Softs and Oil Seeds Prices Last 12 Months

Cocoa Ivory Coast New York ($/mt)

Coffee Brazilian New York (c/lb)

Sugar #11 World Raw New York (c/lb)

Soybean Oil Illinois FOB-T/R (c/lb)
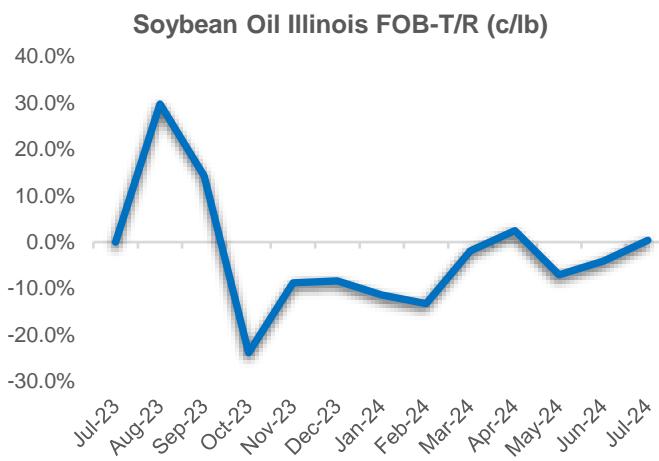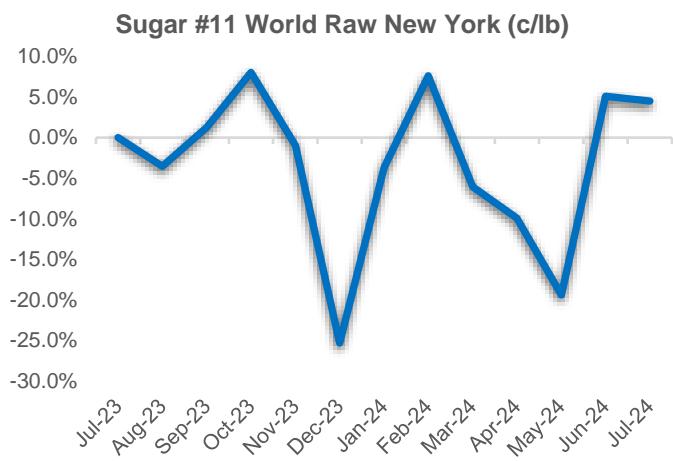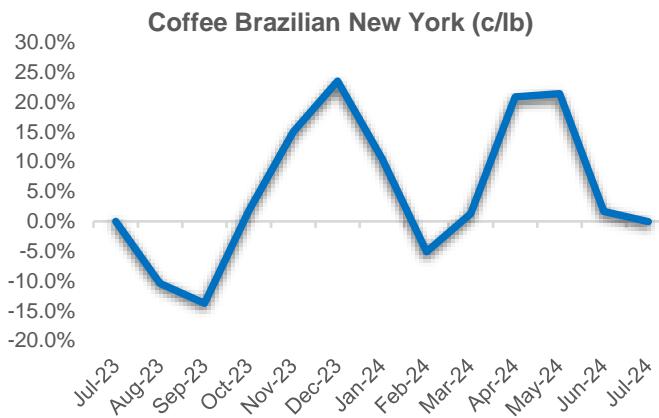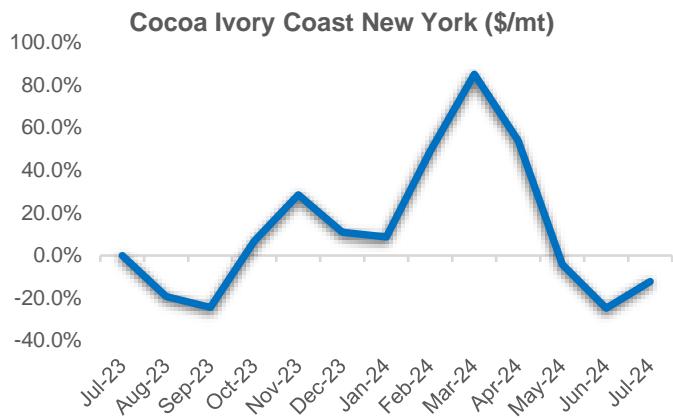
Source: Intro-act, FactSet. Data as of 08/08/2024.

Chart 20: Indexed Change in Livestock and Dairy Prices Last 12 Months

Eggs Large White USDA (c/Dozen)

Hogs Lean/Average Iowa/S Minn Lean Hog Index (c/lb)

Pork Bellies Frozen 12-14 lbs. Chicago/Midwest (c/lb)

Feeder Cattle Near Term (CME $/lbs)

Grade A Nonfat Dry Milk Chicago USDA ($/lb)
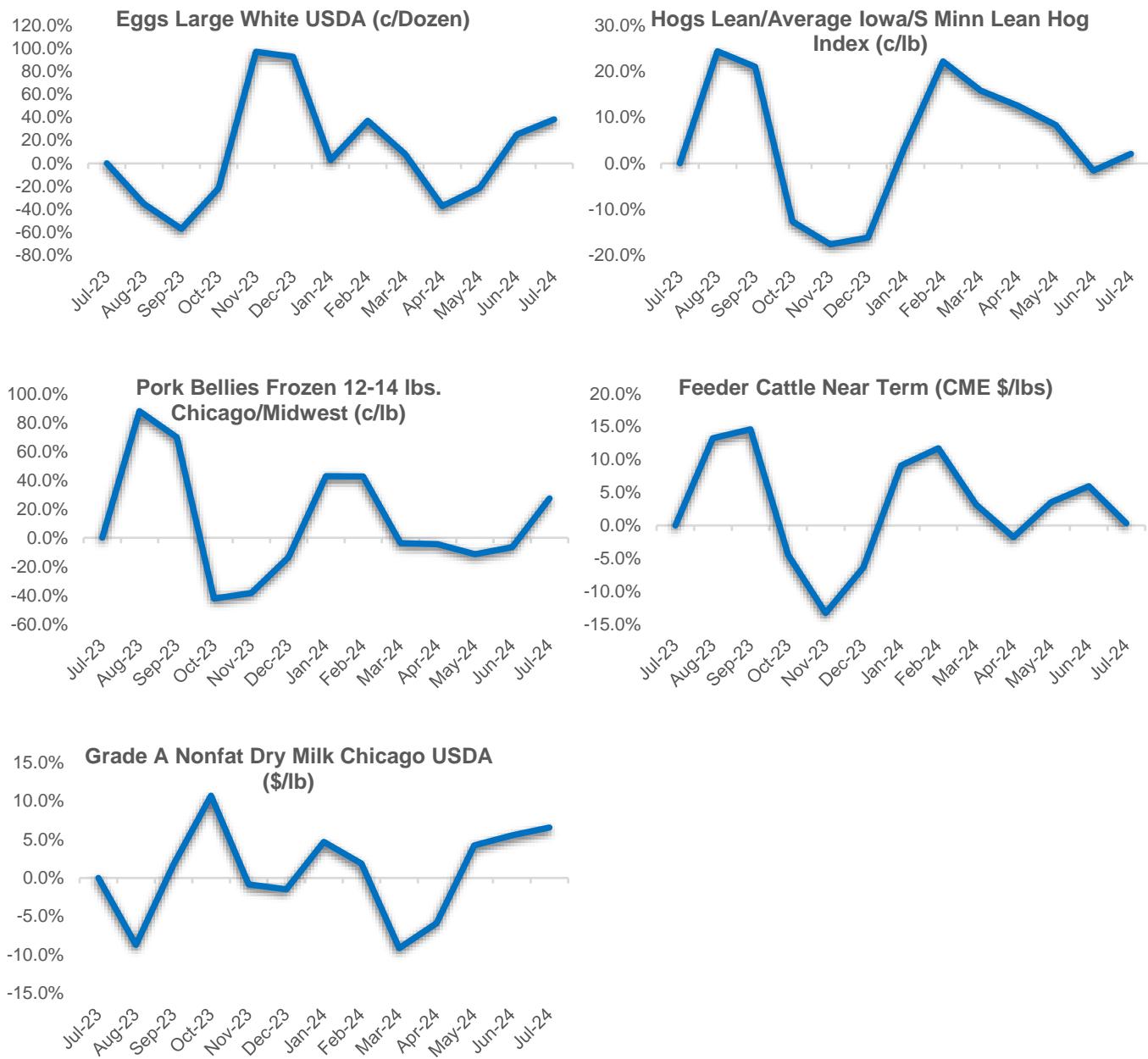
Source: Intro-act, FactSet. Data as of 08/08/2024

ENERGY COMMODITIES MARKETS

Chart 21: Energy Commodities Price Returns

Energy Commodities	Price as of 31 July 2024	1M	3M	6M	1Y	YTD
Natural Gas and Crude Oil						
Natural Gas Henry Hub Spot NYMEX ($/Mmbtu)	1.94	▼ -19.83%	▲ 15.48%	▼ -11.42%	▼ -29.45%	▼ -11.42%
Crude Oil WTI /Global Spot NYMEX ($/bbl)	79.36	▼ -4.19%	▼ -4.95%	▲ 4.04%	▲ 4.89%	▲ 4.04%
Crude Oil Brent Global Spot ICE ($/bbl)	81.39	▼ -6.73%	▼ -7.75%	▼ -1.92%	▼ -0.40%	▼ -1.92%
Propane Mont Belvieu TX ($/gal)	0.78	▼ -7.07%	▲ 3.05%	▼ -17.01%	▲ 17.58%	▼ -17.01%
Refined Products						
Gasoline Conv Regular NY Harbor ($/gal)	2.48	▼ -1.98%	▼ -9.37%	▲ 9.80%	▲ 7.93%	▲ 9.80%
Diesel No. 2 Low Sulfur NY Harbor ($/gal)	2.39	▼ -4.63%	▼ -4.86%	▼ -14.21%	▼ -17.50%	▼ -14.21%
Heating Oil No. 2 NY Harbor ($/gal)	2.27	▼ -4.87%	▼ -6.09%	▼ -16.30%	▼ -19.31%	▼ -16.30%
Jet Fuel Kerosene-Type U.S. Gulf Coast ($/gal)	2.28	▼ -7.58%	▼ -7.69%	▼ -15.56%	▼ -7.92%	▼ -15.56%
Gasoil Near Term (IFEU $/mt)	740.25	▼ -5.76%	▼ -4.36%	▼ -13.42%	▼ -7.64%	▼ -13.42%
Ethanol Iowa (CRB $/gallon)	1.74	▼ -11.68%	▲ 12.99%	▲ 14.85%	▼ -5.95%	▲ 14.85%
WTI USG 3:2:1 Crack Spread	20.17	▲ 15.64%	▼ -7.51%	▼ -15.19%	▲ 21.07%	▼ -15.19%

Source: Intro-act, FactSet. Data as of 08/08/2024

Chart 22: Indexed Change in Oil and Gas Prices Last 12 Months

Natural Gas Henry Hub Spot NYMEX ($/Mmbtu)

Crude Oil WTI /Global Spot NYMEX ($/bbl)

Crude Oil Brent Global Spot ICE ($/bbl)

Propane Mont Belvieu TX ($/gal)
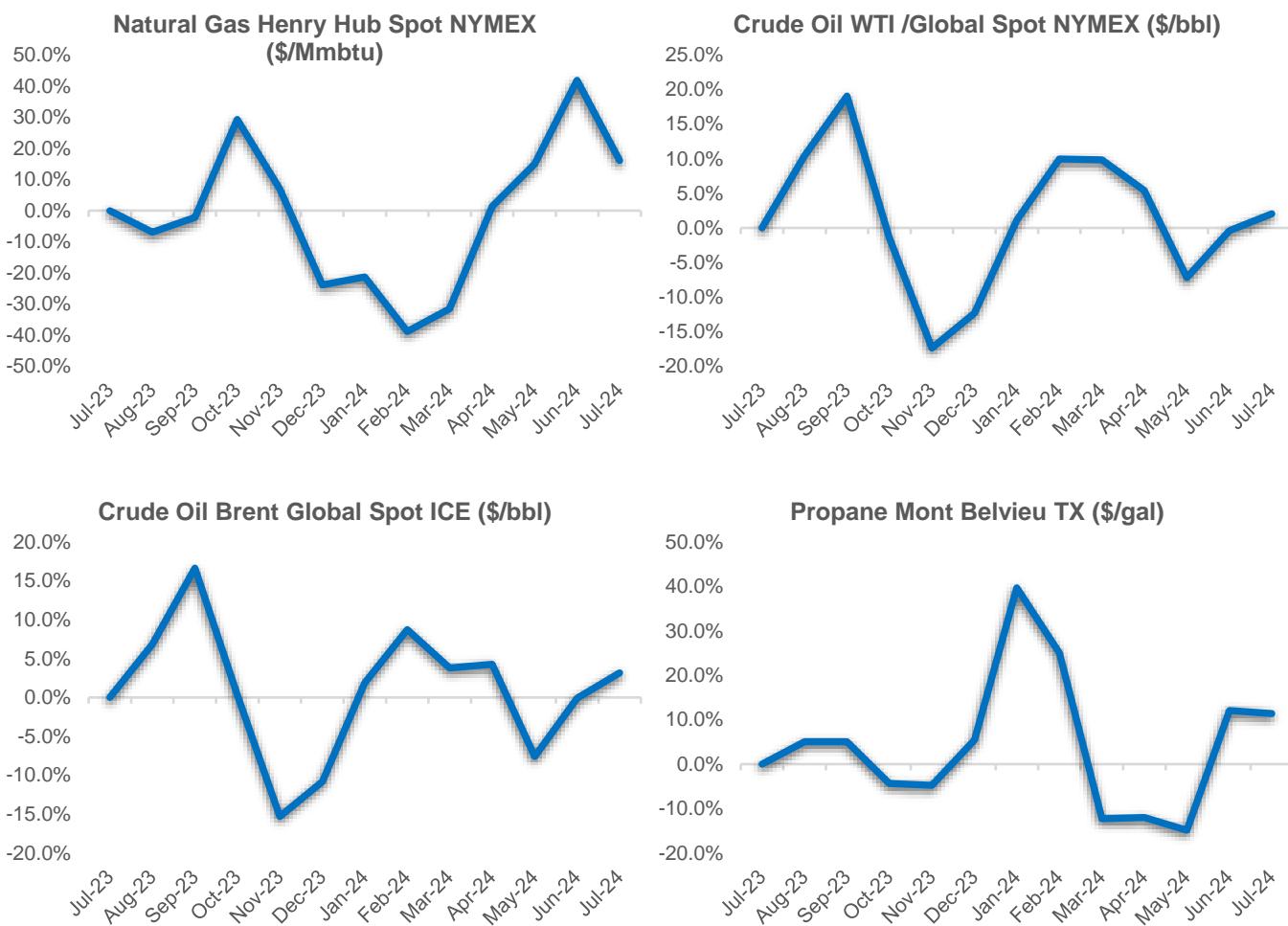
Source: Intro-act, FactSet. Data as of 08/08/2024

Chart 23: Indexed Change in Refined Fuel Prices Last 12 Months

Gasoline Conv Regular NY Harbor ($/gal)

Diesel No. 2 Low Sulfur NY Harbor ($/gal)

Heating Oil No. 2 NY Harbor ($/gal)

Jet Fuel Kerosene-Type U.S. Gulf Coast ($/gal)

Gasoil Near Term (IFEU $/mt))

Ethanol Iowa (CRB $/gallon)
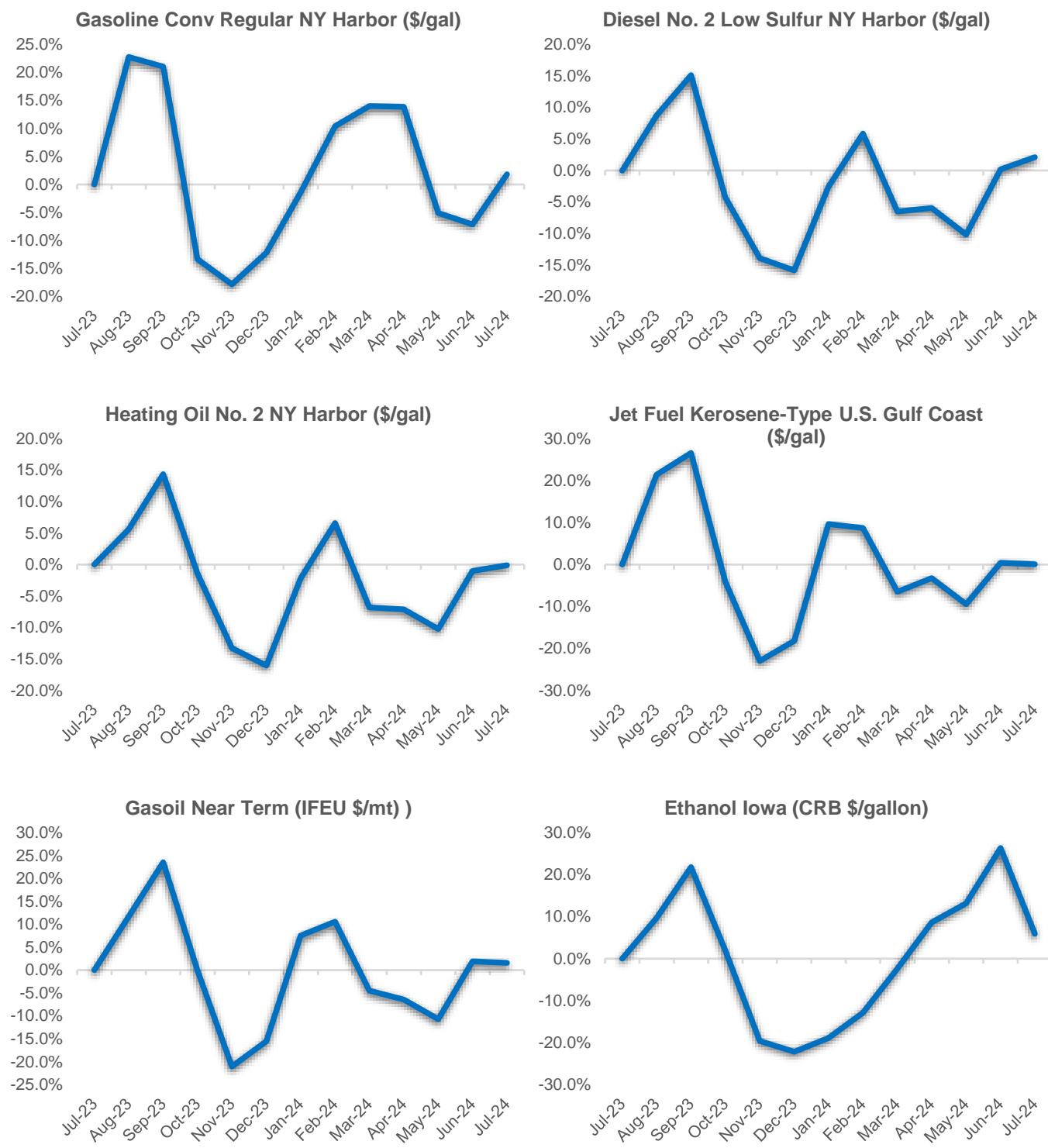
Source: Intro-act, FactSet. Data as of 08/08/2024

FERTILIZER MARKETS

Chart 24: Prices by Fertilizer Type (As of July 5, 2024)
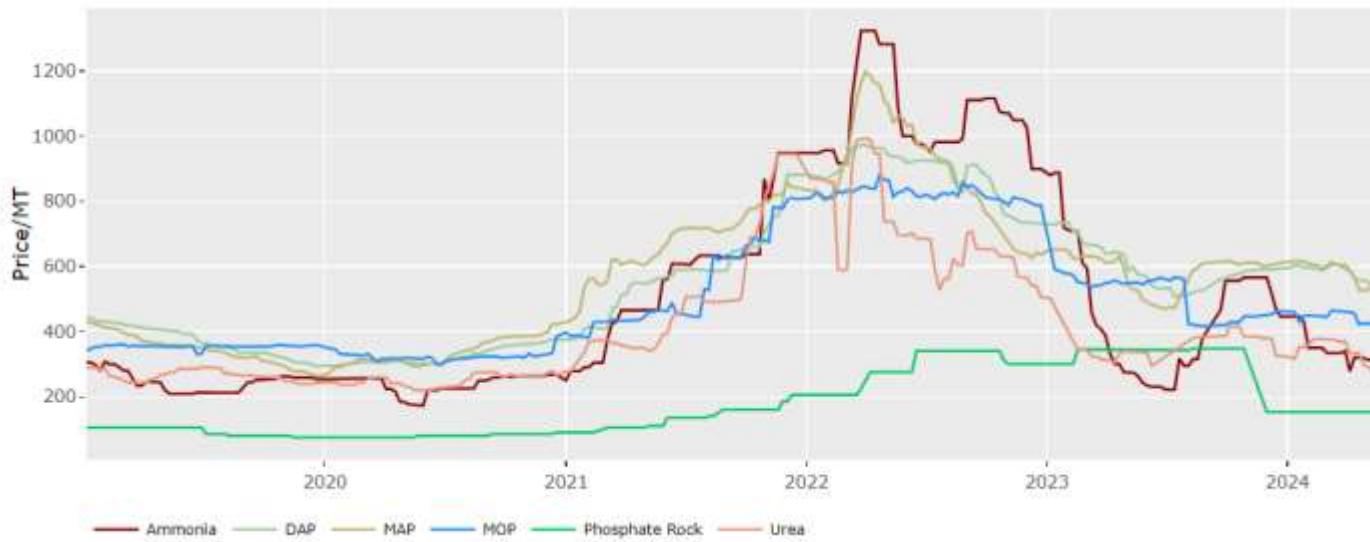
Source: Intro-act, Food Security Portal, Bloomberg

Chart 25: Prices by Nutrient (As of July 5, 2024)
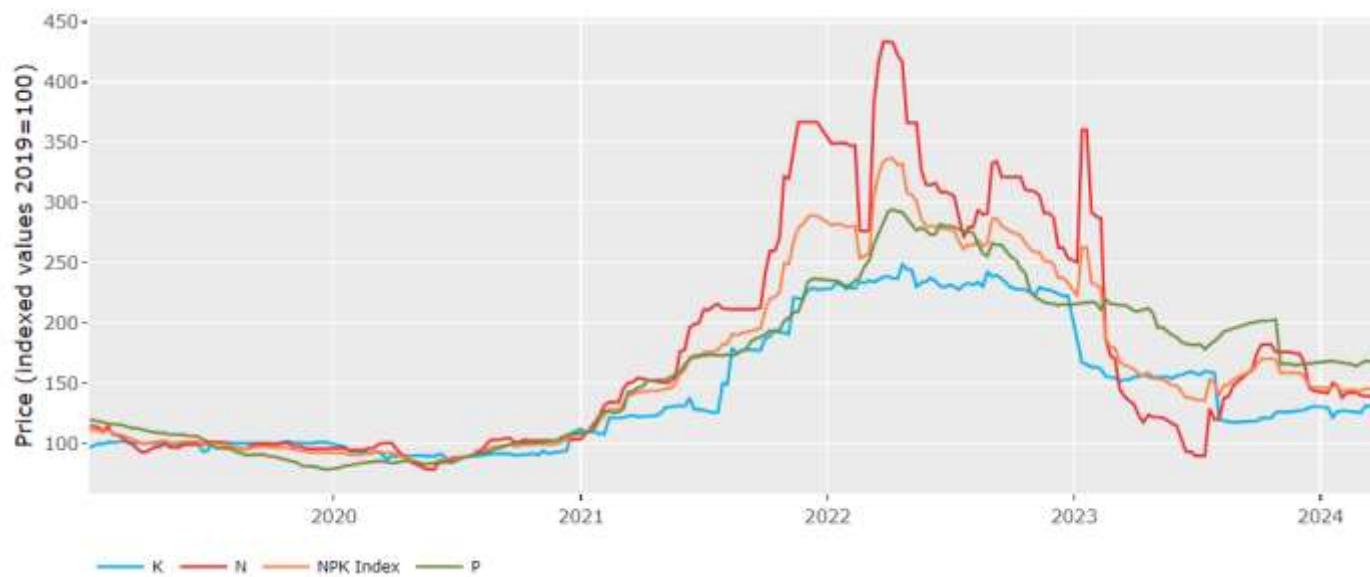
Source: Intro-act, Food Security Portal, Bloomberg

Chart 26: Input Prices - Natural Gas (As of July 5, 2024)
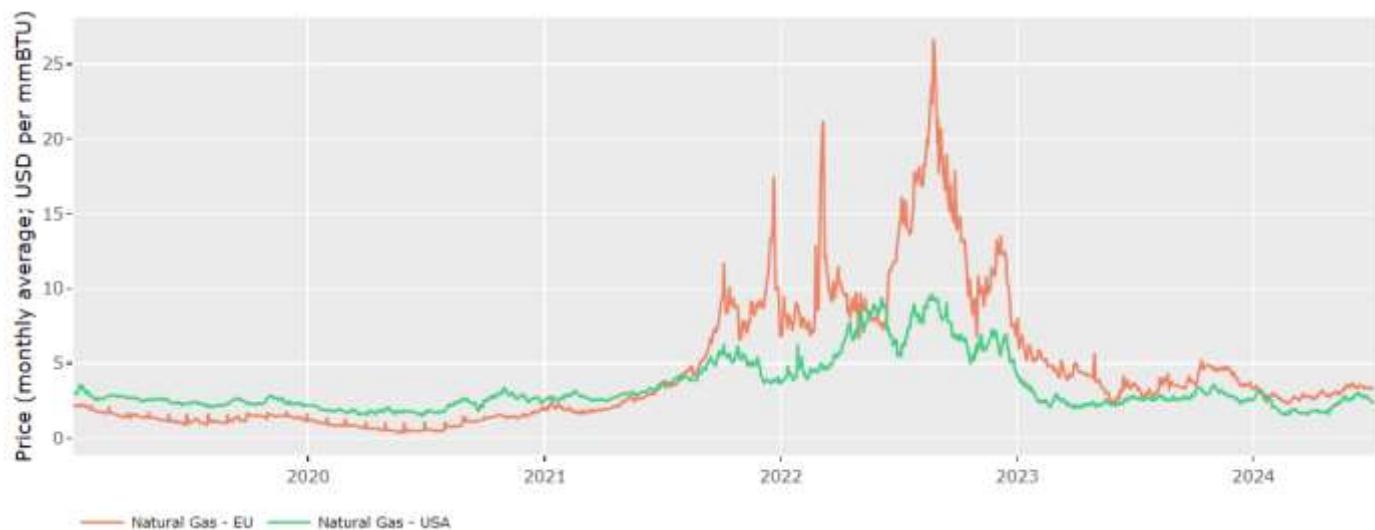
Source: Intro-act, Food Security Portal, NY Mercantile, ICE

AGTECH CAPITAL MARKET ACTION (July 2024)

M&A Activity

Target	Target Industry	Target country	Acquirer	Deal Size ($mn)	Deal Date
Terraview	Agtech	Brazil	Gamaya	-	16-Jul-2024
Observe Technologies.	Agtech	United Kingdom	AKVA Group	-	05-Jul-2024
GAtec Agroindustrial Management	Agtech	Brazil	Senior Sistemas	-	03-Jul-2024

Source: Intro-act, Pitchbook

PE/ VC Funding Activity*

Companies	Deal Type	Deal Size ($mn)	Investors	Deal Date
Monarch Tractor	Later Stage VC	133.0	Astanor Ventures (Hendrik Van Asbroeck), At One Ventures, CTBC Venture Capital, Participatiemaatschappij Vlaanderen, Welvaartsfonds	22-Jul-2024
Carbon Robotics	Later Stage VC	56.0	Amity Ventures, Anthos Capital (Brian Ames), Fuse (Seattle) (Cameron Borumand), Ignition Partners, Liquid 2 Ventures, NVentures (Santa Clara), Revolution (Washington DC), S28 Capital, Sozo Ventures (Rob Freelen), Voyager Capital (Erik Benson), Vulcan Asset Management	2-Jul-2024
Molbreeding	Later Stage VC	34.4	Dalton Venture, Haochen Capital, Lake Bleu Capital, Suzhou Guofa Venture Capital	30-Jul-2024
NovoNutrients	Later Stage VC	18.0	Audacy Ventures (Leo Chan), CM Ventures (Min Zhou), Happiness Capital, IndieBio (Alex Kopelyan), SOSV (Po Bronson), TechCrunch, The Jeremy and Hannelore Grantham Environmental Trust, Unreasonable Impact, Woodside Energy (ASX: WDS)	9-Jul-2024
Edacious	Seed Round	14.1	iSelect Fund, Neglected Climate Opportunities, The Nest Family Office, Tin Shed Ventures, Trailhead Capital (Colorado)	10-Jul-2024
Leaf (Claremont)	Later Stage VC	11.3	Radicle (San Diego) (Kirk Haney), S2G Ventures, SP Ventures (Ariadne Caballero), Spero Ventures	31-Jul-2024
eAgronom	Later Stage VC	10.8	Icos Capital, SmartCap, Soulmates Ventures, Swedbank (STO: SWED A) (Jon Lidefelt)	2-Jul-2024
Crofarm	Later Stage VC	10.0	-	11-Jul-2024
Farmtech	Later Stage VC	10.0	Bewater Ventures	10-Jul-2024
Soil Scout	Later Stage VC	7.1	-	29-Jul-2024
Agrobiomics	Early-Stage VC	4.3	NOON Ventures	23-Jul-2024
Cassvita	Seed Round	3.0	SBXi	1-Jul-2024
Adaviv	Seed Round	2.7	Milemark Capital	1-Jul-2024
Elevate Vertical Farms	Later Stage VC	2.5	Brightspark Ventures (Mark Skapinker), Orange Ridge Capital	30-Jul-2024
WIDHOC	Seed Round	2.2	Bongerma Vf (Juan Vercher)	18-Jul-2024
Fashol	Early-Stage VC	2.1	-	30-Jul-2024
agRE.tech	Seed Round	2.0	EDF Renewable Energy, Zemach Regional Enterprises	2-Jul-2024
Meu Pescado	Early-Stage VC	2.0	Aimorés Investimentos, Fabio Barra (Fabio Barra), Incubate Fund, Marcos Bernat (Marcos Bernat), Stamina Capital	17-Jul-2024
iLivestock	Later Stage VC	1.5	Kelvin Capital	10-Jul-2024
Distynct	Later Stage VC	1.1	-	9-Jul-2024
Eauzons	Later Stage VC	1.1	Seventure Partners	1-Jul-2024
Elevarm	Early-Stage VC	1.0	Amartha (Aria Widyanto), Rabobank Group, Scala Group (TKS: 4845) (Ryo Ishihara)	3-Jul-2024
SatYield	Seed Round	1.0	Katao Venture Partners	1-Jul-2024

Edison Agrosciences	Seed Round	0.6	AgTI, Ariel Savannah Angel Partners, BioGenerator Ventures (Matt Helms), Crisp & Company (Matthew Crisp), Missouri Technology Corporation	16-Jul-2024
Permia Sensing	Early-Stage VC	0.6	British Design Fund (Damon Bonser)	15-Jul-2024
SAYeTECH	Seed Round	0.1	AgFunder	24-Jul-2024
Aerobotics	Later Stage VC	-	AlphaCode (South Africa)	01-Jul-2024
AGRIST	Later Stage VC	-	Nippon Steel Kowa Real Estate, SRG Takamiya (TKS: 2445)	01-Jul-2024
enfarm Agritech	Seed Round	-	AiViet Venture, Touchstone Partners (Ho Chi Minh)	10-Jul-2024
Solinftec	PE Growth/Expansion	-	Stratus	01-Jul-2024

*Source: Intro-act, Pitchbook. *Top 30 PE/VC deals*

AGTECH INSTITUTIONAL INVESTOR LEAGUE

Chart 27: Agtech Institutional Owners League (Current)

Rank	Investor Name	Invested in Agtech($)	Q/Q Change ($)	Change in Positions (#)	Agtech AUM as % of Total Agtech AUM
1	The Vanguard Group, Inc.	158,357,875,665	9,774,146,520	1	11%
2	BlackRock Fund Advisors	87,252,523,435	4,234,767,373	2	6%
3	SSgA Funds Management, Inc.	64,217,264,011	3,048,096,766	-4	5%
4	Geode Capital Management LLC	33,691,955,975	2,835,649,798	-4	2%
5	Capital Research & Management Co. (World Investors)	23,202,221,578	(1,790,280,485)	2	2%
6	Wellington Management Co. LLP	19,169,931,339	1,102,166,084	2	1%
7	T. Rowe Price Associates, Inc. (Investment Management)	18,064,970,992	498,322,947	-1	1%
8	BlackRock Advisors (UK) Ltd.	17,479,289,316	1,243,635,815	4	1%
9	BlackRock Investment Management (UK) Ltd.	17,011,929,088	(695,100,003)	-23	1%
10	Fidelity Management & Research Co. LLC	16,590,267,067	1,963,726,449	0	1%
11	State Farm Investment Management Corp.	15,463,072,554	793,211,280	0	1%
12	Northern Trust Investments, Inc.(Investment Management)	15,297,000,045	46,275,860	1	1%
13	Dimensional Fund Advisors LP	14,092,874,568	1,117,490,122	2	1%
14	Charles Schwab Investment Management, Inc.	12,152,098,247	(1,425,720,615)	1	1%
15	JPMorgan Investment Management, Inc.	11,226,952,254	1,357,873,240	0	1%
16	UBS Asset Management Switzerland AG	9,597,974,822	699,924,585	0	1%
17	Legal & General Investment Management	9,143,384,819	324,315,020	-2	1%
18	Capital Research & Management Co. (International Investors)	8,970,936,542	(1,217,397,718)	-2	1%
19	Invesco Capital Management LLC	8,638,549,983	910,970,514	0	1%
20	Massachusetts Financial Services Co.	8,369,469,850	(1,123,269,766)	5	1%
21	Capital Research & Management Co. (Global Investors)	7,801,074,301	681,422,182	-1	1%
22	Credit Suisse Asset Management (Schweiz) AG	7,785,873,769	314,262,783	-5	1%
23	Vanguard Global Advisers LLC	7,479,736,946	430,600,397	0	1%
24	Morgan Stanley Smith Barney LLC (Investment Management)	6,939,636,715	329,093,578	1	0.5%
25	AllianceBernstein LP	6,910,748,707	872,740,404	-3	0.5%
	Others	791,517,123,067	(4,237,186,338)	(298)	57%
	Total	**1,396,424,735,655**	**22,089,736,792**	**(322)**	**100%**

Source: Intro-act, 13F Filings

Chart 28: Top 25 Agtech Buyers (Q/Q)

Rank	Investor Name	Invested in Agtech($)	Q/Q Change ($)	Change in Positions (#)	Agtech as % of AUM
1	Russell Investments Canada Ltd.	63,276,254	63,276,254	82	3%
2	Kron AS	19,337,454	19,337,454	55	3%
3	Desjardins Securities, Inc.	232,561,564	232,561,564	54	2%
4	Avior Wealth Management LLC	16,770,969	6,842,237	50	1%
5	Morgan Stanley & Co. International Plc	61,992,537	(26,192,003)	40	1%
6	The Mather Group LLC	24,341,726	(1,501,636)	38	0.4%
7	The Putnam Advisory Co. LLC	773,956,011	682,744,867	38	4%
8	CIBC Private Wealth Advisors, Inc.	668,606,561	57,678,506	34	1%
9	Wr Wealth Planners LLC	7,177,083	1,043,777	34	2%
10	Shinhan Asset Management Co., Ltd.	9,728,888	9,728,888	32	1%
11	I. G. Investment Management Ltd.	305,524,269	305,524,269	31	3%
12	Threadneedle Asset Management Ltd.	2,171,364,273	(38,786,986)	31	3%
13	Hilltop National Bank (Investment Management)	7,483,539	7,483,539	30	3%
14	Triad Advisors LLC	2,921,144	2,918,330	30	1%
15	Canada Pension Plan Investment Board	3,353,426,500	1,309,103,462	29	2%
16	Continuum Advisory LLC	3,129,191	(2,860,086)	29	0.5%
17	DoubleLine Capital LP	7,645,691	7,143,345	29	1%
18	LRI Investments LLC	3,529,375	3,529,375	29	1%
19	Mitsubishi UFJ Asset Management Co., Ltd.	2,431,388,752	418,844,528	29	2%
20	Central Pacific Bank (Investment Management)	19,054,767	19,054,767	28	2%
21	Simplicity Wealth LLC	69,223,277	66,794,454	27	2%
22	Catalyst Capital Advisors LLC	9,766,667	9,766,667	26	0.2%
23	Crewe Advisors LLC	3,514,461	3,434,500	26	0.4%
24	Glen Eagle Advisors LLC	5,669,218	5,669,218	26	1%
25	West Yorkshire Pension Fund	504,666,398	256,646,283	26	3%

Source: Intro-act, 13F Filings

Chart 29: Top 25 Agtech Sellers (Q/Q)

Rank	Investor Name	Invested in Agtech($)	Q/Q Change ($)	Change in Positions (#)	Agtech as % of AUM
1	Norges Bank Investment Management	987,558,851	(27,321,707,056)	-155	0.1%
2	State Street Global Advisors Ltd. (Canada)	767,085	(101,648,551)	-86	0.0%
3	China Asset Management Co., Ltd.	436,624,691	(478,945,595)	-71	1%
4	E Fund Management Co., Ltd.	2,812,325	(682,188,297)	-69	0.0%
5	OP Asset Management Ltd.	15,267,456	(199,208,939)	-66	0.1%
6	RBC Dominion Securities, Inc.	6,593,752	(82,171,145)	-54	0.1%
7	Sanders Capital LLC	705,064,406	(19,006,458)	-52	1%
8	The Caisse de depot et placement du Quebec	1,031,851,854	(1,041,990,871)	-50	1%
9	China Universal Asset Management Co., Ltd.	7,019,291	(701,160,178)	-47	0.0%
10	KBC Asset Management NV	1,129,387,642	(65,650,543)	-46	3%
11	Eastspring Investments (Singapore) Ltd.	529,674,750	54,620,136	-43	2%
12	Advisory Services Network LLC	65,951,007	1,325,747	-42	1%
13	Amundi Austria GmbH	161,808,662	9,357,713	-42	4%
14	KBC Fund Management Ltd.	47,586,129	(199,216,489)	-42	1%
15	Renta 4 Gestora SGIIC SA	316,423	(34,495,995)	-42	0.0%
16	CI Investments, Inc.	622,419,905	(96,981,029)	-40	1%
17	Irish Life Investment Managers Ltd.	674,847,822	25,708,098	-40	4%
18	APG Asset Management NV	2,340,806,012	(1,469,617,816)	-39	2%
19	Harvest Fund Management Co., Ltd.	5,406,838	(465,191,769)	-38	0.0%
20	LGT Capital Partners AG (Investment Management)	61,801,868	(72,553,181)	-37	1%
21	Danske Bank A/S (Investment Management)	985,089,900	78,400,536	-36	3%
22	1832 Asset Management LP	993,507,725	(36,674,894)	-35	1%
23	Forsta AP-fonden	371,881,546	(384,766,440)	-34	1%
24	Fusion Investment Advisors LLC	5,793,383	1,858,859	-34	1%
25	CCB Principal Asset Management Co., Ltd.	1,998,645	(41,904,527)	-33	0.0%

Source: Intro-act, 13F Filings

ETF SPOTLIGHT

iShares Emergent Food and AgTech Multisector ETF (IVEG)

Closing Price ($)	CUSIP	Expense Ratio	Inception
18.55	46436E395	0.47	04/25/2022

AUM ($ million)	Shares Outstanding (#)	Fund Flows (1M, $)	Fund Flows (YTD, $)
4.68	250,000	-	-915,000

Fund Description

The iShares Emergent Food and AgTech Multisector ETF (IVEG) is designed to provide investors with exposure to companies at the forefront of agricultural technology and innovative food products and services. The ETF's constituent selection process focuses on five-year net profit and projected revenue related to these themes, and weighting is determined by free-float market capitalization. By investing in IVEG, investors gain access to a diverse range of global companies positioned to benefit from groundbreaking advancements in agricultural technology, sustainable food product and packaging solutions, nutritional innovations, and the growing trend of alternative proteins. IVEG's forward-looking approach seeks to capitalize on long-term growth opportunities, allowing investors to participate in shaping the future of the global economy through food innovation and agricultural technology across various sectors, geographies, and company sizes.

ETF Returns Annualized (As of 7/31/2024)

1 Year	3 Year	5 Year	Since Inception
-3.91%	-	-	-7.05%

ETF Returns Cumulative (As of 7/31/2024)

1 Month	3 Month	YTD	Since Inception
3.63%	1.98%	1.02%	-15.29%

Top 10 Holdings (updated as of 8/6/2024)

Holdings	% Allocation	Market Value
SMURFIT WESTROCK PLC	7.26%	$340,102.89
KELLANOVA	5.20%	$243,448.65
INTERNATIONAL FLAVORS & FRAGRANCES	4.84%	$226,728.00
ECOLAB INC	4.69%	$219,463.08
INTERNATIONAL PAPER	4.69%	$219,431.19
PACKAGING CORP OF AMERICA	4.56%	$213,583.62
CORTEVA INC	4.41%	$206,664.84
WATERS CORP	4.36%	$204,159.13
TRIMBLE INC	4.24%	$198,545.09
DANONE SA	3.96%	$185,426.69

Source: Intro-act, FactSet

For more information on IVEG visit https://www.ishares.com/us/products/326601/ishares-emergent-food-and-agtech-multisector-etf/

Global X AgTech & Food Innovation ETF (KROP)

Closing Price ($)	CUSIP	Expense Ratio	Inception
9.61	37954Y178	0.51	07/12/2021

AUM ($ million)	Shares Outstanding (#)	Fund Flows (1M, $)	Fund Flows (YTD, $)
4.2	440,000	596,000	(22,000)

Fund Description

The Global X AgTech & Food Innovation ETF (KROP) is designed to capitalize on the rapid advancements in the agriculture and food sectors by investing in companies driving innovation and technology adoption. KROP targets companies engaged in various facets of AgTech, such as precision agriculture, agricultural automation, biotechnology, and controlled environment agriculture like vertical farming and hydroponics. Additionally, it includes firms contributing to food innovation, particularly in protein and dairy alternatives, as well as reducing food waste. KROP offers exposure to a high-growth potential market, with the global AgTech sector projected to expand from nearly $16 billion in 2022 to potentially surpass $35 billion by 2030. This thematic ETF benefits from global trends addressing food security and environmental sustainability, making it well-positioned for growth. KROP's unconstrained investment approach ensures exposure to the forefront of evolving production and consumption dynamics in the AgTech and Food Innovation sectors, regardless of sector or geography.

ETF Returns Annualized (As of 7/31/2024)

1 Year	3 Year	5 Year	Since Inception
-18.84%	-23.56%	-	-24.92%

ETF Returns Cumulative (As of 7/31/2024)

YTD	1 Month	3 Months	Since Inception
-4.25%	1.80%	-4.52%	-58.33%

Top 10 Holdings (updated as of 8/7/2024)

Holdings	% Allocation	Market Value
CORTEVA INC	12.40%	$523,237.12
DEERE & CO	12.01%	$506,860.70
KUBOTA CORP	11.72%	$494,598.01
NUTRIEN LTD	11.23%	$474,142.68
UNILEVER PLC	5.11%	$215,547.38
FMC CORP	4.93%	$208,005.00
CNH INDUSTRIAL NV	4.30%	$181,590.75
YUAN LONGPING-A	4.22%	$178,124.69
AGCO CORP	4.08%	$172,141.00
HEBEI YANGYUAN-A	3.85%	$162,660.32

Source: Intro-act, FactSet

For more information on KROP visit: https://www.globalxetfs.com/funds/krop/#performance

12-MONTH ETF PERFORMANCE

Chart 30: 12-Month Indexed Returns of IVEG and KROP vs. S&P 500
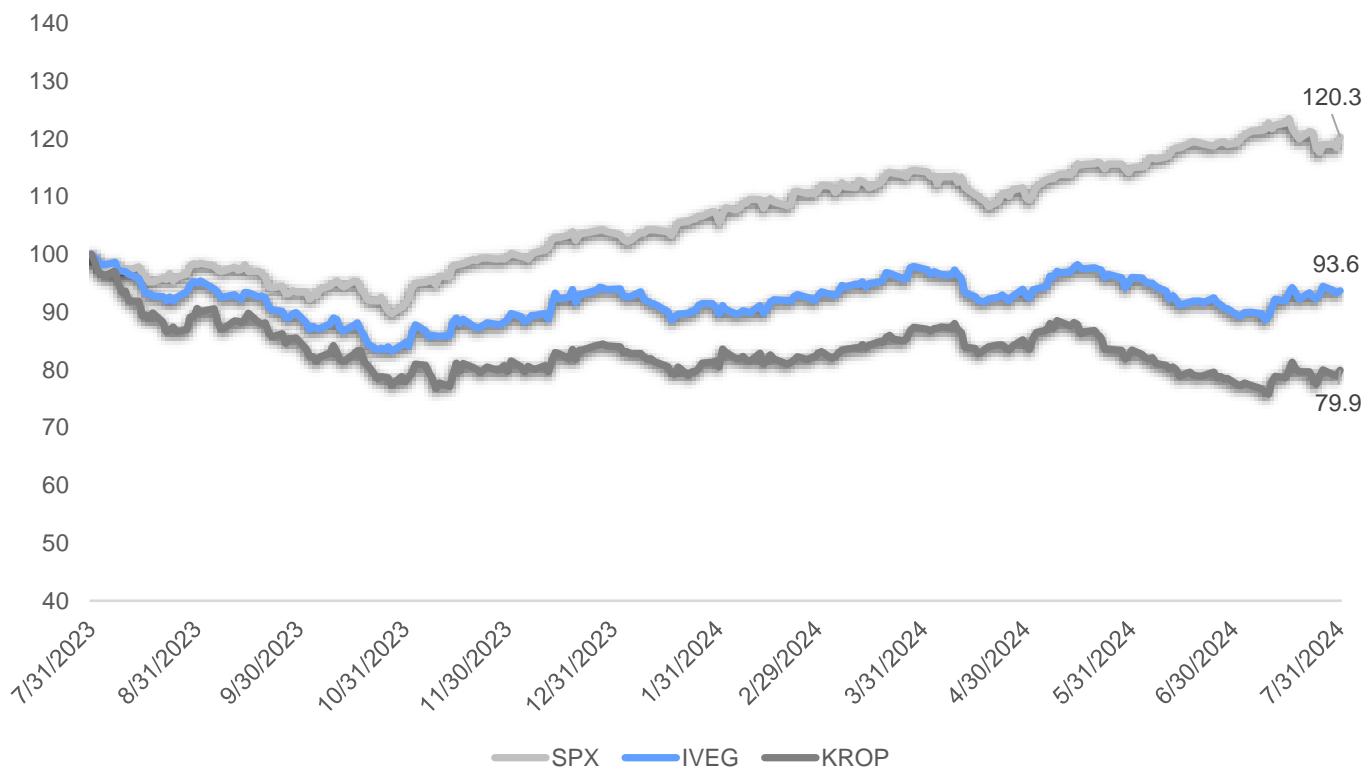
Source: Intro-act, FactSet, Data as of 7/31/24.

GAINERS AND LOSERS – AGTECH STOCKS

Chart 31: Top 10 M/M Agtech Gainers (July 2024)
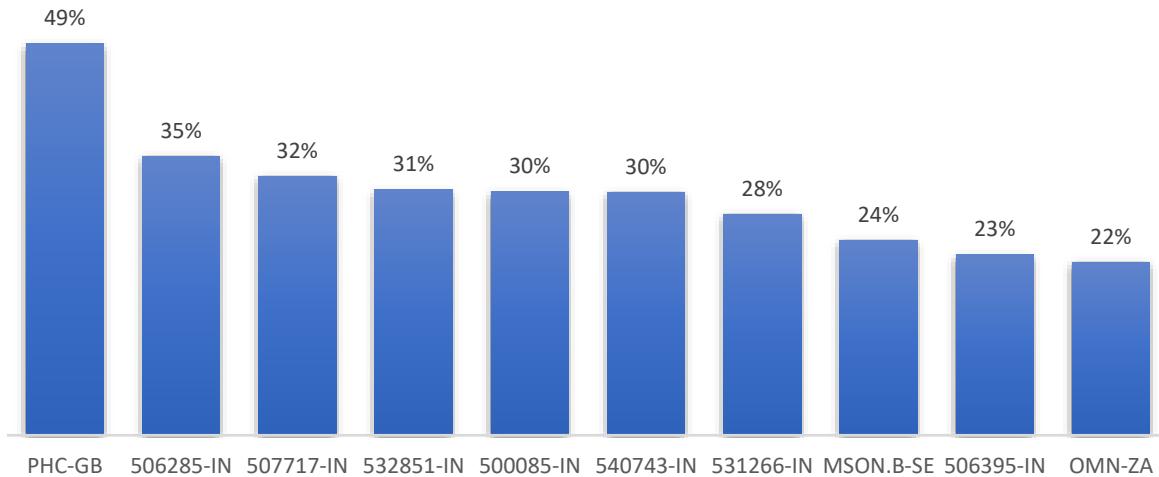
Source: Intro-act, FactSet

Chart 32: Top 10 M/M Agtech Losers (July 2024)
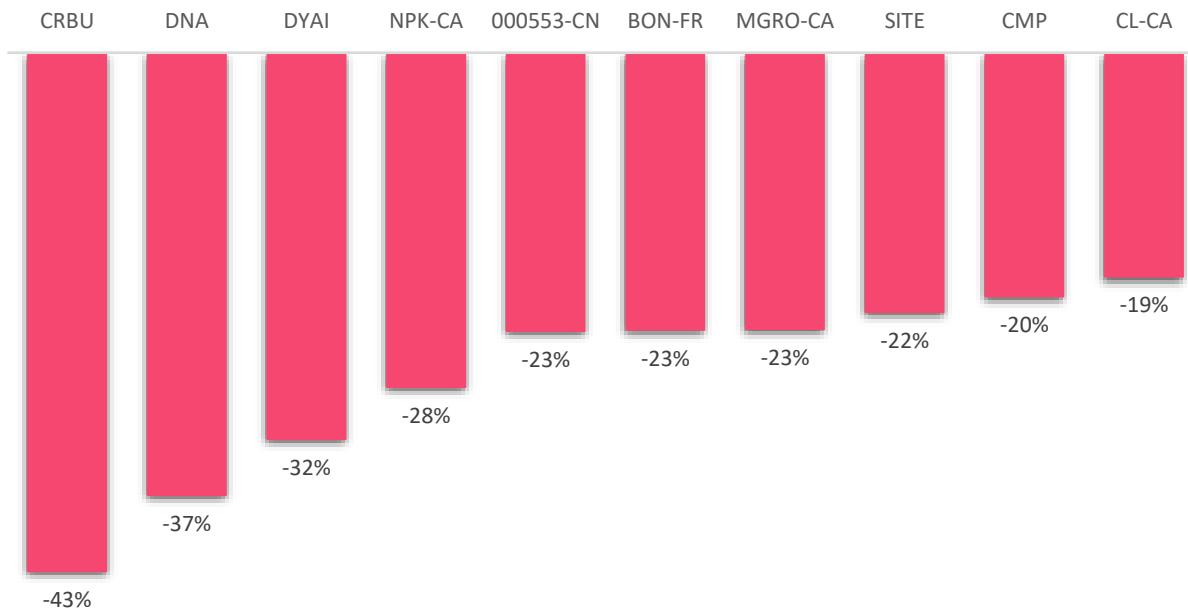
Source: Intro-act, FactSet

Chart 33: Top 10 YTD Agtech Gainers
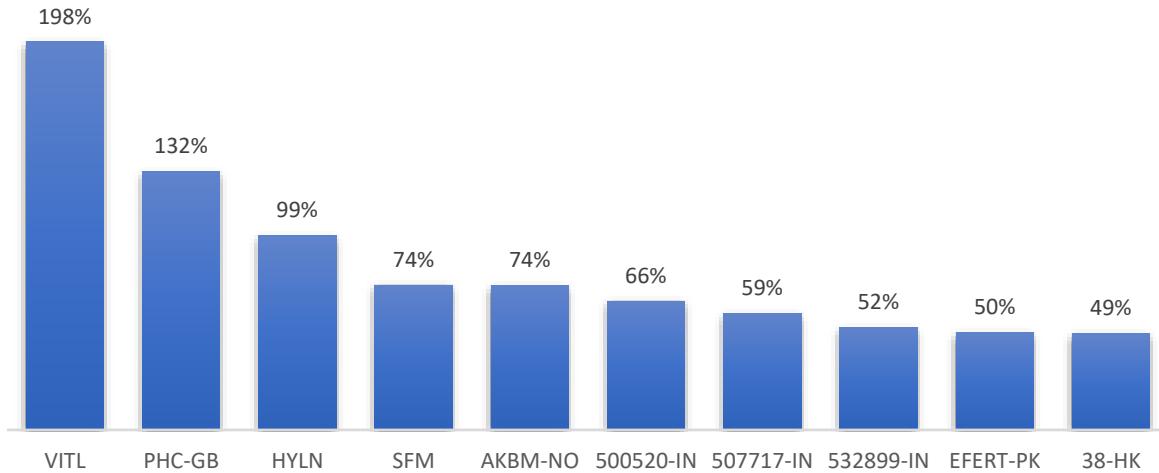
Source: Intro-act, FactSet. YTD Data Through end of July 2024.

Chart 34: Top 10 YTD AgTech Losers

Source: Intro-act, FactSet. YTD Data Through end of July 2024.

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SEGMENT RETURN AND VALUATION

Chart 35: YTD Stock Price Returns by Segment
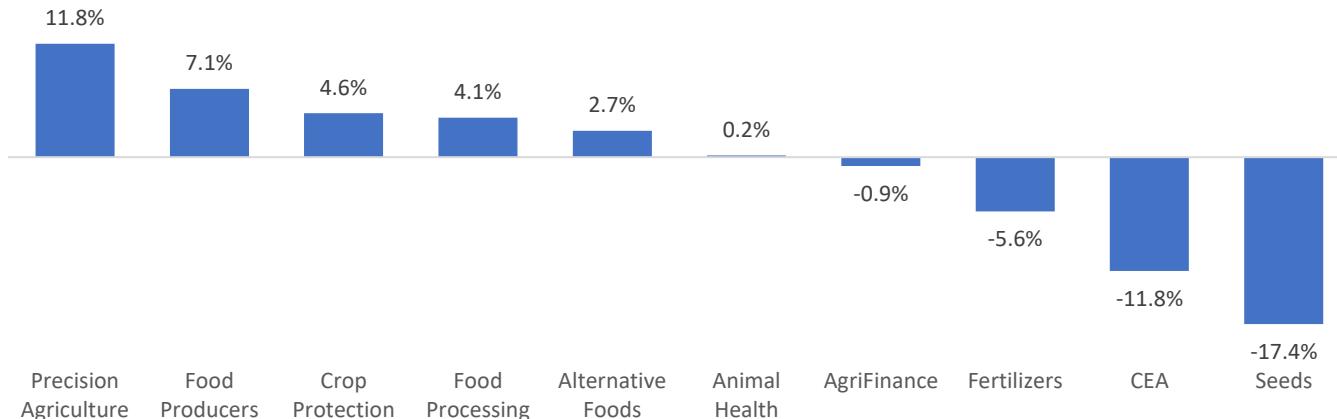
Source: Intro-act, FactSet. YTD Data Through end of July 2024.

Chart 36: Agtech Industry Growth and Valuation by Segment
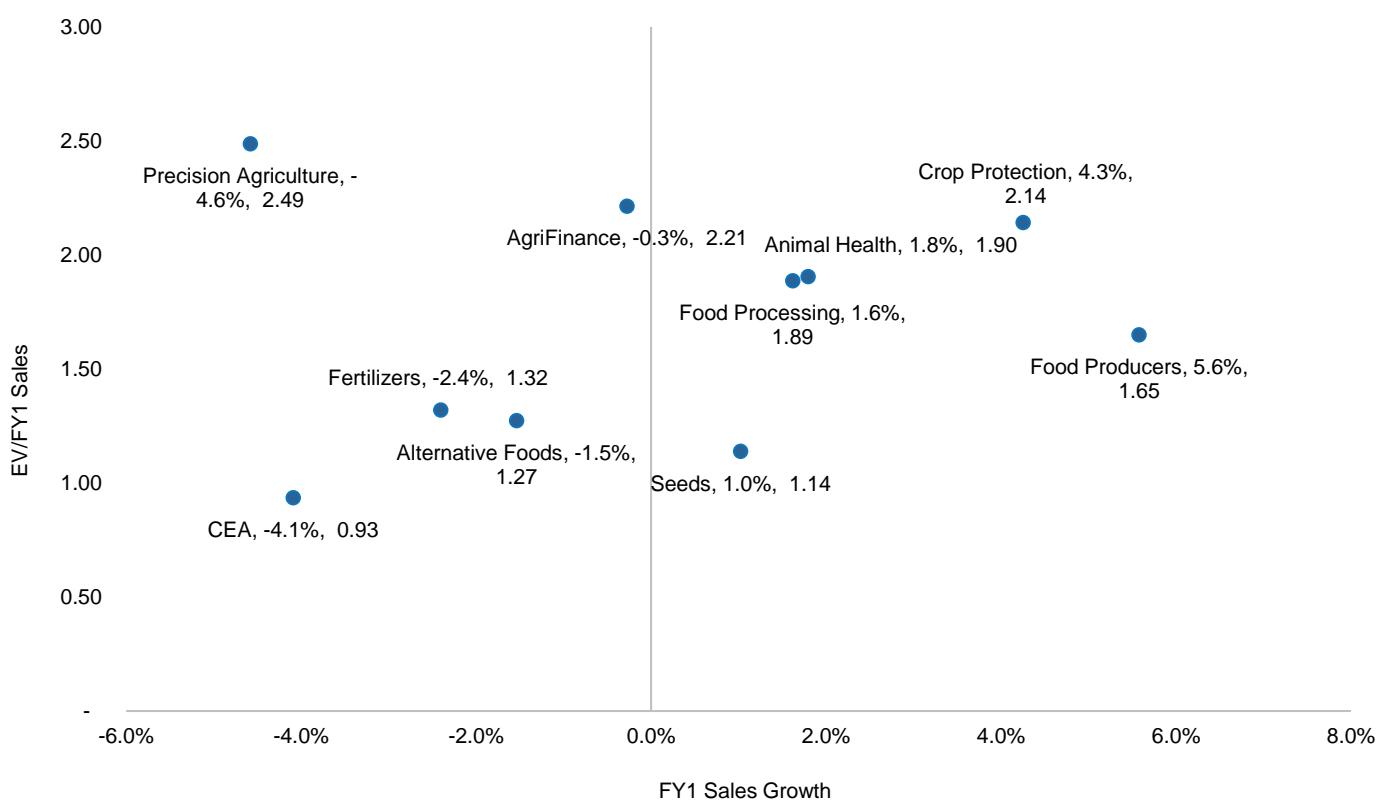
Source: Intro-act, FactSet. Data Through end of July 2024. FY0 = last reported year. FY1 = first unreported year.

Chart 37: EV/ FY1 Sales Multiple by Segment
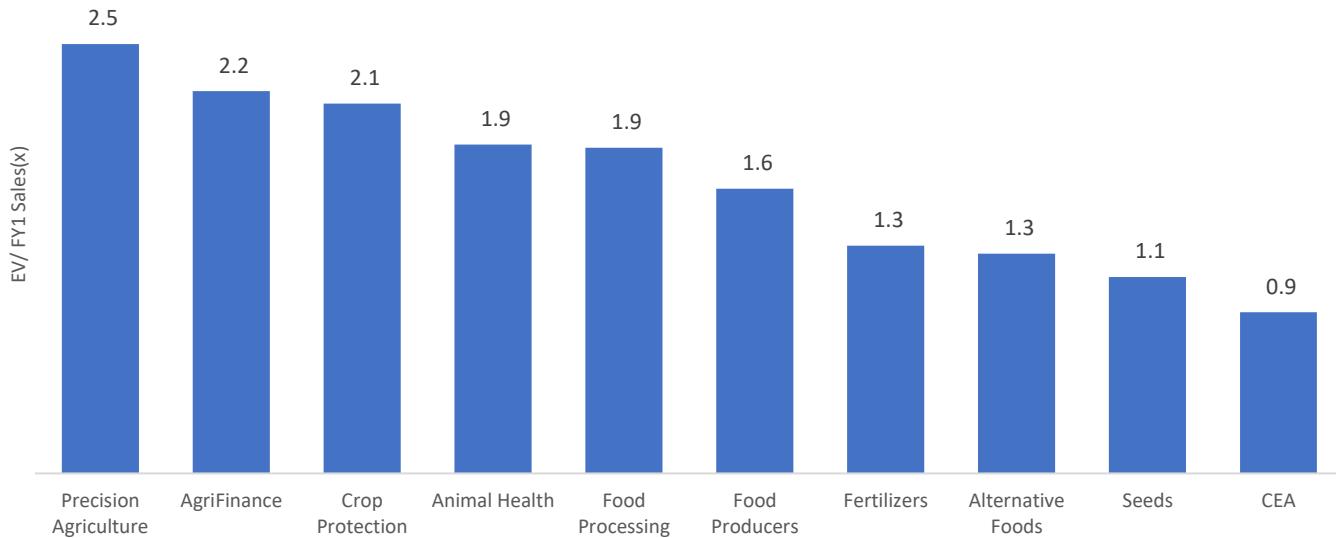
Source: Intro-act, FactSet. Data Through end of July 2024. FY0 = last reported year. FY1 = first unreported year.

Chart 38: EV/ FY1 EBITDA Multiple by Segment
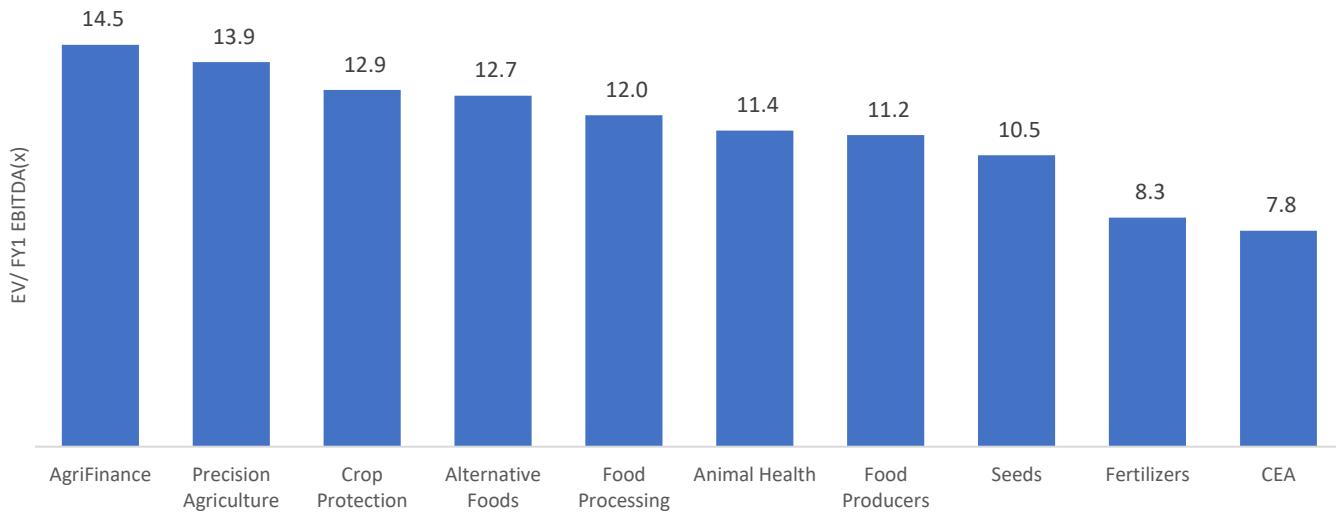
Source: Intro-act, FactSet. Data Through end of July 2024. FY0 = last reported year. FY1 = first unreported year.

Chart 39: Price-to-Book Multiple by Segment
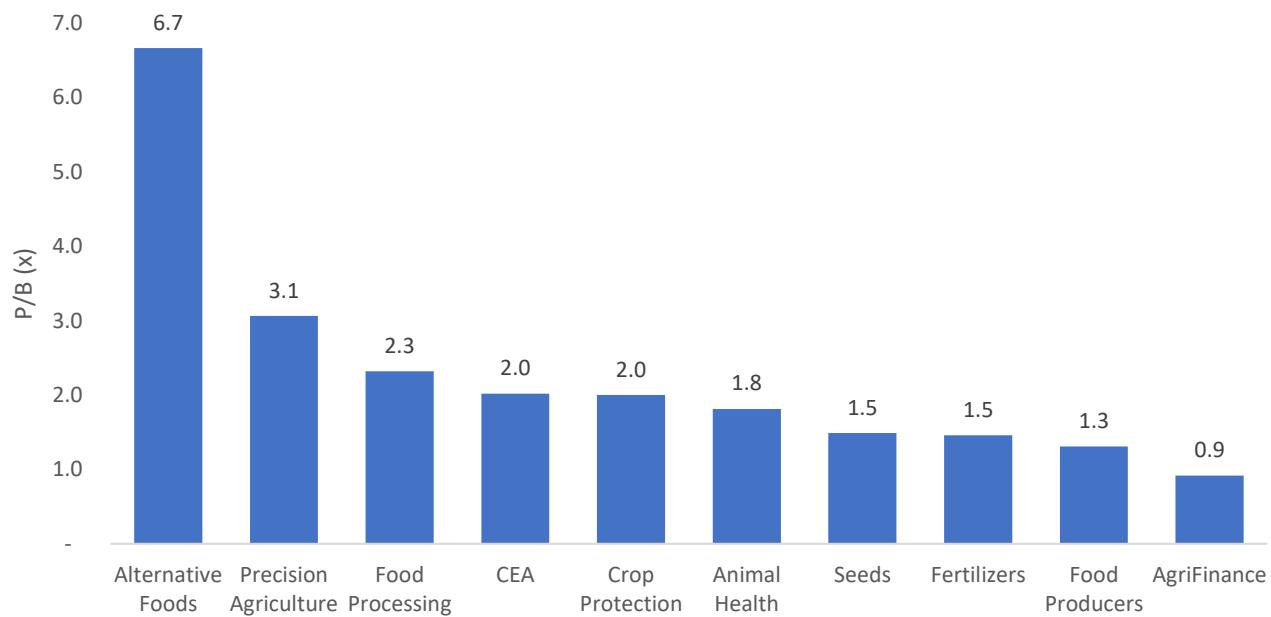
Source: Intro-act, FactSet. Data Through end of July 2024. FY0 = last reported year. FY1 = first unreported year.

AGTECH CAPITAL MARKET TRENDS

Chart 40: Agtech VC Deal Activity by Quarter

*Source: Intro-act, Pitchbook, *Data as of March 31, 2024*

Chart 41: Global Agtech VC Deal Activity – Last 10 years
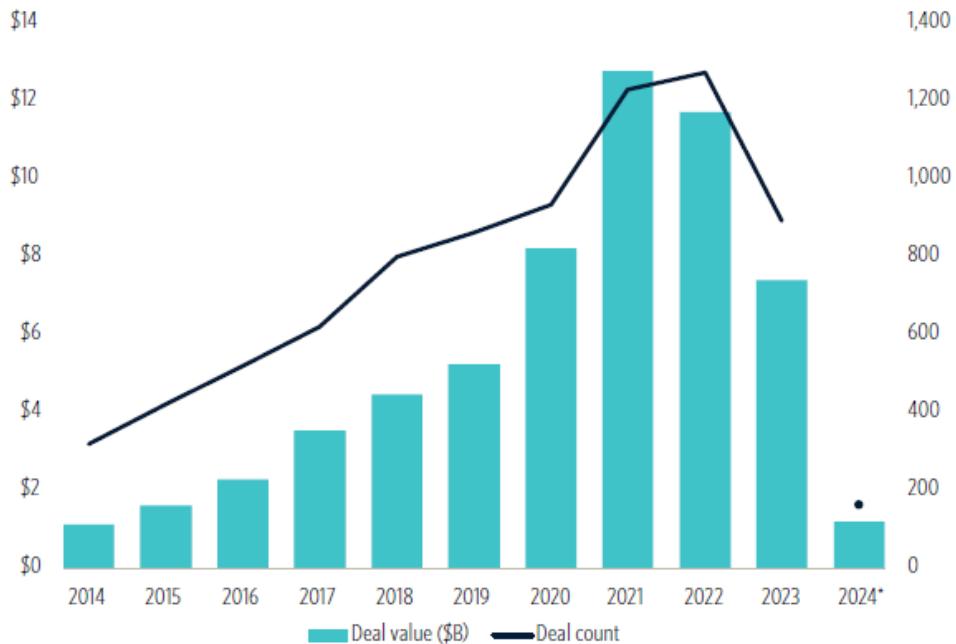
*Source: Intro-act, Pitchbook, *Data as of March 31, 2024*

Chart 42: North American Agtech VC Deal Activity – Last 10 years

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024*
Deal value ($B)	0.7	1.0	1.6	2.5	2.9	3.4	4.8	7.9	5.5	3.6	0.6
Deal count	162	192	218	257	326	347	347	440	450	327	53
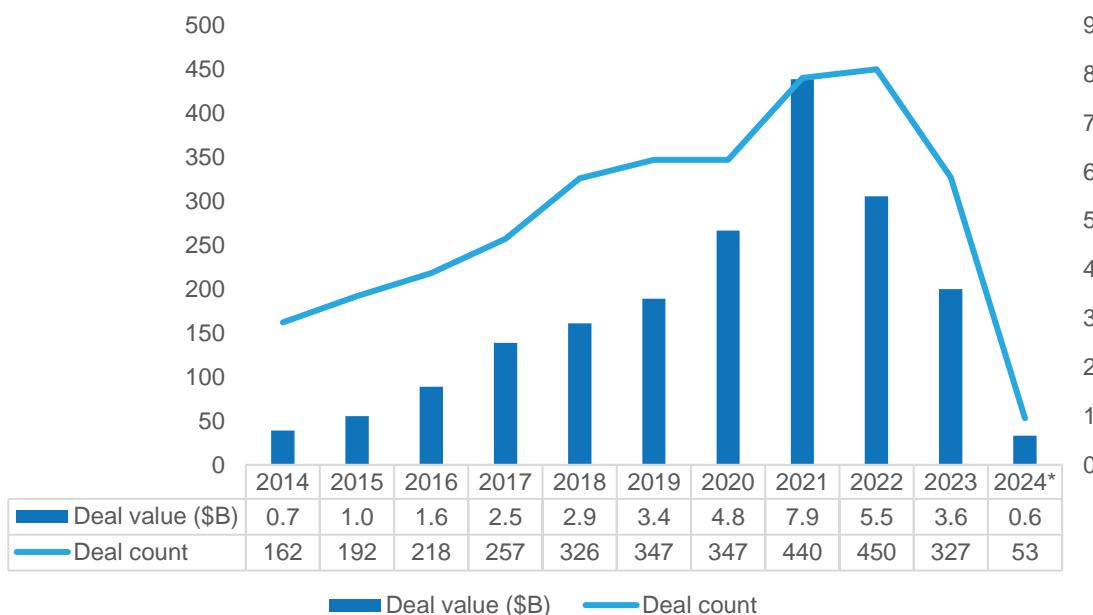
*Source: Intro-act, Pitchbook, *Data as of March 31, 2024*

Chart 43: European Agtech VC Deal Activity – Last 10 years

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024*
Deal value ($B)	0.2	0.3	0.4	0.4	0.9	1.0	2.1	2.4	2.6	2.0	0.3
Deal count	88	121	150	182	246	251	298	375	363	250	50
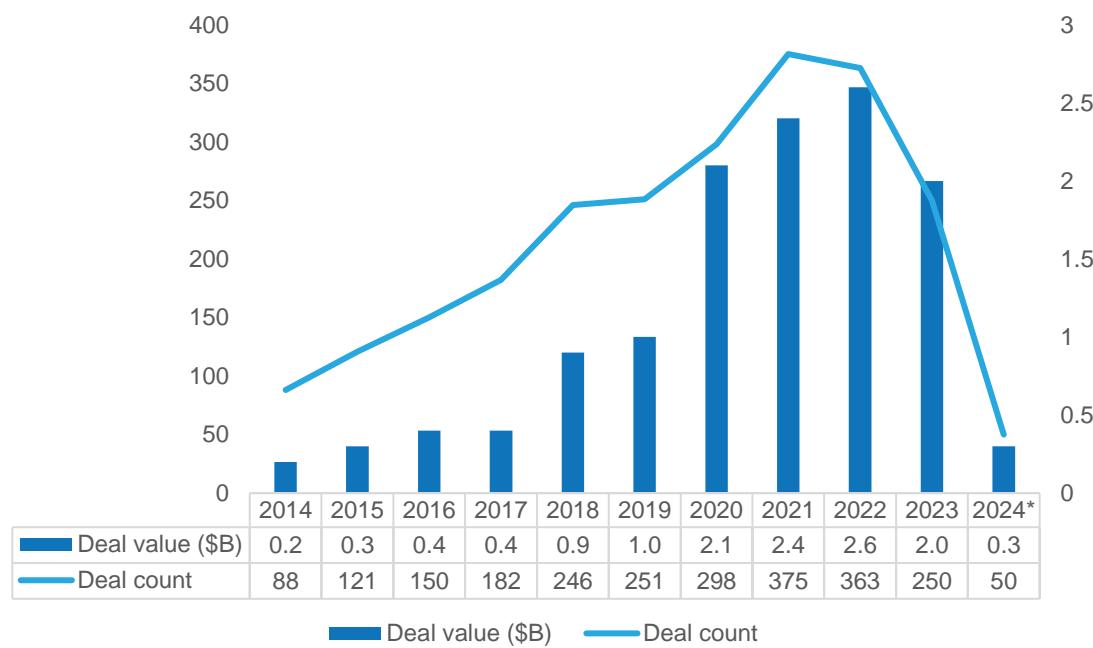
*Source: Intro-act, Pitchbook, *Data as of March 31, 2024*

Chart 44: Asian Agtech VC Deal Activity – Last 10 years

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024*
Deal value ($B)	0.1	0.2	0.2	0.5	0.5	0.8	1.0	1.8	2.5	1.2	0.2
Deal count	45	82	110	117	148	181	208	271	312	210	41
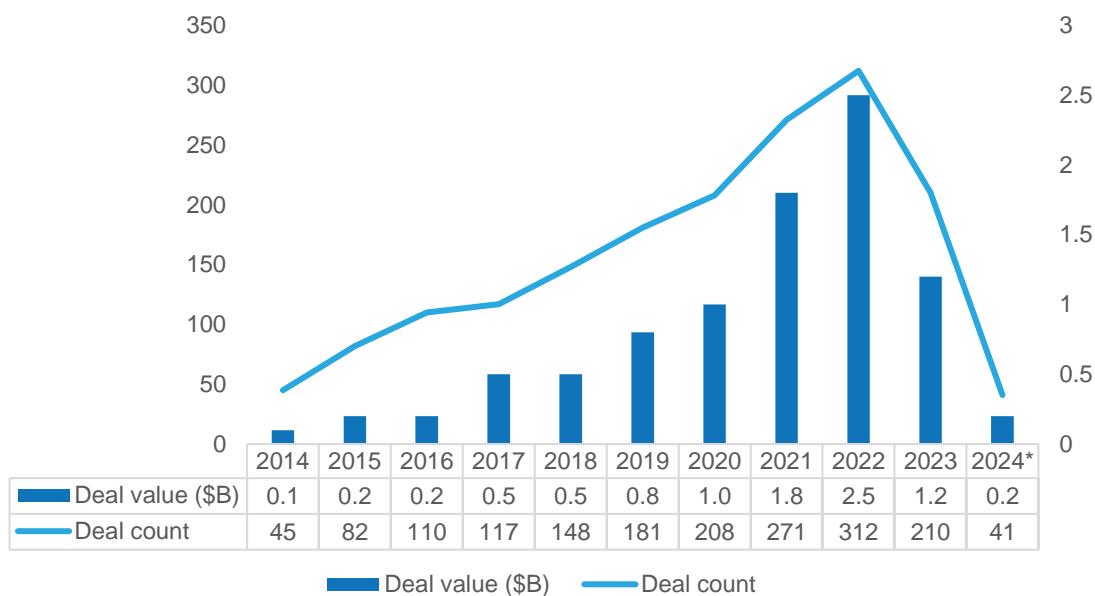
*Source: Intro-act, Pitchbook, *Data as of March 31, 2024*

Chart 45: Agtech VC Deal Activity by Segment – Q1 2024

	Ag biotech	Agrifinance & e-commerce	Animal ag	Indoor farming	Precision ag
Deal value ($M)	391.3	222.8	126.9	197.3	280.0
Deal count	51	30	22	13	47
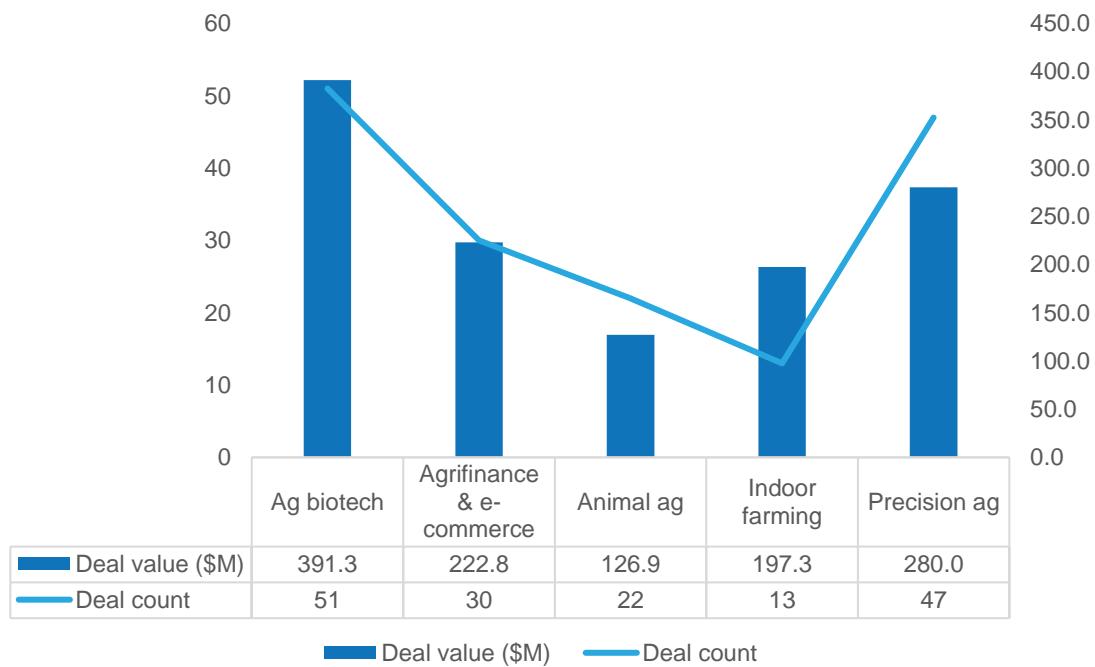
*Source: Intro-act, Pitchbook, *Data as of March 31, 2024*

Chart 46: Agtech VC Deal Activity by Segment – TTM (as of Q1 2024)

	Ag biotech	Agrifinance & e-commerce	Animal ag	Indoor farming	Precision ag
Deal value ($M)	1901.1	1367.7	876.3	633.2	2039.6
Deal count	223	137	111	79	263
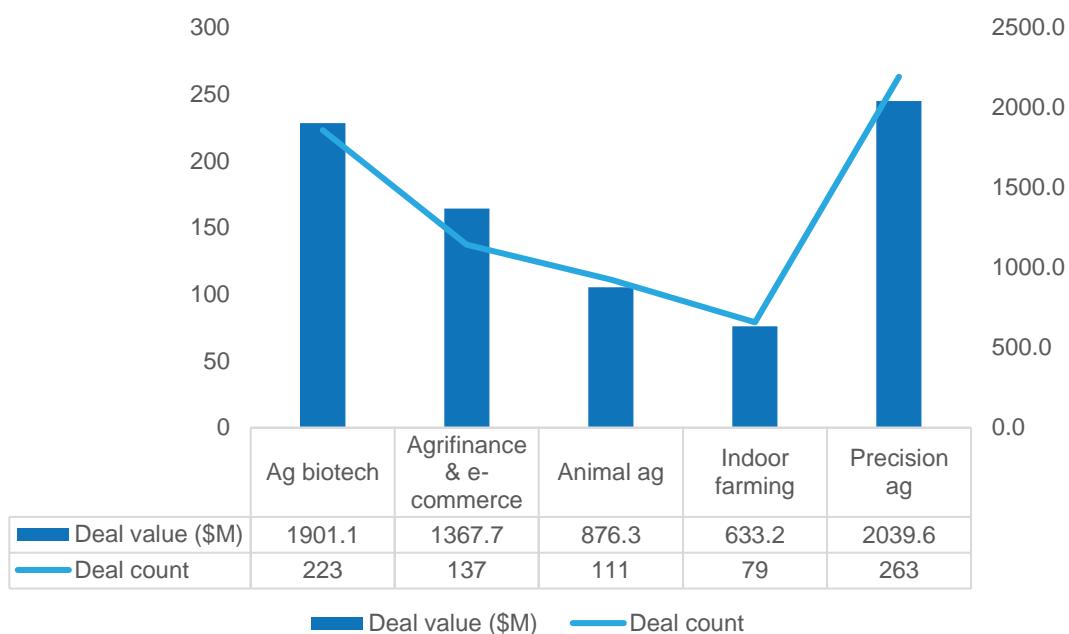
*Source: Intro-act, Pitchbook, *Data as of March 31, 2024*

Chart 47: Agtech VC Exit Activity by Year

*Source: Intro-act, Pitchbook, *Data as of March 31, 2024*

Chart 48: Top 10 AgTech VC Deals in Q2 2024*

Company	Deal Date (2024)	Subsegment	Deal Value ($mn)
Oishii	04-Jun	Horticulture	144.0
Arbol	30-Apr	Commercial/Professional Insurance	60.0
Agreena	13-May	Business/Productivity Software	53.4
InnerPlant	14-Jun	Agtech	34.5
Vive Crop Protection	23-May	Agriculture Chemicals	34.4
Ecozen	19-Apr	Alternative Energy Equipment	30.0
eFishery	31-May	Aquaculture	30.0
Nihon Agri	30-May	Agriculture Services	30.0
Tepbac	07-May	Business/Productivity Software	20.0
Zordi	20-Jun	Food Products	20.0

*Source: Intro-act, Pitchbook, *Data as of June 30, 2024*

Chart 49: Top-10 VC-Backed Agtech Companies by Total VC Raised to Date*

Company	Category	VC($mn) raised to date
Indigo	Agriculture	1,956
Plenty	Agriculture	941
Farmers Business Network	Commercial Services	939
Plant-Ag	Agriculture	800
Bowery	Agriculture	756
Inari	Agriculture	627
Xiangyu Agriculture	Agriculture	607
eFishery	Agriculture	497
Pure Harvest Smart Farms	Agriculture	452
Ninjacart	Commercial Services	368

*Source: Intro-act, Pitchbook, *Data as of August 9, 2024*

Chart 50: Key Agtech VC Exits in Q2 2024*

Company	Deal Date (2024)	Subsegment
A de Agro	11-Jun	Business/Productivity Software
Haber Technologies	24-May	Agtech
Scanopy	13-May	Agtech

*Source: Intro-act, Pitchbook, *Data as of June 30, 2024*

AGTECH SPAC ACTION

Chart 51: Agtech SPACs (Searching)

S. No	SPAC Name	Ticker	IPO Date	Deadline Date
1	Agriculture & Natural Solutions Acquisition	ANSC	11/8/2023	11/8/2025
2	Keen Vision Acquisition Corp.	KVAC	7/24/2023	10/24/2024

Source: Intro-act, Boardroom Alpha

Chart 52: Agtech SPACs (Business Combination Agreement Announced)

S.No.	SPAC Name	Ticker	Target Company	EV ($ Mn)	Expected Closing
1	Bite Acquisition Corp.	BITE	Above Food Corp.	319	3Q23
2	Kairous Acquisition Corp. Ltd	KACLU	Bamboo Mart Limited	-	4Q24

Source: Intro-act, Boardroom Alpha

Chart 53: Agtech SPACs (Closed Deals Since January 2022)

S. No	SPAC Name	Ticker (Old)	DE-SPAC	Ticker	Closing Date
1	Globis Acquisition Corp.	GLAQ	Forafric	AFRI	10-Jun-22
2	Agrico Acquisition Corp.	RICO	Kalera	KAL	28-Jun-22
3	Riverview Acquisition Corp.	RVAC	Westrock Coffee Company	WEST	26-Aug-22
4	Lightjump Acquisition Corporation	LJAQ	Moolec Science	MLEC	3-Jan-23
5	TPB Acquisition Corporation I	TPBA	Lavoro	TPBA	27-Feb-23
6	Perception Capital Corp. II	PCCT	Spectaire Inc.	SPEC	19-Oct-23
7	10X Capital Venture Acquisition Corp. II	VCXA	African Agriculture, Inc.	AAGR	6-Dec-23
8	Lakeshore Acquisition II Corp.	LBBB	Nature's Miracle	NMHI	11-Mar-24
9	Edoc Acquisition Corp	ADOC	Australian Oilseeds Investments	COOT	21-Mar-24

| 10 | Bite Acquisition Corp. | BITE | Above Food Corp. | ABVE | 1-Jul-24 |

Source: Intro-act, Boardroom Alpha

AGTECH EVENTS CALENDAR

S. No.	Event	Location	Dates
1	AgriBITs Summit 2024	Utrecht, Netherlands	5th–6th September 2024
2	Taiwan Smart Agriweek	Taipei, Taiwan	11th–13th September 2024
3	Solarplaza Summit Agri-PV	Paris, France	18th September 2024
4	5th Urban Agri World Summit	Durban, South Africa	18th–20th September 2024
5	Vertical Farming World Congress 2024	Frankfurt, Germany	25th–26th September 2024
6	World Agri-Tech Innovation Summit	London, UK	30th September–1st October 2024
7	Animal AgTech Innovation Summit	Amsterdam, Netherlands	9th–10th October 2024
8	Global AgInvesting Asia 2024	Tokyo, Japan	17th–18th October 2024
9	FIRA	Woodland, US	22nd–24th October 2024
10	World Agri-Tech Innovation Summit	Mexico City, Mexico	29th–30th October 2024
11	3rd Annual AgriVoltaics Europe	Vienna, Austria	5th–7th November 2024
12	AgriBusiness Global-SE Asia Conference	Jakarta, Indonesia	6th–7th November 2024
13	AgriNext Conference	Dubai, UAE	13th–14th November 2024
14	Global AgInvesting Europe 2024	London, UK	2nd–3rd December 2024
15	World Agri-Tech Innovation Summit	Dubai, UAE	9th–10th December 2024
16	Precision Farming Dealer Summit	Louisville, US	6th–7th January 2025

Source: Intro-act, Multiple Web Sources

AGTECH COMP TABLE

		Share Price	Mkt Cap ($ Mns)	Ent Val ($ Mns)	Price Performance			Sales			EBITDA			Book Value	
					% to High	% to Low	% YTD	FY0	FY1	EV/Sales	FY0	FY1	EV/ EBITDA	Book/ Share	P/ Book
Peer Set															
Alternative Foods	Ticker		239,848	307,712			3%	245,441	241,668	1.3 x	23,147	24,293	12.7 x		6.7 x
1	**GIVAUDAN SA** GIVN-CH	4,892.9	45,179	49,834	1%	-38%	18%	7,967	8,602	5.8 x	1,737	2,031	24.5 x	531.07	9.2 x
2	**GENERAL MLS INC** GIS	67.1	37,474	49,718	12%	-10%	3%	19,857	19,899	2.5 x	4,152	4,156	12.0 x	16.81	4.0 x
3	**ARCHER DANIELS MIDLAND CO** ADM	62.0	29,650	36,404	41%	-18%	-14%	93,935	88,997	0.4 x	6,185	4,842	7.5 x	46.33	1.3 x
4	**INTERNATIONAL FLAVORS&FRAGRA** IFF	99.5	25,402	35,769	2%	-38%	23%	11,479	11,119	3.2 x	2,000	2,119	16.9 x	55.97	1.8 x
5	**KELLANOVA** K	58.2	19,881	26,364	30%	-18%	4%	13,122	12,641	2.1 x	2,039	2,262	11.7 x	9.67	6.0 x
6	**KERRY GROUP** KRZ-IE	93.5	16,007	17,830	8%	-19%	8%	8,631	8,717	2.0 x	1,261	1,366	13.1 x	40.87	2.3 x
7	**TYSON FOODS INC** TSN	60.9	17,418	30,140	5%	-26%	13%	52,881	53,156	0.6 x	2,147	3,009	10.0 x	51.82	1.2 x
8	**SYMRISE AG** SY1-DE	126.3	17,658	20,017	0%	-27%	15%	5,159	5,463	3.7 x	974	1,120	17.9 x	29.11	4.3 x
9	**CHINA MENGNIU DAIR** 2319-HK	1.7	6,599	9,791	115%	-6%	-38%	13,644	13,656	0.7 x	1,265	1,308	7.5 x	1.59	1.1 x
10	**GEA GROUP AG** G1A-DE	44.2	7,616	7,210	1%	-24%	8%	5,861	5,967	1.2 x	845	878	8.2 x	15.95	2.8 x
11	**MONDE NISSIN CORPO** MONDE-PH	0.2	2,823	2,692	32%	-32%	4%	1,419	1,453	1.9 x	184	287	9.4 x	0.06	2.7 x
12	**SENSIENT TECHNOLOGIES CORP** SXT	78.1	3,307	3,944	6%	-32%	18%	1,456	1,550	2.5 x	241	261	15.1 x	25.11	3.1 x
13	**MAPLE LEAF FOODS INC NEW** MFI-CA	18.2	2,250	3,632	30%	-13%	-5%	3,606	3,593	1.0 x	317	398	9.1 x	9.18	2.0 x

14	YUAN LONGPING HIGH	000998-CN	1.4	1,787	3,596	77%	-7%	-31%	1,273	1,454	2.5 x	223	300	12.0 x	0.59	2.3 x
15	GINKGO BIOWORKS HOLDINGS INC	DNA	0.4	657	118	549%	-33%	-78%	251	179	0.7 x	(444)	(363)	-	0.52	0.7 x
16	ADAMA LTD	000553-CN	0.6	1,365	3,514	93%	-8%	-36%	4,535	-	-	300	-	-	1.29	0.5 x
17	CHENG DE LOLO CO L	000848-CN	1.1	1,151	692	22%	-10%	1%	408	442	1.6 x	115	117	5.9 x	0.45	2.4 x
18	HAIN CELESTIAL GROUP INC	HAIN	7.7	695	1,516	65%	-27%	-29%	1,797	1,737	0.9 x	167	153	9.9 x	10.51	0.7 x
19	WINALL HI-TECH SEE	300087-CN	0.9	826	1,007	88%	-8%	-26%	568	824	1.2 x	77	91	11.1 x	0.29	3.0 x
20	SUNOPTA INC	STKL	5.3	632	1,021	43%	-47%	-3%	630	701	1.5 x	84	90	11.3 x	1.45	3.7 x
21	OATLY GROUP AB	OTLY	1.0	587	921	52%	-55%	-17%	783	834	1.1 x	(158)	(46)	-	0.41	2.4 x
22	BEYOND MEAT INC	BYND	6.3	407	1,469	161%	-18%	-29%	343	322	4.6 x	(261)	(101)	-	(8.66)	-0.7 x
23	OURO FINO SAUDE	OFSA3-BR	3.6	195	208	57%	-9%	-33%	-	-	-	-	-	-	2.31	1.6 x
24	BIOTALYS NV	BTLS-BE	3.3	107	88	100%	-47%	-35%	3	3	26.9 x	(21)	(10)	-	0.86	3.9 x
25	MIDSONA AB	MSON.B-SE	1.0	147	193	12%	-42%	25%	363	358	0.5 x	18	26	7.4 x	1.95	0.5 x
26	MUSTGROW BIOLOGICS CORP	MGRO-CA	0.5	28	24	157%	-11%	-45%	3	0	117.5 x	-	-	-	0.07	8.1 x

			Share Price	Mkt Cap ($ Mns)	Ent Val ($ Mns)	Price Performance			Sales			EBITDA			Book Value	
						% to High	% to Low	% YTD	FY0	FY1	EV/Sales	FY0	FY1	EV/ EBITDA	Book/ Share	P/ Book
Peer Set																
	Precision Agriculture	Ticker		559,784	726,432			12%	306,150	292,121	2.5 x	53,975	52,368	13.9 x		3.1 x
27	**CATERPILLAR INC**	**CAT**	346.2	169,310	202,286	10%	-35%	17%	67,060	66,089	3.1 x	15,223	15,804	12.8 x	36.05	9.6 x
28	**DEERE & CO**	**DE**	372.0	102,507	161,869	19%	-9%	-7%	55,565	45,543	3.6 x	14,257	10,207	15.9 x	82.32	4.5 x
29	**CUMMINS INC**	**CMI**	291.8	39,912	45,256	11%	-27%	22%	34,065	33,431	1.4 x	3,017	5,061	8.9 x	69.72	4.2 x
30	**INGERSOLL RAND INC**	**IR**	100.4	40,505	41,912	1%	-41%	30%	6,876	7,344	5.7 x	1,787	2,034	20.6 x	24.66	4.1 x
31	**MAHINDRA &MAHINDRA**	**500520-IN**	34.7	43,177	50,020	4%	-51%	67%	11,855	13,477	3.7 x	1,542	1,878	26.6 x	7.09	4.9 x
32	**TRACTOR SUPPLY CO**	**TSCO**	263.3	28,389	33,230	10%	-30%	22%	14,556	14,906	2.2 x	1,872	1,928	17.2 x	19.69	13.4 x
33	**KUBOTA CORP**	**6326-JP**	14.5	17,049	30,803	17%	-19%	-4%	20,131	21,128	1.5 x	2,744	2,928	10.5 x	13.13	1.1 x
34	**CNH INDUSTRIAL NV**	**CNHI**	10.7	13,392	37,612	34%	-13%	-12%	24,687	19,764	1.9 x	3,130	2,469	15.2 x	6.01	1.8 x
35	**TRIMBLE INC**	**TRMB**	54.5	13,319	16,335	20%	-27%	3%	3,799	3,624	4.5 x	978	1,078	15.1 x	18.26	3.0 x
36	**PENTAIR PLC**	**PNR**	87.9	14,542	16,640	2%	-35%	21%	4,105	4,106	4.1 x	909	1,022	16.3 x	20.74	4.2 x
37	**TORO CO**	**TTC**	95.7	9,944	10,904	9%	-19%	0%	4,553	4,723	2.3 x	712	732	14.9 x	15.88	6.0 x
38	**AGCO CORP**	**AGCO**	94.4	7,046	8,449	41%	-11%	-22%	14,412	12,457	0.7 x	1,973	1,357	6.2 x	63.73	1.5 x
39	**SITEONE LANDSCAPE SUPPLY INC**	**SITE**	146.7	6,632	7,514	28%	-22%	-10%	4,301	4,493	1.7 x	411	393	19.1 x	34.95	4.2 x
40	**TRELLEBORG AB**	**TBABF**	37.3	7,942	8,766	16%	-39%	14%	3,270	3,288	2.7 x	670	706	12.4 x	16.37	2.3 x
41	**VALMONT INDS INC**	**VMI**	298.4	6,024	7,160	3%	-37%	28%	4,175	4,066	1.8 x	580	613	11.7 x	72.97	4.1 x

42	BUCHER INDUSTRIES	BUCN-CH	404.4	4,145	3,832	12%	-14%	-4%	4,039	3,808	1.0 x	580	492	7.8 x	200.50	2.0 x
43	ESCORTS KUBOTA LTD	500495-IN	49.9	5,511	5,022	6%	-39%	42%	1,053	1,230	4.1 x	140	167	30.0 x	10.11	4.9 x
44	HUSQVARNA AB	HUSQ.B-SE	6.8	3,156	5,314	43%	-9%	-17%	5,079	4,692	1.1 x	754	674	7.9 x	4.16	1.6 x
45	KADANT INC	KAI	351.5	4,128	4,367	3%	-40%	25%	958	1,057	4.1 x	201	228	19.2 x	66.65	5.3 x
46	TOMRA SYSTEMS ASA	TOM-NO	16.4	4,868	5,268	1%	-56%	35%	1,359	1,438	3.7 x	224	258	20.4 x	1.98	8.3 x
47	TURK TRAKTOR	TTRAK.E-TR	23.4	2,341	2,138	68%	-6%	-3%	1,582	2,005	1.1 x	386	398	5.4 x	4.65	5.0 x
48	ALAMO GROUP INC	ALG	192.7	2,323	2,532	20%	-18%	-8%	1,690	1,686	1.5 x	247	239	10.6 x	81.58	2.4 x
49	LINDSAY CORP	LNN	126.0	1,372	1,357	9%	-16%	-2%	674	598	2.3 x	121	101	13.5 x	44.09	2.9 x
50	HELIOS TECHNOLOGIES INC	HLIO	46.0	1,524	2,033	37%	-18%	1%	836	837	2.4 x	161	168	12.1 x	26.10	1.8 x
51	TITAN INTL INC ILL	TWI	8.5	621	1,093	80%	-21%	-42%	1,822	1,952	0.6 x	205	156	7.0 x	8.44	1.0 x
52	GORMAN RUPP CO	GRC	41.3	1,083	1,456	2%	-30%	16%	660	669	2.2 x	116	124	11.7 x	13.67	3.0 x
53	GREENWORKS (JIANGS	301260-CN	1.8	381	852	84%	-29%	-27%	637	769	1.1 x	(33)	65	13.2 x	1.31	1.4 x
54	COMER INDS SPA	COM-IT	36.3	1,040	1,140	6%	-29%	12%	1,324	1,102	1.0 x	222	182	6.3 x	19.51	1.9 x
55	ASTEC INDS INC	ASTE	35.1	799	870	61%	-19%	-6%	1,338	1,305	0.7 x	100	96	9.1 x	28.57	1.2 x
56	AG GROWTH INTL INC	AFN-CA	41.2	784	1,404	16%	-19%	8%	1,130	1,167	1.2 x	217	222	6.3 x	12.45	3.3 x
57	TITAN MACHY INC	TITN	17.8	407	1,574	96%	-17%	-38%	2,758	2,910	0.5 x	192	119	13.3 x	29.04	0.6 x
58	DXP ENTERPRISES INC	DXPE	54.8	872	1,313	5%	-48%	62%	1,679	1,722	0.8 x	174	173	7.6 x	23.57	2.3 x
59	YAMABIKO CORPO	6250-JP	14.3	630	631	4%	-37%	44%	1,005	1,116	0.6 x	-	-	-	15.34	0.9 x
60	EXEL INDUSTRIES	EXE-FR	55.4	376	503	18%	-23%	-7%	1,203	1,223	0.4 x	109	104	4.8 x	70.65	0.8 x

61	TSUKISHIMA HOLDING	6332-JP	9.8	449	588	3%	-21%	10%	797	-	-	-	-	-	13.56	0.7 x
62	MILLAT TRACTORS	MTL-PK	2.3	432	461	7%	-37%	9%	150	329	1.4 x	-	-	-	0.16	14.4 x
63	VST TILLERS TRACT	531266-IN	50.7	438	380	5%	-30%	12%	191	215	1.8 x	23	26	14.4 x	12.05	4.2 x
64	FIRST TRACTOR CO	38-HK	0.9	336	814	42%	-49%	35%	1,596	-	-	156	-	-	0.90	1.0 x
65	MAYVILLE ENGR CO INC	MEC	19.1	392	564	2%	-49%	33%	588	633	0.9 x	66	74	7.6 x	11.44	1.7 x
66	HYLIION HOLDINGS CORP	HYLN	2.2	386	251	17%	-77%	173%	1	0	#DIV/0!	(128)	(68)	-	1.60	1.4 x
67	TYM CORPORATION	002900-KR	2.5	114	264	98%	-22%	-38%	-	-	-	-	-	-	6.70	0.4 x
68	EMAK	EM-IT	1.1	180	435	22%	-15%	-9%	617	681	0.6 x	74	86	5.1 x	1.91	0.6 x
69	ISEKI & CO	6310-JP	6.8	156	607	31%	-9%	-10%	1,132	-	-	-	-	-	20.57	0.3 x
70	CARR'S GROUP PLC	CARR-GB	1.8	170	168	7%	-35%	40%	181	190	0.9 x	12	18	9.2 x	1.47	1.2 x
71	POWERFLEET INC	PWFL	4.5	486	257	25%	-64%	32%	134	289	0.9 x	7	55	4.7 x	1.55	2.9 x
72	MARUYAMA MFG CO	6316-JP	15.9	80	87	21%	-18%	4%	275	-	-	-	-	-	30.56	0.5 x
73	AL GHAZI TRACTORS	AGTL-PK	1.2	71	70	37%	-34%	-6%	-	-	-	-	-	-	0.41	3.0 x
74	TAKAKITA CO LTD	6325-JP	3.2	45	30	23%	-11%	10%	54	61	0.5 x	-	-	-	4.70	0.7 x

			Share Price	Mkt Cap ($ Mns)	Ent Val ($ Mns)	Price Performance			Sales			EBITDA			Book Value	
						% to High	% to Low	% YTD	FY0	FY1	EV/Sales	FY0	FY1	EV/EBITDA	Book/Share	P/Book
Peer Set																
	Animal Health	Ticker		699,626	853,928			0%	440,603	448,511	1.9 x	51,435	74,879	11.4 x		1.8 x
75	**MERCK & CO INC**	MRK	113.1	286,536	315,426	19%	-12%	4%	60,115	64,161	4.9 x	8,925	28,160	11.2 x	17.19	6.6 x
76	**ZOETIS INC**	ZTS	180.0	82,151	86,493	12%	-20%	-9%	8,544	9,164	9.4 x	3,513	3,987	21.7 x	11.07	16.3 x
77	**MARUBENI CORP**	8002-JP	19.0	31,869	46,041	6%	-29%	21%	47,425	52,687	0.9 x	2,988	3,599	12.8 x	15.00	1.3 x
78	**MUYUAN FOODS CO LT**	002714-CN	6.0	33,063	43,750	14%	-30%	9%	15,299	18,921	2.3 x	1,714	4,041	10.8 x	1.62	3.7 x
79	**I/MONGOLIA YILI IN**	600887-CN	3.5	21,889	24,461	17%	-4%	-8%	17,404	18,091	1.4 x	2,194	2,520	9.7 x	1.28	2.7 x
80	**WENS FOODSTUFF GRO**	300498-CN	2.8	18,356	22,845	13%	-19%	-2%	12,408	15,031	1.5 x	(64)	1,870	12.2 x	0.67	4.1 x
81	**TELEFONICA BRASIL SA**	VIV	8.6	14,196	16,492	33%	-7%	-21%	10,559	10,093	1.6 x	4,282	4,106	4.0 x	7.55	1.1 x
82	**HORMEL FOODS CORP**	HRL-US	32.1	17,606	19,908	30%	-11%	0%	12,110	12,144	1.6 x	1,430	1,426	14.0 x	14.39	2.2 x
83	**ALFA LAVAL AB**	ALFA-SE	44.1	18,241	19,064	7%	-31%	10%	6,023	6,560	2.9 x	1,115	1,263	15.1 x	8.69	5.1 x
84	**ALMARAI CO**	2280-SA	16.1	16,099	18,654	12%	-15%	7%	5,219	5,617	3.3 x	1,304	1,392	13.4 x	4.78	3.4 x
85	**TONGWEI CO**	600438-CN	2.5	11,294	18,193	100%	-13%	-29%	19,209	17,090	1.1 x	4,099	1,339	13.6 x	1.87	1.3 x
86	**CONAGRA BRANDS INC**	CAG-US	30.3	14,499	23,167	8%	-17%	6%	12,051	11,951	1.9 x	2,408	2,283	10.1 x	17.65	1.7 x
87	**HENAN SHUANG INVE**	000895-CN	3.2	11,058	11,484	31%	-3%	-15%	8,299	8,356	1.4 x	1,106	1,037	11.1 x	0.88	3.6 x
88	**BUNGE GLOBAL SA**	BG	105.2	14,900	18,698	11%	-18%	4%	59,540	53,703	0.3 x	3,531	2,520	7.4 x	70.61	1.5 x
89	**MOWI ASA**	MOWI-NO	16.8	8,711	11,367	18%	-8%	-6%	5,903	6,453	1.8 x	1,464	1,494	7.6 x	7.65	2.2 x
90	**EVONIK INDUSTRIES**	EVK-DE	20.3	9,462	13,668	12%	-18%	-1%	16,585	16,813	0.8 x	1,799	2,275	6.0 x	20.59	1.0 x

91	SALMAR ASA	SALM-NO	57.4	7,583	9,165	18%	-24%	3%	2,676	2,692	3.4 x	900	857	10.7 x	14.26	4.0 x
92	ELANCO ANIMAL HEALTH INC	ELAN	13.0	6,444	11,862	44%	-35%	-12%	4,417	4,464	2.7 x	979	964	12.3 x	12.26	1.1 x
93	DARLING INGREDIENTS INC	DAR	39.7	6,348	10,975	75%	-15%	-20%	6,788	5,970	1.8 x	1,612	1,245	8.8 x	28.75	1.4 x
94	NEW HOPE LIUHE CO	000876-CN	1.3	5,957	15,898	32%	-18%	2%	19,555	16,866	0.9 x	146	974	16.3 x	0.65	2.0 x
95	BALCHEM CORP	BCPC	177.5	5,757	6,017	5%	-38%	19%	922	960	6.3 x	224	247	24.3 x	34.30	5.2 x
96	NEOGEN CORP	NEOG	17.0	3,690	4,411	41%	-33%	-15%	924	935	4.7 x	213	223	19.8 x	14.51	1.2 x
97	P/F BAKKAFROST	BAKKA-NO	52.1	3,091	3,621	25%	-21%	0%	1,037	1,227	3.0 x	311	401	9.0 x	25.25	2.1 x
98	QL RESOURCES BHD	7084-MY	1.5	3,538	3,780	3%	-22%	17%	1,420	1,616	2.3 x	202	218	17.3 x	0.26	5.5 x
99	BLUESTAR ADISSEO C	600299-CN	1.5	4,153	4,317	2%	-42%	37%	1,824	2,123	2.0 x	253	402	10.7 x	0.78	2.0 x
100	CRANSWICK	CWK-GB	61.2	3,309	3,416	1%	-35%	26%	3,307	3,430	1.0 x	334	350	9.8 x	20.98	2.9 x
101	BEIJING DABEINONG	002385-CN	0.6	2,327	4,085	88%	-9%	-33%	4,608	5,058	0.8 x	(31)	264	15.5 x	0.25	2.2 x
102	FUJIAN SUNNER DEVE	002299-CN	1.9	2,317	3,443	60%	-12%	-23%	2,558	2,982	1.2 x	317	467	7.4 x	1.14	1.6 x
103	LEROY SEAFOOD GROU	LSG-NO	4.3	2,583	3,332	13%	-15%	5%	2,919	2,933	1.1 x	449	492	6.8 x	2.96	1.5 x
104	NATL AGRI DEVELOPM	6010-SA	7.7	2,315	2,035	25%	-31%	3%	852	959	2.1 x	153	184	11.0 x	3.36	2.3 x
105	SCHOUW & CO	SCHO-DK	82.5	2,063	3,001	5%	-27%	10%	5,409	5,311	0.6 x	414	431	7.0 x	66.39	1.2 x
106	GENUS	GNS-GB	23.5	1,549	1,848	34%	-21%	-15%	861	853	2.2 x	139	133	13.9 x	11.26	2.1 x
107	TWIST BIOSCIENCE CORP	TWST	55.8	3,250	3,062	9%	-74%	50%	245	311	9.9 x	(185)	(163)	-	8.39	6.6 x
108	BELL FOOD GROUP AG	BELL-CH	282.3	1,774	2,648	12%	-2%	-6%	5,178	5,406	0.5 x	388	407	6.5 x	272.55	1.0 x
109	NISSUI CORPORATION	1332-JP	6.0	1,872	3,138	11%	-24%	12%	5,316	6,058	0.5 x	336	395	7.9 x	5.50	1.1 x

110	CVS GROUP PLC	CVSG-GB	14.6	1,050	1,343	93%	-23%	-32%	747	847	1.6 x	149	163	8.3 x	4.78	3.1 x
111	DONGWON INDUSTRY	006040-KR	24.4	880	2,467	33%	-17%	-5%	6,702	-	-	571	-	-	55.55	0.4 x
112	GODREJ AGROVET LTD	540743-IN	10.2	1,954	2,164	3%	-47%	52%	1,145	1,250	1.7 x	84	104	20.9 x	1.56	6.5 x
113	VIMIAN GROUP AB	VIMIAN-SE	3.2	1,631	1,936	11%	-44%	11%	357	399	4.9 x	95	116	16.6 x	1.08	2.9 x
114	BAYWA AG	BYW6-DE	14.1	508	8,292	197%	-27%	-59%	25,954	23,336	0.4 x	655	458	18.1 x	20.91	0.7 x
115	INGHAMS GROUP LTD	ING-AU	2.5	915	2,076	19%	-28%	-9%	1,955	2,126	1.0 x	279	309	6.7 x	0.40	6.2 x
116	MARUHA NICHIRO COR	1333-JP	22.4	1,134	2,949	0%	-28%	14%	6,624	-	-	-	-	-	28.74	0.8 x
117	SHANDONG LONGDA ME	002726-CN	1.0	1,099	1,461	20%	-19%	-11%	1,840	2,185	0.7 x	(162)	70	20.8 x	0.19	5.3 x
118	ELDERS LIMITED	ELD-AU	6.2	982	1,360	5%	-45%	21%	2,119	1,971	0.7 x	143	125	10.9 x	3.45	1.8 x
119	HILTON FOOD GROUP	HFG-GB	12.0	1,076	1,548	2%	-36%	18%	5,034	5,151	0.3 x	194	207	7.5 x	4.45	2.7 x
120	COFCO JOYCOME FOOD	1610-HK	0.2	927	1,482	34%	-8%	-16%	1,607	1,751	0.8 x	123	-	-	0.28	0.7 x
121	CHINA MODERN DAIRY	1117-HK	0.1	679	2,386	27%	-11%	-8%	1,864	1,999	1.2 x	264	431	5.5 x	0.20	0.4 x
122	AUSTRALIAN AGRIC	AAC-AU	0.9	551	856	12%	-21%	-4%	224	226	3.8 x	34	33	25.7 x	1.64	0.6 x
123	CHINA YOURAN DAIRY	9858-HK	0.1	558	4,211	55%	-8%	-24%	2,587	-	-	548	-	-	0.44	0.3 x
124	FARM FRESH BHD	5306-MY	0.3	628	690	2%	-27%	17%	172	214	3.2 x	28	43	16.2 x	0.08	4.5 x
125	Z/J GUOLIAN AQUATI	300094-CN	0.4	415	584	209%	-11%	-44%	-	-	-	-	-	-	0.32	1.2 x
126	OCEANA GROUP	OCE-ZA	3.8	501	609	10%	-16%	8%	533	546	1.1 x	90	109	5.6 x	3.68	1.0 x
127	BENCHMARK HLDGS PL	BMK-GB	0.5	370	469	22%	-16%	15%	215	211	2.2 x	43	29	16.4 x	0.45	1.1 x
128	SHANDONG DELISI FO	002330-CN	0.5	335	310	75%	-10%	-33%	-	-	-	-	-	-	0.52	1.0 x

129	GFPT PCL	GFPT-TH	0.4	457	539	2%	-27%	8%	529	545	1.0 x	68	80	6.7 x	0.40	0.9 x
130	AKER BIOMARINE ASA	AKBM-NO	8.8	771	1,135	4%	-63%	94%	335	300	3.8 x	66	52	22.0 x	3.95	2.2 x
131	ASTRAL FOODS	ARL-ZA	9.5	407	400	1%	-27%	32%	1,047	1,016	0.4 x	(17)	84	4.7 x	6.26	1.5 x
132	JAPFA LTD	UD2-SG	0.2	510	2,189	11%	-48%	50%	4,429	4,368	0.5 x	251	403	5.4 x	0.39	0.6 x
133	SALMON EVOLUTION	SALME-NO	0.7	319	317	14%	-25%	3%	15	52	6.1 x	(7)	14	23.0 x	0.42	1.6 x
134	ATRIA OYJ	ATRAV-FI	10.8	205	651	11%	-8%	-6%	1,895	1,927	0.3 x	114	131	5.0 x	14.70	0.7 x
135	PHIBRO ANIMAL HEALTH CORP	PAHC	18.9	384	1,189	4%	-50%	63%	978	1,003	1.2 x	113	118	10.1 x	6.67	2.8 x
136	ANIMALCARE GROUP	ANCR-GB	3.6	219	220	2%	-44%	68%	94	94	2.3 x	17	15	14.8 x	1.66	2.2 x
137	ZOMEDICA CORP	ZOM	0.2	147	67	52%	-20%	-25%	25	-	-	-	-	-	0.24	0.6 x
138	DYADIC INTL INC DEL	DYAI	1.4	41	35	89%	-16%	-12%	3	4	9.5 x	-	-	-	0.15	9.1 x
139	APIAM ANIMAL HEALT	AHX-AU	0.2	42	108	37%	-37%	17%	124	-	-	-	-	-	0.44	0.5 x
140	FUKUTOME MEAT PACK	2291-JP	9.4	32	52	12%	-6%	-9%	162	-	-	-	-	-	4.72	2.0 x
141	JAPAN ANIMAL REFER	6039-JP	13.9	40	52	2%	-18%	26%	27	-	-	-	-	-	9.60	1.4 x
142	AQUABOUNTY TECHNOLOGIES INC	AQB	1.6	6	12	313%	-19%	-42%	2	1	15.0 x	(25)	(16)	-	26.73	0.1 x

		Share Price	Mkt Cap ($ Mns)	Ent Val ($ Mns)	Price Performance			Sales			EBITDA			Book Value	
					% to High	% to Low	% YTD	FY0	FY1	EV/Sales	FY0	FY1	EV/ EBITDA	Book/ Share	P/ Book
Peer Set															
CEA	Ticker		6,885	9,735			-12%	10,864	10,420	0.9 x	1,130	1,249	7.8 x		2.0 x
143	**SIGNIFY NV** LIGHT-NL	24.8	3,180	4,338	38%	-9%	-25%	7,282	6,835	0.6 x	846	823	5.3 x	24.39	1.0 x
144	**GIBRALTAR INDS INC** ROCK	74.3	2,263	2,151	18%	-20%	-6%	1,374	1,403	1.5 x	202	217	9.9 x	32.01	2.3 x
145	**CRESCO LABS INC** CL-CA	1.6	523	1,023	75%	-37%	17%	771	746	1.4 x	174	205	5.0 x	1.44	1.1 x
146	**SNDL INC** SNDL-US	2.3	600	566	29%	-43%	38%	671	664	0.9 x	(25)	6	92.9 x	3.40	0.7 x
147	**GROWGENERATION CORP** GRWG	2.3	140	124	64%	-23%	-8%	226	201	0.6 x	(6)	(3)	-	2.69	0.9 x
148	**VILLAGE FARMS INTL INC** VFF	1.1	126	173	43%	-52%	49%	286	318	0.5 x	8	15	11.5 x	2.69	0.4 x
149	**HYDROFARM HLDGS GRP INC** HYFM	0.6	29	973	158%	-18%	-31%	227	197	5.0 x	0	3	312.5 x	(11.10)	-0.1 x
150	**LOCAL BOUNTI CORP** LOCL	2.7	23	388	133%	-57%	31%	28	56	6.9 x	(69)	(17)	-	(1.12)	-2.4 x

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						% to High	% to Low	% YTD	FY0	FY1	EV/Sales	FY0	FY1	EV/EBITDA	Book/Share	P/Book
Peer Set																
Seeds		Ticker		4,161	7,010			-17%	6,099	6,162	1.1 x	598	667	10.5 x		1.5 x
151	**SHANDONG DENGHAI S**	**002041-CN**	1.2	1,028	671	103%	-8%	-37%	214	240	2.8 x	40	49	13.8 x	0.57	2.1 x
152	**SAKATA SEED CORP**	**1377-JP**	23.2	1,075	865	31%	-10%	-10%	562	646	1.3 x	95	111	7.8 x	24.26	1.0 x
153	**TRES TENTOS AGROIN**	**TTEN3-BR**	1.9	941	1,009	58%	-8%	-24%	1,802	1,813	0.6 x	102	134	7.5 x	1.22	1.5 x
154	**CENTRAL GARDEN & PET CO**	**CENT**	39.8	441	3,744	30%	-9%	-20%	3,310	3,244	1.2 x	336	343	10.9 x	22.44	1.8 x
155	**KAVERI SEED COMPAN**	**532899-IN**	12.8	658	645	8%	-49%	74%	138	150	4.3 x	34	37	17.6 x	3.59	3.6 x
156	**S&W SEED CO**	**SANW**	0.4	18	77	208%	-41%	-42%	74	69	1.1 x	(9)	(7)	-	1.18	0.3 x

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						% to High	% to Low	% YTD	FY0	FY1	EV/Sales	FY0	FY1	EV/EBITDA	Book/Share	P/Book
Peer Set																
	Crop Protection	Ticker		115,190	134,553			5%	60,268	62,832	2.1 x	9,606	10,452	12.9 x		2.0 x
157	**CORTEVA INC**	CTVA	56.1	39,100	41,626	5%	-23%	18%	17,230	17,297	2.4 x	3,380	3,488	11.9 x	36.30	1.5 x
158	**RENTOKIL INITIAL**	RTO-GB	6.1	15,393	19,275	30%	-23%	9%	6,874	6,944	2.8 x	1,525	1,561	12.3 x	2.13	2.9 x
159	**FMC CORP**	FMC	58.4	7,284	11,373	61%	-15%	-7%	4,487	4,389	2.6 x	978	915	12.4 x	36.53	1.6 x
160	**PI INDUSTRIES**	523642-IN	52.9	8,026	7,574	1%	-30%	25%	920	1,051	7.2 x	242	271	28.0 x	6.87	7.7 x
161	**UPL LIMITED**	512070-IN	6.8	5,129	8,864	12%	-21%	-3%	5,218	5,488	1.6 x	641	993	8.9 x	3.95	1.7 x
162	**BAYER CROPSCIENCE**	506285-IN	83.1	3,736	3,596	2%	-34%	25%	613	677	5.3 x	116	132	27.2 x	7.57	11.0 x
163	**SICHUAN HEBANG BIO**	603077-CN	0.2	2,102	2,234	53%	-6%	-26%	-	-	-	-	-	-	0.31	0.8 x
164	**JIANGSU YANGNONG C**	600486-CN	7.6	3,097	3,060	33%	-20%	-14%	1,590	1,955	1.6 x	361	338	9.0 x	3.47	2.2 x
165	**SUMITOMO CHEMICAL**	542920-IN	6.2	3,095	2,977	5%	-35%	28%	342	399	7.5 x	57	78	38.2 x	0.58	10.6 x
166	**TESSENDERLO GROUP**	TESB-BE	26.7	2,280	1,745	27%	-11%	15%	3,169	3,143	0.6 x	345	348	5.0 x	33.47	0.8 x
167	**ATUL LTD**	500027-IN	95.2	2,802	2,780	1%	-35%	11%	566	648	4.3 x	76	107	25.9 x	20.73	4.6 x
168	**SHANDONG WEIFANG R**	301035-CN	5.4	1,515	2,066	113%	-8%	-45%	1,585	1,963	1.1 x	174	-	-	3.37	1.6 x
169	**KWS SAAT SE & CO.**	KWS-DE	69.5	2,293	2,934	2%	-29%	17%	1,913	1,866	1.6 x	321	518	5.7 x	47.81	1.5 x
170	**ANHUI GUANGXIN AGR**	603599-CN	1.6	1,421	413	83%	-5%	-24%	810	959	0.4 x	242	232	1.8 x	1.48	1.1 x
171	**NUFARM LTD**	NUF-AU	3.0	1,163	2,111	30%	-11%	-15%	2,272	2,175	1.0 x	286	236	8.9 x	3.56	0.9 x

172	ZHEJIANG XINAN CHE	600596-CN	1.1	1,230	1,745	50%	-16%	-17%	2,019	2,468	0.7 x	119	-	-	1.31	0.8 x
173	CORBION N.V.	CRBN-NL	22.4	1,324	2,086	11%	-31%	5%	1,563	1,444	1.4 x	207	181	11.5 x	11.65	1.9 x
174	LIER CHEMICAL CO	002258-CN	1.1	848	1,427	89%	-7%	-37%	1,086	1,014	1.4 x	188	240	6.0 x	1.30	0.8 x
175	LIANHE CHEMICAL TE	002250-CN	0.7	640	1,312	108%	-9%	-31%	889	935	1.4 x	50	162	8.1 x	0.96	0.7 x
176	BIOCERES CROP SOLUTIONS CORP	BIOX	11.1	697	939	27%	-13%	-19%	420	475	2.0 x	81	86	11.0 x	5.02	2.2 x
177	NANTONG JIANGSHAN	600389-CN	1.8	765	642	96%	-13%	-25%	702	871	0.7 x	74	101	6.4 x	1.19	1.5 x
178	SICHUAN GUOGUANG A	002749-CN	2.1	977	809	28%	-34%	24%	257	296	2.7 x	59	68	11.9 x	0.55	3.8 x
179	HEXTAR GLOBAL BHD	5151-MY	0.2	755	813	8%	-22%	15%	140	166	4.9 x	27	30	27.0 x	0.01	14.9 x
180	SHENZHEN NOPOSION	002215-CN	1.0	761	1,511	45%	-18%	-18%	569	650	2.3 x	83	151	10.0 x	0.58	1.7 x
181	KUMIAI CHEM IND CO	4996-JP	5.3	703	984	51%	-15%	2%	1,136	1,117	0.9 x	147	112	8.8 x	7.92	0.7 x
182	BSM CHEMICAL CO LT	300796-CN	1.5	555	599	63%	-19%	-32%	97	234	2.6 x	22	41	14.5 x	0.65	2.4 x
183	DHANUKA AGRITECH	507717-IN	20.7	944	936	11%	-56%	64%	211	250	3.7 x	40	47	19.9 x	3.29	6.3 x
184	HAILIR PESTICIDESA	603639-CN	1.5	526	598	65%	-3%	-30%	607	646	0.9 x	-	-	-	1.43	1.1 x
185	ANHUI HUILONG AGRI	002556-CN	0.6	600	1,266	68%	-17%	-20%	-	-	-	-	-	-	0.57	1.1 x
186	CHUNBO CO LTD	278280-KR	45.0	450	757	211%	-21%	-47%	140	144	5.3 x	11	(0)	-	19.97	2.3 x
187	RALLIS INDIA LTD	500355-IN	4.0	769	751	12%	-38%	32%	318	349	2.2 x	37	41	18.3 x	1.12	3.5 x
188	INDIA PESTICIDES	543311-IN	2.7	311	300	92%	-15%	-38%	-	-	-	-	-	-	0.86	3.2 x
189	CARIBOU BIOSCIENCES INC	CRBU	2.3	210	(57)	259%	-35%	-60%	34	12	-4.7 x	(113)	(175)	-	3.80	0.6 x
190	JIANGSU CHANGQING	002391-CN	0.6	400	738	63%	-6%	-31%	499	-	-	66	-	-	0.97	0.6 x

191	NIHON NOHYAKU CO	4997-JP	4.9	399	521	13%	-20%	11%	661	-	-	-	-	-	6.61	0.7 x
192	PRECIGEN INC	PGEN	1.5	384	342	27%	-45%	13%	6	5	68.1 x	(100)	(108)	-	0.39	3.9 x
193	LIMIN GROUP CO LTD	002734-CN	0.9	342	628	39%	-25%	-17%	583	699	0.9 x	67	79	7.9 x	1.04	0.9 x
194	AMERICAN VANGUARD CORP	AVD	9.6	269	475	87%	-17%	-12%	579	597	0.8 x	54	57	8.4 x	12.88	0.7 x
195	JIANGSU FLAG CHEMI	300575-CN	0.8	278	483	89%	-17%	-23%	331	383	1.3 x	60	65	7.4 x	0.64	1.3 x
196	CHEERWIN GRP LTD	6601-HK	0.2	307	(80)	8%	-30%	22%	224	-	-	29	-	-	0.31	0.7 x
197	ASTEC LIFESCIENCES	533138-IN	14.4	282	341	25%	-31%	9%	-	76	4.5 x	-	10	34.5 x	2.25	6.4 x
198	INSECTICIDES INDIA	532851-IN	9.5	282	285	11%	-43%	17%	236	265	1.1 x	20	24	11.8 x	4.09	2.3 x
199	HOKKO CHEMICAL IND	4992-JP	11.3	338	310	0%	-48%	64%	310	321	1.0 x	-	-	-	13.48	0.8 x
200	OAT AGRIO CO LTD	4979-JP	12.3	136	185	15%	-25%	8%	192	-	-	-	-	-	9.52	1.3 x
201	FUMAKILLA LTD	4998-JP	7.8	128	185	13%	-12%	-4%	436	519	0.4 x	26	33	5.6 x	9.35	0.8 x
202	AGRO-KANESHO CO	4955-JP	7.9	106	57	44%	-12%	-19%	104	-	-	-	-	-	10.97	0.7 x
203	PLANT HEALTH CARE	PHC-GB	0.1	39	38	17%	-64%	141%	11	15	2.5 x	(3)	(1)	-	0.03	3.8 x

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						% to High	% to Low	% YTD	FY0	FY1	EV/Sales	FY0	FY1	EV/EBITDA	Book/Share	P/Book
Peer Set																
	Fertilizers	Ticker		293,345	382,751			-6%	297,221	290,076	1.3 x	44,797	46,322	8.3 x		1.5 x
204	**BASF SE**	**BAS-DE**	46.6	41,688	62,546	28%	-9%	-13%	74,562	72,895	0.9 x	8,301	8,856	7.1 x	42.84	1.1 x
205	**DUPONT DE NEMOURS INC**	**DD**	83.7	34,995	41,261	2%	-27%	9%	12,068	12,420	3.3 x	2,942	3,082	13.4 x	55.90	1.5 x
206	**NUTRIEN LTD**	**NTR-CA**	51.3	25,354	38,339	35%	-9%	-9%	28,082	26,458	1.4 x	6,058	5,496	7.0 x	49.42	1.0 x
207	**INDUSTRIES OF QATA**	**IQCD-QA**	3.6	21,751	18,696	10%	-14%	1%	3,225	3,175	5.9 x	1,112	1,167	16.0 x	1.66	2.2 x
208	**SABIC AGRI-NUTRIEN**	**2020-SA**	31.3	14,921	12,385	21%	-10%	-15%	2,942	2,619	4.7 x	1,229	1,007	12.3 x	9.82	3.2 x
209	**CF INDS HLDGS INC**	**CF**	76.4	13,963	18,082	15%	-10%	-4%	6,631	5,738	3.2 x	2,760	2,173	8.3 x	29.51	2.6 x
210	**QINGHAI SALT LAKE**	**000792-CN**	2.2	11,682	9,726	31%	-15%	-2%	2,986	2,280	4.3 x	1,425	1,061	9.2 x	0.84	2.6 x
211	**MOSAIC CO NEW**	**MOS**	29.8	9,568	14,103	44%	-12%	-17%	13,696	12,142	1.2 x	2,737	2,346	6.0 x	37.40	0.8 x
212	**EASTMAN CHEM CO**	**EMN**	103.3	12,075	16,721	3%	-33%	15%	9,210	9,350	1.8 x	1,591	1,800	9.3 x	48.17	2.1 x
213	**YARA INTERNATIONAL**	**YAR-NO**	28.4	7,245	11,131	45%	-7%	-20%	15,547	14,273	0.8 x	1,695	1,955	5.7 x	27.75	1.0 x
214	**S/DONG HUALU-HENG**	**600426-CN**	3.4	7,301	8,440	40%	-6%	-11%	3,772	4,782	1.8 x	906	1,081	7.8 x	1.96	1.8 x
215	**FERTIGLOBE PLC**	**FERTIGLOBE-AE**	0.7	5,605	6,888	50%	-10%	-17%	2,416	2,288	3.0 x	996	855	8.1 x	0.16	4.1 x
216	**OCI N.V.**	**OCI-NL**	24.1	5,089	8,527	25%	-20%	-17%	5,022	4,891	1.7 x	1,169	475	18.0 x	4.41	5.5 x
217	**MITSUI CHEMICALS**	**4183-JP**	29.1	5,843	10,126	7%	-19%	4%	11,265	12,913	0.8 x	1,102	1,485	6.8 x	30.94	0.9 x
218	**SOCIEDAD QUIMICA Y MINERA DE**	**SQM**	38.1	5,436	7,695	92%	-15%	-37%	7,468	4,991	1.5 x	3,234	1,933	4.0 x	16.29	2.3 x

219	ICL GROUP LTD	ICL-IL	4.2	5,444	7,703	58%	-9%	-17%	7,536	7,015	1.1 x	1,754	1,392	5.5 x	4.35	1.0 x
220	NISSAN CHEMICAL CO	4021-JP	32.4	4,496	4,628	43%	-15%	-17%	1,450	1,643	2.8 x	401	469	9.9 x	10.91	3.0 x
221	YUNNAN YUNTIANHUA	600096-CN	2.7	4,972	7,000	13%	-27%	24%	9,566	9,746	0.7 x	1,316	1,423	4.9 x	1.54	1.8 x
222	SUMITOMO CHEM CO	4005-JP	2.6	4,282	14,750	15%	-24%	7%	15,753	18,103	0.8 x	(2,133)	1,473	10.0 x	4.16	0.6 x
223	ABOU KIR FERTILIZE	ABUK-EG	1.3	1,610	1,056	175%	-14%	-53%	698	413	2.6 x	378	187	5.7 x	0.33	3.9 x
224	COROMANDEL INTL	506395-IN	19.9	5,851	5,495	2%	-38%	32%	2,648	2,744	2.0 x	288	316	17.4 x	3.82	5.2 x
225	INCITEC PIVOT	IPL-AU	1.9	3,741	4,114	7%	-11%	-1%	3,832	3,529	1.2 x	775	580	7.1 x	1.80	1.1 x
226	SCOTTS MIRACLE-GRO CO	SMG	78.6	4,464	7,517	4%	-44%	23%	3,551	3,542	2.1 x	428	526	14.3 x	(4.42)	-17.8 x
227	TATA CHEMICALS	500770-IN	13.4	3,405	4,025	22%	-16%	1%	1,847	1,829	2.2 x	341	291	13.9 x	10.43	1.3 x
228	K+S AG	SDF-DE	12.9	2,312	2,046	58%	-5%	-18%	4,216	3,933	0.5 x	780	616	3.3 x	39.32	0.3 x
229	SICHUAN NEW ENERGY	000155-CN	1.4	2,575	3,181	46%	-16%	-26%	457	530	6.0 x	304	335	9.5 x	0.73	1.9 x
230	CHAMBAL FERTILISER	500085-IN	6.2	2,480	2,455	11%	-51%	44%	2,151	2,228	1.1 x	245	297	8.3 x	2.17	2.9 x
231	YONFER AGRIC TECH	000902-CN	1.5	1,941	2,143	18%	-17%	-4%	2,086	2,196	1.0 x	283	370	5.8 x	1.06	1.5 x
232	ANDERSONS INC	ANDE	54.5	1,857	2,394	13%	-17%	-5%	14,750	12,118	0.2 x	405	335	7.2 x	37.59	1.5 x
233	GUJARAT STATE FER	500690-IN	2.9	1,171	896	32%	-40%	1%	-	1,202	0.7 x	-	97	9.3 x	3.70	0.8 x
234	E.I.D.-PARRY(INDIA	500125-IN	9.8	1,739	2,019	5%	-45%	46%	354	391	5.2 x	315	401	5.0 x	4.75	2.1 x
235	HUBEI YIHUA CHEM	000422-CN	1.6	1,752	2,793	18%	-40%	10%	2,355	2,552	1.1 x	264	373	7.5 x	0.93	1.7 x
236	CHENGDU WINTRUE HO	002539-CN	0.9	1,146	1,990	39%	-10%	-18%	3,008	3,134	0.6 x	268	407	4.9 x	0.98	1.0 x
237	SICHUAN DEV LOMON	002312-CN	1.0	1,313	2,212	28%	-30%	-2%	1,064	1,175	1.9 x	132	175	12.7 x	0.67	1.4 x

238	DEEPAK FERTILISERS	500645-IN	11.1	1,400	1,827	9%	-51%	36%	1,041	1,140	1.6 x	154	207	8.8 x	4.91	2.3 x
239	COMPASS MINERALS INTL INC	CMP	13.3	550	1,387	199%	-27%	-47%	1,205	1,128	1.2 x	201	177	7.8 x	9.38	1.4 x
240	PARADEEP PHOSPHATE	543530-IN	1.1	894	1,361	7%	-36%	35%	1,386	1,344	1.0 x	78	118	11.5 x	0.50	2.2 x
241	SINOFERT HOLDINGS	297-HK	0.1	872	561	17%	-24%	7%	3,010	-	-	-	-	-	0.19	0.6 x
242	CVR PARTNERS LP	UAN	78.4	828	1,322	17%	-23%	20%	-	-	-	-	-	-	28.73	2.7 x
243	PETROVIETNAM CA MA	DCM-VN	1.5	778	404	12%	-29%	10%	511	524	0.8 x	78	64	6.3 x	0.73	2.0 x
244	ADVANSIX INC	ASIX	28.0	750	1,058	46%	-25%	-6%	1,534	1,562	0.7 x	154	146	7.2 x	27.95	1.0 x
245	ANHUI SIERTE FERTI	002538-CN	0.6	548	442	52%	-13%	-25%	-	-	-	-	-	-	0.86	0.7 x
246	ENGRO CORP LTD	ENGRO-PK	1.2	639	1,113	17%	-35%	13%	-	-	-	-	-	-	1.01	1.2 x
247	GRUPA AZOTY SA	ATT-PL	4.5	451	2,618	46%	-7%	-28%	3,362	3,690	0.7 x	(444)	72	36.2 x	14.44	0.3 x
248	ENGRO FERTILIZER L	EFERT-PK	0.6	804	759	6%	-59%	51%	800	927	0.8 x	-	-	-	0.13	4.7 x
249	OMNIA HLDGS	OMN-ZA	3.6	596	477	9%	-24%	4%	1,184	1,249	0.4 x	123	137	3.5 x	3.73	1.0 x
250	LSB INDS INC	LXU	9.1	652	971	23%	-26%	-2%	594	526	1.8 x	133	129	7.5 x	7.29	1.2 x
251	PETROVIETNAM FERT	DPM-VN	1.4	547	276	26%	-17%	2%	551	543	0.5 x	32	50	5.6 x	1.19	1.2 x
252	FAUJI FERTILIZER	FFC-PK	0.6	824	572	6%	-53%	61%	570	928	0.6 x	-	-	-	0.44	1.5 x
253	CHINA XLX FERTILSE	1866-HK	0.5	557	2,480	20%	-20%	-2%	3,268	3,338	0.7 x	505	-	-	0.90	0.5 x
254	CHINA BLUECHEMICAL	3983-HK	0.2	448	(267)	40%	-10%	-1%	1,797	1,833	-0.1 x	273	271	-1.0 x	0.56	0.4 x
255	KUNMING CHUAN JIN	300505-CN	1.7	458	466	68%	-36%	-30%	-	-	-	-	-	-	1.22	1.4 x
256	FATIMA FERTILIZER	FATIMA-PK	0.2	407	375	3%	-56%	53%	842	944	0.4 x	-	-	-	0.22	0.9 x

257	INTREPID POTASH INC	IPI	26.1	346	302	8%	-33%	9%	241	209	1.4 x	41	34	8.8 x	52.97	0.5 x
258	MANGALORE CHEMICAL	530011-IN	1.6	194	279	15%	-31%	12%	457	382	0.7 x	45	44	6.4 x	0.91	1.8 x
259	ITAFOS INC	IFOS-CA	1.0	200	247	17%	-25%	5%	466	462	0.5 x	132	132	1.9 x	1.46	0.7 x
260	FAUJI FERTILIZER B	FFBL-PK	0.2	196	100	5%	-73%	34%	690	744	0.1 x	-	-	-	0.13	1.1 x
261	VALUENCE HOLDINGS	9270-JP	6.7	91	167	220%	-37%	-31%	509	570	0.3 x	-	-	-	4.06	1.6 x
262	KATAKURA & CO-OP A	4031-JP	7.6	77	133	14%	-16%	15%	265	-	-	-	-	-	17.43	0.4 x
263	BINH DIEN FERTILIZ	BFC-VN	1.9	109	168	4%	-62%	88%	-	-	-	-	-	-	0.79	2.4 x
264	VERDE AGRITECH LTD	NPK-CA	0.6	33	64	354%	-27%	-48%	28	-	-	1	-	-	0.58	1.1 x
265	NEOHIM AD	NEOH-BG	11.4	30	9	53%	-16%	-15%	-	-	-	-	-	-	31.17	0.4 x

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Peer Set																
	Food Processing	Ticker		709,632	876,986			4%	457,604	465,006	1.9 x	68,846	73,341	12.0 x		2.3 x
266	**NESTLE SA**	**NESN-CH**	101.3	265,319	314,943	21%	-4%	-11%	105,440	109,442	2.9 x	21,862	22,985	13.7 x	14.52	7.0 x
267	**UNILEVER PLC**	**ULVR-GB**	61.3	153,004	180,603	2%	-25%	27%	64,146	66,651	2.7 x	12,422	13,664	13.2 x	8.86	6.9 x
268	**ECOLAB INC**	**ECL**	230.7	65,878	73,275	8%	-32%	17%	15,320	15,864	4.6 x	3,044	3,565	20.6 x	29.13	7.9 x
269	**DANONE**	**BN-FR**	65.1	44,238	52,933	6%	-18%	6%	29,858	29,885	1.8 x	4,910	5,094	10.4 x	28.15	2.3 x
270	**BALL CORP**	**BALL**	63.8	19,377	24,017	12%	-33%	11%	14,029	12,036	2.0 x	2,110	1,964	12.2 x	22.59	2.8 x
271	**AVERY DENNISON CORP**	**AVY**	216.8	17,459	20,489	8%	-24%	7%	8,364	8,790	2.3 x	1,255	1,442	14.2 x	28.39	7.6 x
272	**PACKAGING CORP AMER**	**PKG**	199.9	17,948	19,926	1%	-28%	23%	7,802	8,251	2.4 x	1,604	1,623	12.3 x	44.89	4.5 x
273	**LAMB WESTON HLDGS INC**	**LW**	60.0	8,623	12,441	86%	-12%	-44%	6,468	6,618	1.9 x	1,417	1,403	8.9 x	12.44	4.8 x
274	**INTERNATIONAL PAPER CO**	**IP**	46.5	16,146	23,235	2%	-32%	29%	18,916	18,929	1.2 x	2,233	2,049	11.3 x	24.75	1.9 x
275	**WESTROCK CO**	**WRK**	51.5	13,284	22,500	6%	-39%	24%	20,310	19,606	1.1 x	3,128	2,710	8.3 x	39.00	1.3 x
276	**WH GROUP LTD**	**288-HK**	0.7	8,343	11,015	16%	-24%	1%	26,236	26,113	0.4 x	1,987	2,780	4.0 x	0.77	0.8 x
277	**INGREDION INC**	**INGR**	124.4	8,165	9,603	5%	-28%	15%	8,160	7,766	1.2 x	1,192	1,210	7.9 x	57.59	2.2 x
278	**PILGRIMS PRIDE CORP**	**PPC**	41.2	9,769	12,515	10%	-46%	49%	17,362	17,938	0.7 x	1,025	1,956	6.4 x	15.75	2.6 x
279	**SPROUTS FMRS MKT INC**	**SFM**	99.9	10,002	11,401	4%	-63%	108%	6,837	7,491	1.5 x	528	593	19.2 x	12.67	7.9 x

	Company	Ticker															
280	SEALED AIR CORP NEW	SEE	38.1	5,541	9,939	20%	-25%	4%	5,489	5,391	1.8 x	1,107	1,106	9.0 x	4.11	9.3 x
281	SILGAN HLDGS INC	SLGN	51.4	5,491	9,063	3%	-26%	14%	5,988	5,931	1.5 x	871	912	9.9 x	17.79	2.9 x
282	EXPONENT INC	EXPO	106.1	5,375	5,240	3%	-39%	20%	497	516	10.1 x	151	159	32.9 x	7.75	13.7 x
283	SCG PACKAGING PCL	SCGP-TH	0.8	3,402	4,945	51%	-9%	-25%	3,625	3,940	1.3 x	488	549	9.0 x	0.52	1.5 x
284	NH FOODS LTD	2282-JP	33.1	3,405	4,420	10%	-15%	-2%	8,362	9,261	0.5 x	486	594	7.4 x	34.80	1.0 x
285	CJ CHEILJEDANG	097950-KR	280.7	4,226	14,818	5%	-29%	14%	21,852	21,813	0.7 x	2,116	2,217	6.7 x	337.16	0.8 x
286	JOHN BEAN TECHNOLOGIES CORP	JBT	98.4	3,132	3,303	15%	-11%	-1%	1,664	1,728	1.9 x	273	299	11.1 x	47.67	2.1 x
287	SUEDZUCKER AG	SZU-DE	13.2	2,691	6,156	33%	-4%	-16%	11,184	11,183	0.6 x	1,433	977	6.3 x	15.79	0.8 x
288	ASIA-POTASH INTERN	000893-CN	2.1	1,992	2,327	98%	-13%	-41%	538	572	4.1 x	261	235	9.9 x	1.71	1.3 x
289	CAL MAINE FOODS INC	CALM	71.6	3,166	2,812	2%	-41%	25%	2,326	2,274	1.2 x	391	453	6.2 x	36.71	1.9 x
290	SAO MARTINHO SA	SMTO3-BR	5.1	1,820	2,986	66%	-8%	-15%	1,317	1,350	2.2 x	589	683	4.4 x	3.51	1.5 x
291	MGP INGREDIENTS INC NEW	MGPI	81.6	1,795	2,082	53%	-16%	-17%	837	755	2.8 x	203	218	9.5 x	40.68	2.0 x
292	HAWKINS INC	HWKN	103.9	2,181	2,255	19%	-53%	48%	919	989	2.3 x	143	163	13.9 x	20.32	5.1 x
293	BALRAMPUR CHINI MI	500038-IN	5.7	1,159	1,399	3%	-28%	16%	671	701	2.0 x	94	102	13.8 x	2.01	2.9 x
294	UNITED NAT FOODS INC	UNFI	15.5	922	4,509	37%	-45%	-4%	30,272	30,757	0.1 x	640	488	9.2 x	28.25	0.5 x
295	MITSUI DM SUGAR HO	2109-JP	22.0	718	868	6%	-14%	6%	1,099	-	-	-	-	-	23.38	0.9 x
296	CALAVO GROWERS INC	CVGW	23.8	423	491	62%	-12%	-19%	972	643	0.8 x	31	41	11.9 x	11.57	2.1 x
297	JALLES MACHADO SA	JALL3-BR	1.2	376	942	55%	-10%	-23%	352	412	2.3 x	234	270	3.5 x	1.22	1.0 x
298	ROGERS SUGAR INC	RSI-CA	4.2	532	809	5%	-13%	2%	815	891	0.9 x	82	97	8.3 x	2.39	1.7 x

299	ORIGIN ENTERPRISES	OIZ-IE	3.4	361	668	18%	-12%	-11%	2,600	2,263	0.3 x	120	115	5.8 x	3.72	0.9 x
300	BONDUELLE	BON-FR	6.9	226	987	87%	-7%	-42%	2,528	2,613	0.4 x	156	167	5.9 x	26.17	0.3 x
301	NATURAL GROCERS BY VITAMIN C	NGVC	27.3	622	978	1%	-57%	71%	1,141	1,231	0.8 x	61	70	14.0 x	7.03	3.9 x
302	RANPAK HOLDINGS CORP	PACK	7.2	578	970	25%	-64%	24%	349	366	2.7 x	77	86	11.3 x	6.80	1.1 x
303	KHON KAEN SUGAR IN	KSL-TH	0.0	210	790	108%	-4%	-38%	533	451	1.8 x	82	88	9.0 x	0.14	0.3 x
304	SELECT HARVESTS	SHV-AU	2.8	340	650	7%	-35%	42%	136	163	4.0 x	(62)	34	18.8 x	2.22	1.3 x
305	BBB FOODS INC	TBBB	27.2	1,051	3,257	6%	-31%	NM	2,566	2,981	1.1 x	110	158	20.7 x	1.65	16.5 x
306	SCALES CORP LT	SCL-NZ	2.1	300	329	6%	-21%	-4%	350	334	1.0 x	42	52	6.4 x	1.57	1.3 x
307	BENSON HILL INC	BHIL	6.6	40	98	637%	-33%	8%	473	118	0.8 x	(48)	(28)	-	11.11	0.6 x

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						% to High	% to Low	% YTD	FY0	FY1	EV/Sales	FY0	FY1	EV/ EBITDA	Book/ Share	P/ Book
Peer Set																
	AgriFinance	Ticker		14,047	18,699			-1%	8,470	8,447	2.2 x	1,350	1,290	14.5 x		0.9 x
308	**KUALA LUMPUR KEPG**	**2445-MY**	4.6	5,042	7,131	13%	-8%	-3%	5,055	5,485	1.3 x	584	654	10.9 x	2.92	1.6 x
309	**HEILONGJIANG AGRI**	**600598-CN**	1.8	3,215	2,027	12%	-16%	7%	698	751	2.7 x	182	186	10.9 x	0.63	2.9 x
310	**SIMMONS 1ST NATL CORP**	**SFNC**	21.5	2,702	3,691	4%	-38%	9%	826	813	4.5 x	-	-	-	27.42	0.8 x
311	**SLC AGRICOLA SA**	**SLCE3-BR**	3.2	1,409	2,593	47%	-6%	-18%	1,756	1,274	2.0 x	510	379	6.9 x	1.95	1.6 x
312	**BRASILAGRO**	**AGRO3-BR**	4.7	479	626	30%	-7%	-13%	232	-	-	104	-	-	3.48	1.3 x
313	**GLADSTONE LD CORP**	**LAND**	14.9	532	1,094	15%	-17%	3%	90	85	12.9 x	74	71	15.4 x	20.18	0.7 x
314	**TEJON RANCH CO**	**TRC**	19.0	509	511	4%	-22%	10%	45	40	12.8 x	-	-	-	17.50	1.1 x
315	**GREAT AJAX CORP**	**AJX**	3.5	160	1,026	96%	-11%	-34%	15	-	-	-	-	-	5.56	0.6 x

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						% to High	% to Low	% YTD	FY0	FY1	EV/Sales	FY0	FY1	EV/EBITDA	Book/Share	P/Book
Peer Set																
	Food Producers	Ticker		54,460	63,732			7%	36,605	38,647	1.6 x	4,916	5,671	11.2 x		1.3 x
316	TATA CONSUMER PROD	500800-IN	14.2	14,046	13,953	7%	-30%	10%	1,854	2,128	6.6 x	278	335	41.7 x	1.99	7.1 x
317	SD GUTHRIE BERHAD	5285-MY	1.0	6,728	8,402	3%	-10%	0%	3,825	4,179	2.0 x	707	841	10.0 x	0.56	1.8 x
318	TREASURY WINE ESTA	TWE-AU	8.1	6,544	7,656	7%	-18%	10%	1,573	1,791	4.3 x	462	530	14.4 x	3.81	2.1 x
319	IOI CORP	1961-MY	0.8	5,226	5,600	10%	-6%	-2%	2,492	2,365	2.4 x	422	405	13.8 x	0.40	2.1 x
320	PPB GROUP BERHAD	4065-MY	3.2	4,589	4,579	15%	-8%	2%	1,243	1,287	3.6 x	63	104	44.0 x	4.25	0.8 x
321	GOLDEN AGRI RESOUR	E5H-SG	0.2	2,639	4,719	3%	-14%	6%	9,756	10,166	0.5 x	1,032	1,318	3.6 x	0.38	0.5 x
322	FIRST RESOURCES LT	EB5-SG	1.1	1,753	1,899	8%	-11%	3%	981	1,039	1.8 x	274	348	5.5 x	0.82	1.3 x
323	UTD PLANT BERHAD	2089-MY	5.7	2,374	2,210	3%	-41%	48%	422	-	-	212	-	-	1.41	4.0 x
324	GENTING PLANTATION	2291-MY	1.2	1,113	1,385	10%	-12%	0%	611	666	2.1 x	150	156	8.9 x	1.28	1.0 x
325	FRESH DEL MONTE PRODUCE INC	FDP	25.1	1,200	1,761	14%	-15%	-5%	4,321	4,268	0.4 x	250	245	7.2 x	40.77	0.6 x
326	FGV HOLDINGS BHD	5222-MY	0.3	1,024	1,877	20%	-12%	-7%	4,111	4,692	0.4 x	236	244	7.7 x	0.35	0.8 x
327	ADECOAGRO S A	AGRO	9.7	1,006	2,060	30%	-10%	-13%	1,442	1,500	1.4 x	470	501	4.1 x	13.24	0.7 x
328	ASTRA AGRO LESTARI	AALI-ID	0.4	713	809	38%	-14%	-19%	1,369	1,349	0.6 x	155	153	5.3 x	0.71	0.5 x
329	BUMITAMA AGRI LTD	P8Z-SG	0.5	933	1,195	10%	-25%	17%	943	897	1.3 x	276	235	5.1 x	0.49	1.1 x
330	SAWIT SUMBERMAS SA	SSMS-ID	0.1	633	1,045	30%	-12%	-2%	-	-	-	-	-	-	0.01	5.0 x
331	MISSION PRODUCE INC	AVO	11.2	797	1,046	16%	-27%	11%	954	1,022	1.0 x	48	66	15.8 x	7.24	1.6 x

332	VITAL FARMS INC	VITL	36.5	1,539	1,419	33%	-72%	133%	472	586	2.4 x	48	75	18.8 x	5.08	7.2 x
333	HOKUTO CORP	1379-JP	12.7	425	514	4%	-12%	9%	509	-	-	-	-	-	11.49	1.1 x
334	LIMONEIRA CO	LMNR	22.0	397	481	5%	-37%	7%	180	187	2.6 x	(1)	21	22.5 x	9.90	2.2 x
335	TSH RESOURCES BHD	9059-MY	0.3	361	419	4%	-24%	23%	223	251	1.7 x	59	63	6.6 x	0.33	0.8 x
336	ALICO INC	ALCO	29.5	225	308	5%	-21%	1%	40	50	6.1 x	(16)	2	133.7 x	35.35	0.8 x
337	AUGA GROUP AB	AUG1L-LT	0.3	66	198	52%	-9%	-17%	88	95	2.1 x	2	22	8.8 x	0.28	1.0 x
338	SEEKA LTD	SEK-NZ	1.4	60	198	29%	-6%	-14%	183	-	-	14	-	-	3.70	0.4 x
339	BORGES AGRICULTURA	BAIN-ES	3.1	71	-	4%	-16%	7%	127	131	-	0	6	-	-	-

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