

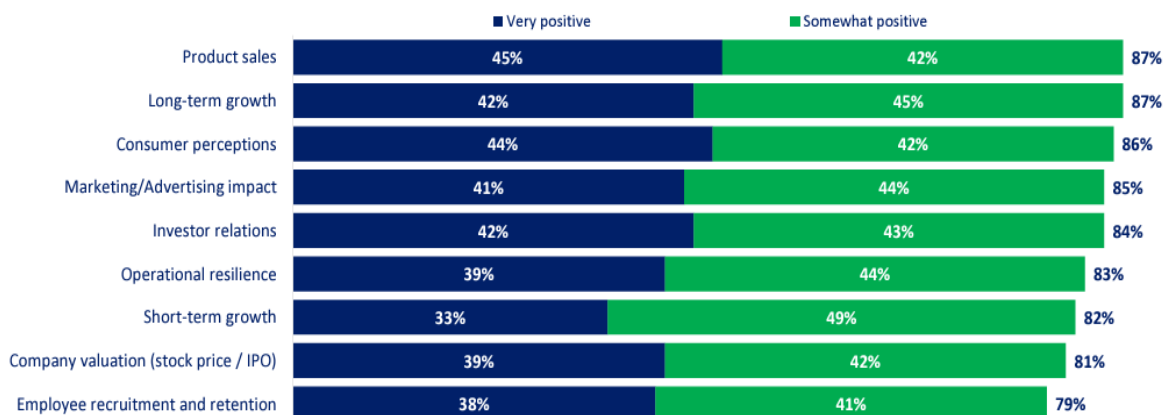


IMPROVING CROP INPUT TECH IS KEY TO REGENERATIVE AGRICULTURE TRANSITION. CORTEVA (CTVA) AMONG THE NAMES THAT ARE WELL POSITIONED.

Key takeaway: Adopting regenerative agriculture methods can lead to sustained ecological and economic benefits for farmers, and broadly, the food and beverage (F&B) industry. A growing swath of consumers is slowly warming to the notion that paying a premium for such eco-friendly products is acceptable if the premium justifies the long-term personal and ecological health benefits. F&B companies have set ambitious targets to increase procurement of ingredients produced through such methods to meet this at-the-margin growing demand. The long-term benefits for farmers include higher productivity and increased revenue opportunities due to soil and water source health that will result in increased demand per unit volume production. To satisfy this demand shift, farmers will require crop-input enhancement, invasive pest and species control and energy and irrigation conservation and technology solutions that can ease the initial cost-related burdens required for this transition. We emphasize use of the word “transition” rather than “transformation” because we believe all these technology, infrastructure and methodology solutions are within the distributive grasp of the global agricultural industry. As a result, agriculture technology companies such as Corteva (CTVA), Yara (YARIY), and Bioceres Crop Solutions (BIOX) that are on the ecological cusp of these demand-driven transitional solutions stand to benefit from the growing adoption of a necessary global regenerative agricultural transition.

Shifting consumer demand is pushing food retail and consumer product companies to integrate regenerative agricultural products into their end-user product offering. Modified down-stream demand is causing a shift in the upstream supply chain, leading to the gradual emergence of a \$32 billion market. Regenerative agriculture refers to a gradual modification of farming and grazing practices with an end goal to economically and intuitively enhance the entire agricultural ecosystem. By focusing on soil health via technologically enhanced agricultural inputs, economically judicious use of water and irrigation, and efficient deployment of energy resources regenerative agriculture seeks to restore the natural, organic biodiversity of the ecosystem that has been lost over time due to historically inefficient agricultural methods. This approach is distinguished by its emphasis on techniques that minimize negative agricultural outputs, improve the water cycle, enhance ecosystem services, increase resilience to climatological shocks, and strengthen the overall health and vitality of arable soil/land. At a time when consumers are becoming increasingly aware about the ecological impact of the food they consume, regenerative agriculture presents an opportunity to invest in food systems that have the potential for long-term ecological and economic benefits. A recent study from [Archer Daniels Midland \(ADM\)](#) found that more than 70% of U.S. consumers want retailers and brands to implement regenerative agricultural practices/programs while more than 60% were willing to pay more for products produced using such practices. This shift in consumer sentiment is also reflected in the opinion of retail and CPG decision-makers, who cite that regenerative agricultural programs have multiple positive impacts on the company’s reputation and performance. (See chart below.) Driven by these trends, the global regenerative agricultural market is expected to grow from \$8.7 billion in 2022 to \$32.3 billion by 2032, a CAGR of 14%, according to [Emergen Research](#).

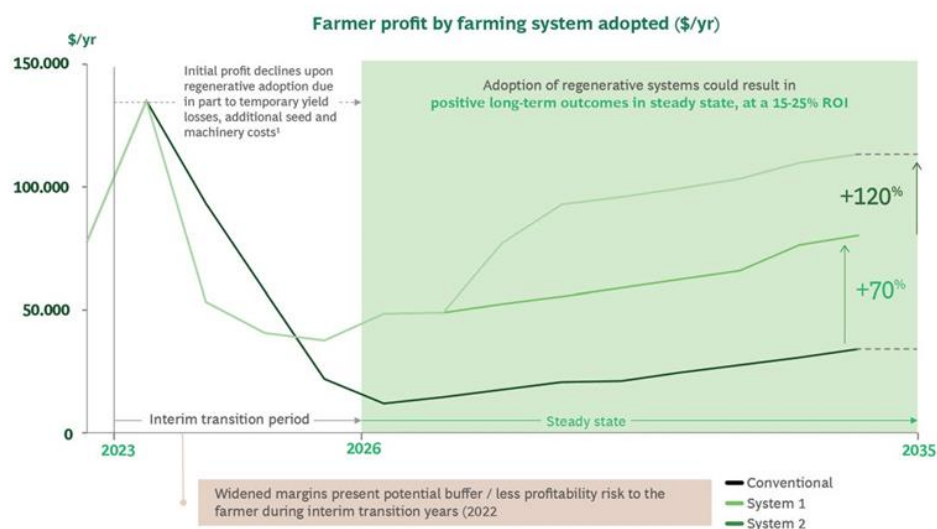
Chart 1: Positive Impacts of Regenerative Programs on Company's Reputation and Performance



Source: Intro-act, [ADM Farming for the Future: The State of Regenerative Agriculture Program Adoption, November 2023](#)

Our research shows that migration toward regenerative agriculture is gaining momentum in the global F&B industry, with many companies taking significant steps to fulfill this marked shift in consumer demand. At the industry level, the Sustainable Agriculture Initiative (SAI) Platform launched the Regenerating Together framework which provides a globally aligned definition and approach to regenerative agriculture. More than 180 food and beverage companies, including Nestle (SWX: NESN), Danone (EPA: BN), Unilever (UL), and PepsiCo (PEP), have committed to it. Separately, Nestle has set a target of sourcing 20% of its key ingredients through regenerative agriculture methods by 2025, and 50% by 2030. PepsiCo has also committed to agricultural products sourced across 7 million acres of land employing regenerative agricultural techniques and further, to source 100% of key ingredients on agriculturally regenerative land by 2030. General Mills (GIS) announced its commitment to advance regenerative agriculture on 1 million acres of land by 2030. As of January 2024, the company had reached the [halfway stage of that target](#). Many other food and beverage companies such as ADM, Danone, Unilever, and Kellogg's are launching similar initiatives to accelerate the transition toward regenerative agriculture.

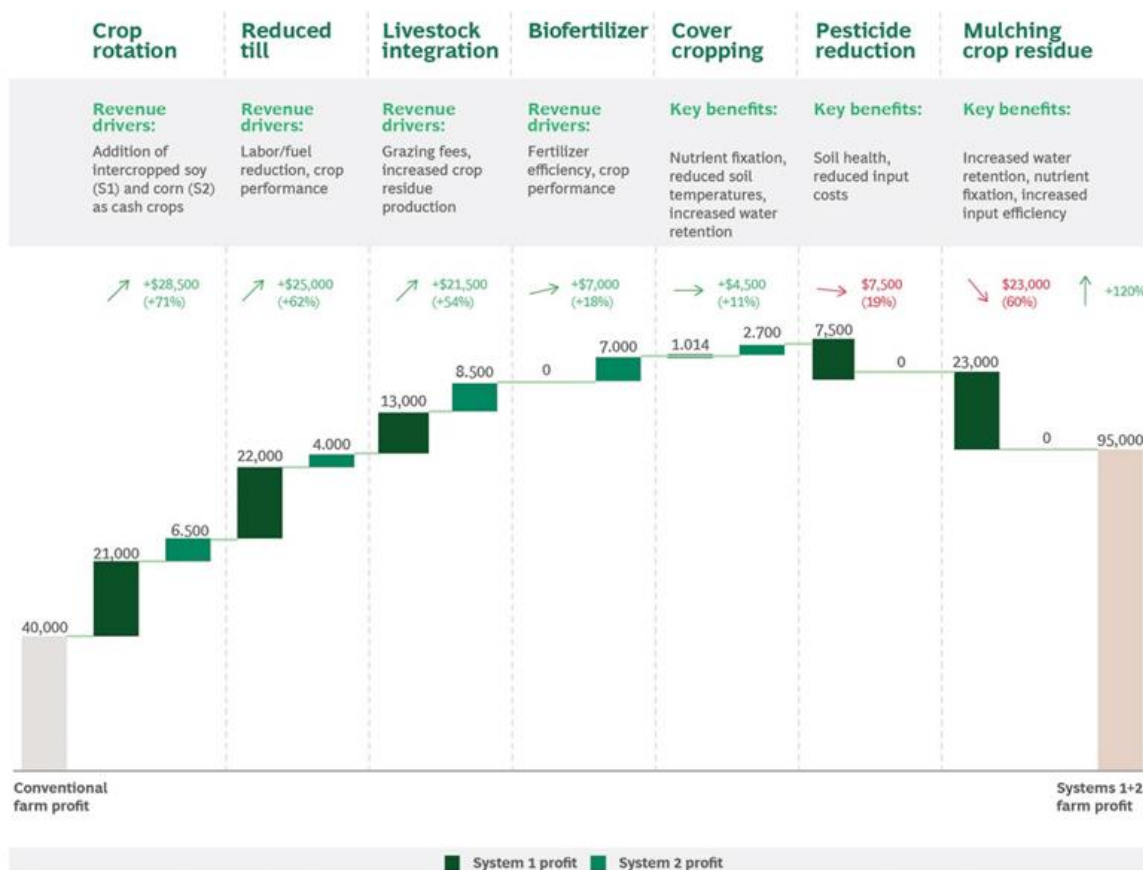
Chart 2: Better Long-term Profitability Comes with Short-term Costs and Low Profitability for Farmers



Source: Intro-act, BCG. 1: Transition yield losses due to initial impacts from introducing soy to the dryland cash crop rotation

While we do NOT embrace, nor, for that matter, endorse the actions by farmers that would need to be implemented to drive the Chart 2 (above) [BCG](#) estimates for the impact we affirm the impact the regenerative transition would have on the agricultural community and, more specifically, on farmers. In short, the onus of this transition would largely reside on farmers to produce the results BCG suggests are achievable were the farming community to transition to the full regenerative model. While these industry-critical stakeholders would face higher upfront investments, the prospective long-term benefits (including BCG's projected 70%-120% productivity increase*) can be expected to drive this transition. To address the increasing demands of the shift from traditional agriculture to regenerative agriculture, farmers face an acute challenge to pay for this transition, which may be more profitable in the out-years but clearly requires substantial upfront costs and lower profitability in initial years. According to BCG, this transition requires additional seed and machinery spend, during which time, farmers would be impacted by yield losses throughout the transition period (~3 years). BCG projects, however, that following the profitability decline during the transition, margin improvement will follow and reach a steady state, during which farmers can expect to see 70% to 120% productivity increases that will result in commensurate margin improvements compared the conventional farming methods farmers had previously been employing. Some drivers, according to BCG, that will help farmers achieve this productivity boost include 1) intercropping through which they can integrate cash crops with conventional crops, 2) reduced tilling which leads to low fuel and labor requirements, 3) livestock integration which reduces grazing fees and increases crop residue production, and 4) use of biofertilizers which improves fertilizer efficiency and crop performance resulting from soil health improvements. In addition, other initiatives such as cover cropping, pesticide moderation and mulching crop residue will help to maintain soil health and increase water retention, which, in turn, improves the long-term health of the farming ecosystem.

Chart 3: Path to Higher Sustained Profits Through Regenerative Agriculture Adoption



Source: Intro-act, BCG * Note this increase is projected from the bottom of the three-year 2023-2026 sharp decline in the above BCG Chart 2.

In this context, we believe that crop-input and technology solutions companies that make the transition to regenerative agriculture less economically demanding for farmers, will be well positioned to experience both revenue and profitability acceleration commensurate with the rate of regenerative transition and should be on investors' radar.

Farmers in the present global agricultural environment face a challenging convergence of high-and-increasing input costs and lower consumer prices. A continuation of this economic backdrop could mean that farmers may find it difficult to make the transition to regenerative agriculture. This also presents an opportunity, however, for crop-input companies to innovate and provide products and solutions to farmers that facilitate the regenerative transition; smoothing an otherwise volatile and economically taxing road that farmers engaged in the transitional process must travel. Corteva Agriscience (CTVA), Yara International (YARIY) and Bioceres (BIOX) are some such stocks that investors should track. We discuss CTVA below.

Company Spotlight: Corteva Agriscience (CTVA)

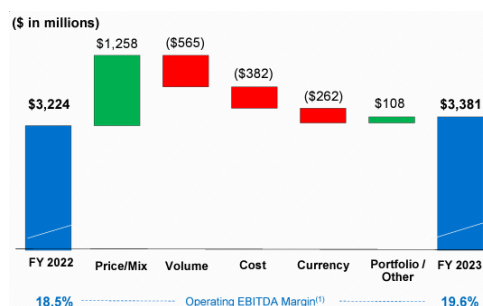
Corteva Agriscience (CTVA) is a global pure-play agriculture company that emerged from the DowDuPont demerger. It became an independent entity on June 1, 2019, marking a significant milestone in its journey to lead innovation in the agtech sector. Corteva is focused on enhancing farmer productivity and profitability while ensuring environmental sustainability. The company's operational footprint spans multiple continents, with a robust portfolio that includes seeds, crop protection, and digital solutions designed to maximize agricultural productivity. Corteva is segmented into two primary areas: crop protection and seeds. The crop protection segment offers a comprehensive range of products, including herbicides, insecticides, and fungicides, aimed at combating various threats to crop health and yield. The seeds segment, on the other hand, provides genetically modified and conventional seeds for a wide array of crops, ensuring farmers have access to high-quality, high-yield seeds.

Corteva's dominance in regenerative agriculture is evident through its strategic initiatives and partnerships:

- In 2023, in collaboration with Bunge and Chevron, Corteva announced a commercial partnership to produce proprietary winter canola hybrids. These hybrids are designed to yield plant-based oil with a lower carbon profile, primarily for the renewable fuels market. This initiative not only opens new revenue opportunities for farmers through sustainable crop rotation, but it also enhances soil health by encouraging cover crops, thereby contributing to reduction in carbon emissions.
- In 2021, Corteva introduced the Carbon and Ecosystems Services portfolio, which aims to facilitate carbon sequestration processes, ease farmers' access to carbon credits, and provide flexible solutions to enhance profitability while contributing to climate change mitigation.
- Climate Positive Leaders Program was launched to recognize farmers and ranchers who have successfully implemented climate-positive agricultural practices.

Management expects 2024 to be a year of strong demand, led by strong fundamentals and record-setting demand for grain, oilseeds, meat, and biofuels. CTVA recently reported its 4Q23 and full year results for FY23. The company experienced a 1% drop in net sales in 2023, with organic sales down by 3%, as gains in North America and EMEA were offset by declines in Latin America and Asia Pacific. Seed net sales rose by 5%, with a 13% global price increase. Volume declines were driven by lower corn volumes in Latin America, exit from Russia, and lower corn planted area in EMEA, partially offset by increased corn acres in North America. Operating EBITDA came in at \$3.38 billion, a 5% improvement y/y. Importantly, cash provided by operating activities was \$1.8 billion, +98% y/y. For 2024, the company has issued a guidance of improving net sales by 2% at the midpoint of guided range (\$17.4 to \$17.7 billion) and improving operating EBITDA by 6% at mid-point of the guided range (\$3.5 to \$3.7 billion). Cash provided by operating activities is expected to be in the range of \$2.1 billion to \$2.6 billion while free cash flow is expected to be in the range of \$1.5 billion to \$2.0 billion.

Chart 4: Corteva Operating EBITDA Margin Bridge (FY2023)



Source: Intro-act, Corteva Website

AGTECH NEWS

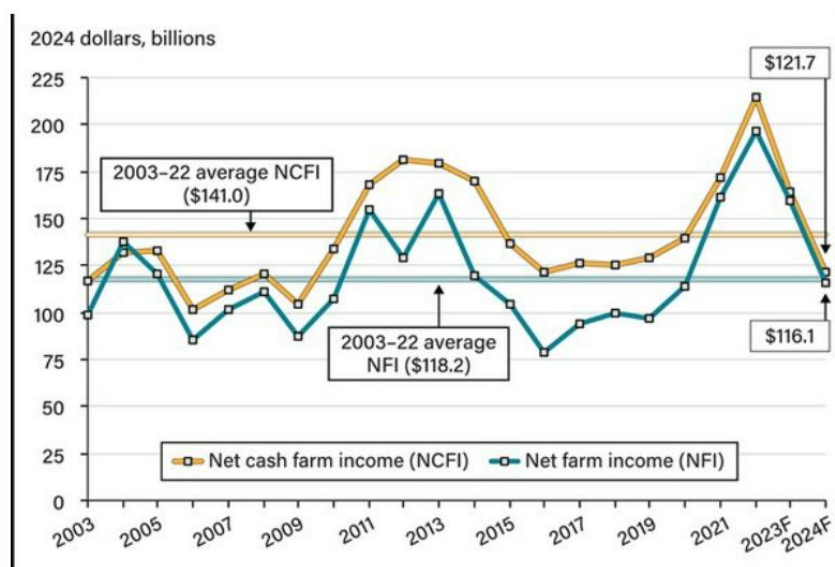
INDUSTRY TRENDS

Agricultural robotics market poised to kick growth into high gear. The global agricultural robotics market is set for substantial growth, with projections soaring from \$13.4 billion in 2023 to \$86.5 billion by 2033, signifying a 20.5% compound annual growth rate. Rising labor costs and increased food demand are driving this surge, prompting automation adoption. Advanced technologies like AI and GPS enhance farming efficiency and reduce environmental impact. Milking robots dominate, followed by drones and driverless tractors. Planting, seeding, and soil management are key focus areas. Challenges in full automation persist, with North America leading drone sales and the EU focusing on targeted pesticide regulations. Key players like AGCO Corporation and John Deere are advancing precision spraying and route planning technologies. [Read More](#) (Global AgTech Initiative)

Angry farmer protests are spreading across Europe — and getting results. The EU aims for carbon neutrality by 2050 and a 55% reduction in greenhouse gas emissions by 2030. However, recent farmer protests led to policy changes, including scrapping a pesticide reduction plan and excluding agriculture from strict emission cut timelines. Agriculture Commissioner Janusz Wojciechowski supports these reversals, advocating for financial incentives over forced pesticide reduction. Concerns arise about meeting climate targets amidst policy shifts. Farmers protest due to rising costs, debt, and market competition, with declining product prices exacerbating financial strain. Reflection on investment support is urged, given agriculture's pivotal role in EU's Common Agricultural Policy. Protest extends to the UK, highlighting broader industry discontent. [Read More](#) (CNBC)

U.S. farm sector profits forecast to fall in 2024 from record high in 2022. USDA's Economic Research Service predicts a significant decline in U.S. farm income for 2024. Net cash farm income (NCFI) is expected to drop by 25.8% to \$121.7 billion, while net farm income (NFI) is forecasted to decrease by 27.1% to \$116.1 billion, after record highs in 2022. This follows a \$50.2 billion decrease in NCFI and a \$37.2 billion decrease in NFI in 2023. Factors include a \$32.2 billion drop in commodity cash receipts and a \$7.2 billion increase in production expenses. Additionally, government payments are expected to decrease by 17.7% to \$10.2 billion in 2024. [Read More](#) (Vertical Farm Daily)

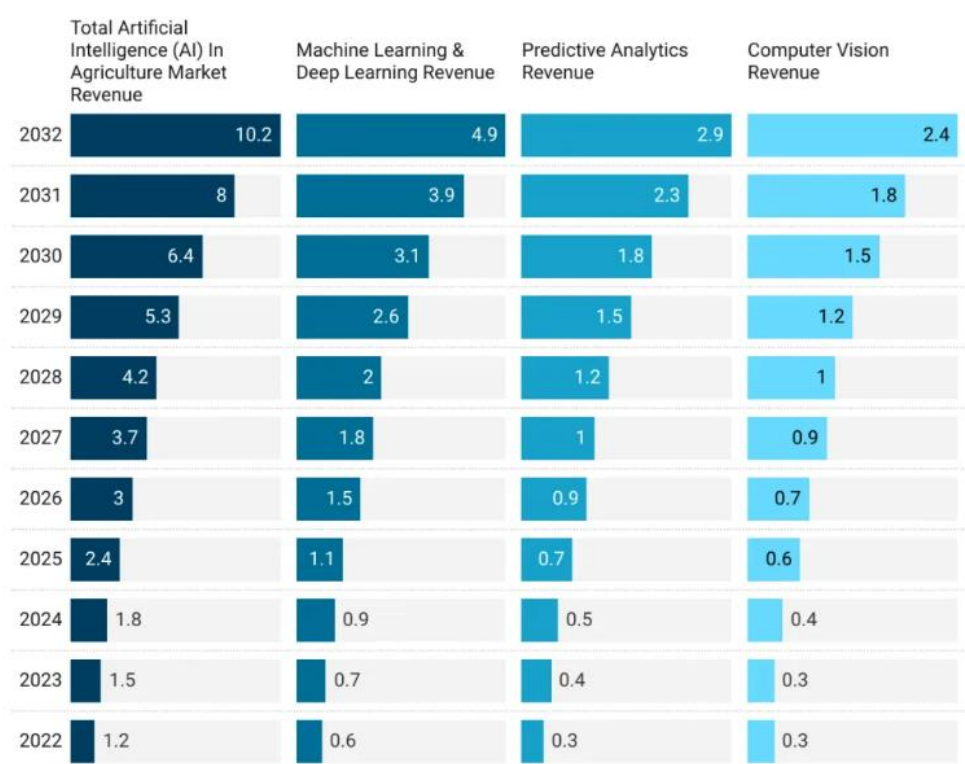
Chart 5: ERS Predicts Sharp Reduction in NFI and NCFI for 2024



Source: Intro-act, Vertical Farm Daily, ERS

AI in agriculture: Transforming farming practices for enhanced efficiency and sustainability. AI technologies revolutionize agriculture, enhancing precision farming through real-time data collection on crop health, soil conditions, and weather patterns. This approach optimizes resource management, leading to increased productivity with reduced environmental impact. AI-driven systems also monitor crop and livestock health, streamline supply chains, and improve decision-making processes. Despite challenges like data privacy, AI integration continues to expand, with the global market projected to reach USD 10.2 billion by 2032. Key initiatives include the US-India AI Initiative and advancements in smart agricultural equipment, such as drones and autonomous machinery, indicating a significant shift towards AI-driven solutions in agriculture. [Read More](#) (Yahoo Finance)

Chart 6: Total Artificial Intelligence (AI) in Agriculture Market Revenue (USD billion)



Source: Intro-act, Yahoo Finance and Market.us Scoop

Revolutionizing agriculture: AI and robotics in farming at CES 2024. The fusion of technology with agriculture takes center stage at CES 2024, with over 130,000 attendees and 4,000 exhibitors spotlighting AI-driven innovations. Among them, Plenty's high-tech robot farm aims to revolutionize farming practices using cutting-edge robotics and AI. This showcases the potential of AI in various sectors, including agriculture, entertainment, finance, healthcare, and transportation. Generative AI is a key theme, with AI-powered tools like Plenty's farm promising efficiency and sustainability. CES 2024 highlights AI's wide-ranging applications, from automotive to consumer electronics, signaling a move towards an AI-dominated future. [Read More](#) (Medriva)

Deloitte predicts major growth in IoT for agriculture and its potential for environmental sustainability. Deloitte's TMT Predictions 2024 report forecasts a 50% surge in agricultural IoT applications by 2024, driven by global demand for efficient AgTech. Expected to grow from 200 million to nearly 300 million IoT endpoints, this sector presents an \$18 billion revenue opportunity by 2024, with a 19% CAGR from 2020 to 2024. Deloitte's collaboration with the Environmental Defense Fund highlights IoT's potential to reduce 9.8 gigatons of CO2e emissions by 2050, saving farmers \$40-100 billion by 2030. Despite challenges like food security and aging farmers, the integration of IoT in agriculture promises informed decision-making, higher yields, and sustainable practices. [Read More](#) (BNN Breaking)

Farmers' revolt threatens election year upsets around the world. Agriculture has become a major battleground globally, as political figures strive to appease the agricultural community. From Donald Trump to numerous far-right groups throughout Europe, there is an effort to harness the dissatisfaction within this sector. This situation signifies a shift in the wider cultural clashes, primarily driven by disputes concerning the rate of economic and societal changes required by climate change. Such conflicts have led to demonstrations worldwide. [Read More](#) (Times of India)

Chart 7: Farmers Comprise Minority of Workforce in Developed Countries



Source: Intro-act, Times of India, Bloomberg

AI enhancing nanotechnology in agriculture: a leap forward in sustainable farming. Artificial Intelligence (AI) integration into nanotechnology is reshaping agriculture, boosting crop productivity, pest control, and sustainability. By leveraging AI, nanotech applications in farming become smarter and more efficient. Nanosensors monitor soil health with precision, guiding irrigation and fertilization decisions. Targeted pesticide delivery and nano-fertilizers, optimized by AI analysis, enhance pest control and reduce chemical usage. [Read More](#) (Agritech Tomorrow)

Agriculture input costs likely to remain high in 2024, AHDB warns. New AHDB statistics reveal potential profitability challenges for UK farms in 2024 due to input cost variability and inflation. While the Agricultural Price Index (API) decreased by 6.5%, farm inputs fell by 10% year-on-year. However, ongoing disruptions in the Middle East, like Red Sea shipping delays from the Israel-Gaza conflict, could impact input costs. Positive declines are noted in fertiliser and energy prices, but concerns persist regarding UK wheat prices due to Black Sea grain supplies and global weather. Overall, farm profitability may be affected by input cost fluctuations and inflation, despite recent decreases in certain input prices. [Read More](#) (Agronomist & Arable Farmer)

First ethanol-to-sustainable aviation fuel plant opens. The U.S. celebrates the inauguration of its inaugural commercial plant, LanzaJet Freedom Pines Fuels in Georgia, capable of converting ethanol into sustainable aviation fuel (SAF) and renewable diesel. This 10 million-gallon-per-year facility marks a significant step in utilizing low-carbon ethanol for SAF production. Although Iowa's corn-based ethanol currently lacks a low enough carbon intensity score for SAF, efforts are underway to improve it, including CO2 sequestration. [Read More](#) (Brownfield)

Cattle industry faces headwinds, but many remain optimistic. Industry consultant Nevil Speer highlights optimism in the cattle industry despite ongoing challenges. High input costs and limited working capital pose hurdles for producers, particularly with rising interest rates affecting cash flow. Speer anticipates interest rates stabilizing soon, bringing relief to producers. While optimism is prevalent, Speer emphasizes the importance of risk management for protecting profitability. Producers are encouraged to implement strategies to safeguard their bottom line amidst fluctuating market conditions. [Read More](#) (Brownfield)

Ethanol supply jumps as production falls. Ethanol stocks have surged for eight consecutive weeks, reaching a near three-year high, according to the U.S. Energy Information Administration. Supply hit 25.815 million barrels, up 0.5% weekly and 2.9% annually, driven by reduced demand amid harsh winter conditions in the U.S. Production fell to 818,000 barrels per day, the lowest since February 2021, influenced by weather. Iowa State University notes steady operating margins for Iowa plants compared to last year. The Renewable Fuels Association reports significant declines in ethanol purchases and gasoline supply due to sluggish demand. Ethanol exports rose to 121,000 barrels per day. [Read More](#) (Brownfield)

Red Sea crisis: second largest capacity drop. The Red Sea crisis, ongoing for a month, has caused significant disruptions in service networks, particularly from Asia to Europe. Analyzing using the Trade Capacity Outlook report, comparisons reveal unprecedented volatility, surpassing disruptions from previous years, including those caused by the pandemic. Chinese New Year and Golden Week typically lead to capacity declines, but the Red Sea crisis stands out as the largest event, second only to the "Ever Given" incident. Despite overlapping with Chinese New Year disruptions, its impact is notably substantial, highlighting the severity of the current situation. [Read More](#) (Vertical Farm Daily)

2024 USDA meat estimates mixed. The USDA's meat production projections for 2024 show mixed results. Beef production is forecasted at 26.185 billion pounds, up by 75 million from January, with expectations of increased slaughter rates and heavier carcass weights. Pork production is pegged at 27.88 billion pounds, down by 90 million due to slower slaughter, while chicken production is estimated to be 46.775 billion pounds, up by 100 million because of heavier broilers. Turkey production is expected to decrease to 5.395 billion pounds due to weak demand and avian influenza. Prices and trade dynamics vary across the different meat categories. [Read More](#) (Brownfield)

Agtech innovations expected to top the 2024 trend list. In the face of challenging conditions for farmers, innovation emerges as a vital tool, spanning automation, AI, alternative proteins, and more. With pressure to enhance productivity and sustainability, several agri-tech trends are anticipated in 2024. Regenerative agriculture gains attention for its role in carbon management, albeit hindered by insufficient farmer incentives. Innovations to reduce methane in livestock, like seaweed-based solutions, are on the rise. AI's value in agriculture is projected to soar to \$4.7 billion by 2028, driving efficiency in various sectors. Despite hurdles, alternative proteins, including cellular foods, show promise with growing consumer and industry interest. [Read More](#) (Farmtario)

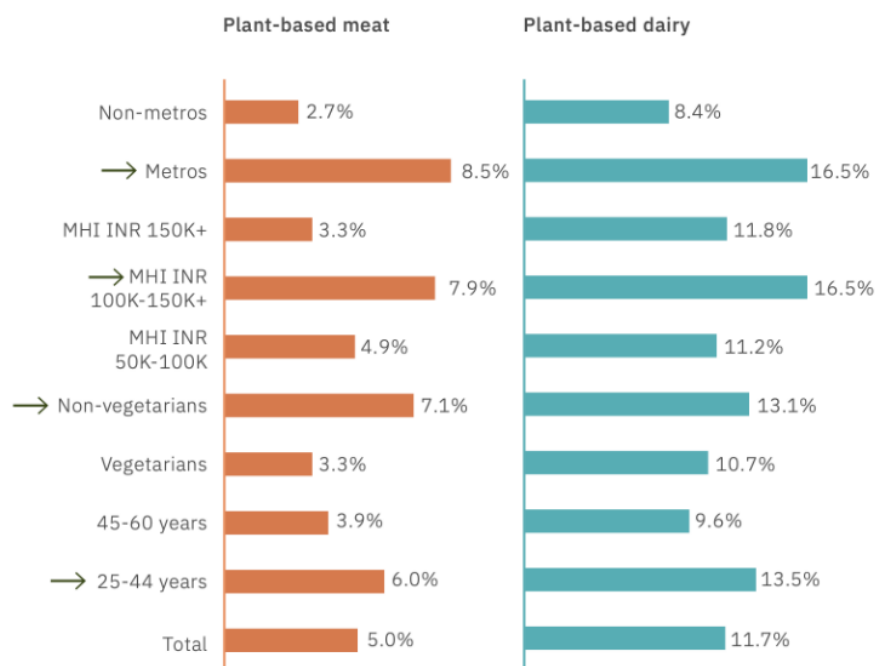
Salmon aquaculture to remain strong in 2024, but shrimp sector expected to struggle: Rabobank. Rabobank's bi-annual aquaculture report predicts continued profitability for the salmon sector in 1H 2024, while low shrimp prices are expected to persist as the "new normal." Salmon farmers can anticipate robust profitability due to slightly lower feed costs and steady prices. However, shrimp farmers face challenges with low prices and weak demand from China. Salmon supply is set to recover, primarily driven by Norway, but Chile's growth is hindered by biological issues and regulatory changes. [Read More](#) (Global Seafood Alliance)

2024 and beyond: what does the future hold for agritech? The increasing demands on land use, from food production to nature recovery, require intelligent, sustainable, and equitable approaches. Policy frameworks and market forces play a role, but innovation, particularly in artificial intelligence (AI), holds promise for agriculture. AI facilitates robotics, land management decisions, disease control, and market analysis. Success depends on robust data. Beyond AI, agritech explores sustainable methods like precision fermentation and controlled environment agriculture (CEA) for high-value products. [Read More](#) (Vertical Farm Daily)

Corn, soy exports heading in opposite direction. Market analyst Jeff Peterson notes contrasting trends in U.S. corn and soybean exports. Corn exports are thriving, up 30% compared to last year, supported by strong projections and higher sales and inspections. Potential production issues in South America could further boost U.S. corn exports. However, soybean exports face challenges, with South American offers substantially cheaper. [Read More](#) (Brownfield)

What do Indians want from vegan food? New survey reveals sector challenges & potential. The Good Food Institute (GFI) India conducted a pioneering survey on consumer attitudes towards vegan meat and dairy in India. Key findings include high awareness but low adoption rates, with plant-based dairy leading in familiarity. Social media plays a significant role in driving awareness. Chicken-based alternatives are most popular, and soy milk remains the dominant dairy substitute, although almond milk is gaining traction. Health concerns and protein content influence purchases. Taste, cost, and convenience are crucial for repeat purchases. [Read More](#) (Green Queen)

Chart 8: Awareness About Plant-Based Meat and Dairy Is Higher In Certain Quarters



Source: Intro-act, Green Queen, GFI India

AG economist says livestock producers could see lower feed costs in 2024. Livestock producers may find relief in 2024, with the USDA report lowering corn and soybean meal prices. Scott Brown from the University of Missouri notes the positive shift, suggesting potential price protection measures due to uncertainties in South American crop sizes. He advises early consideration of 2024 corn-soybean acreage, foreseeing increased corn planting. However, he warns of possible price declines if corn production rises. Despite this, lower feed costs offer optimism for livestock producers, emphasizing the importance of monitoring financial performance closely. [Read More](#) (Brownfield)

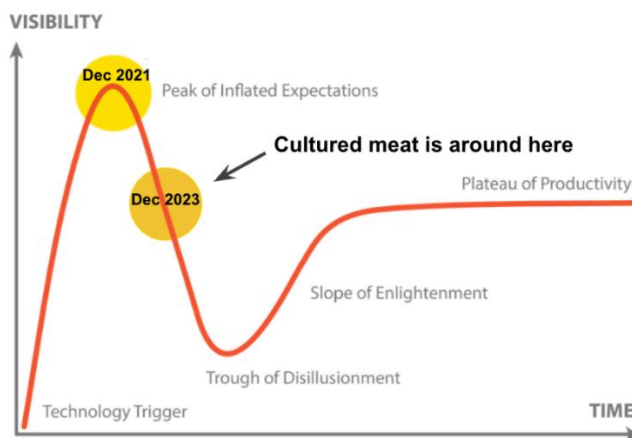
Study finds cover crops can drastically lower nitrate leaching. A study funded by Affinity Water and Portsmouth Water, conducted by ADAS, reveals cover crops can slash nitrate leaching by 90%, benefitting future yields. Testing two cover crop mixes in Hertfordshire and West Sussex, the study found significant reductions in nitrate leaching and increased in-soil nitrogen, boosting spring cereal crop yields by 0.2-1.0 t/ha. Chemical destruction of cover crops proved most effective, enhancing nitrogen mineral release and crop uptake. ADAS's Dr. [Read More](#) (Agronomist & Arable Farmer)

‘Substitarians’ on the rise in Switzerland as meat consumption falls: survey. A Coop Switzerland survey reveals a significant shift towards plant-based alternatives among Swiss consumers, with over half trying meat, dairy, and seafood substitutes. Flexitarians, constituting 58% of the population, consciously reduce animal-derived food consumption. Substitarians, accounting for 56%, regularly opt for plant-based alternatives. The trend is especially prevalent among young urbanites. Climate change concerns drive most towards plant-based choices, followed by health considerations. Labels like "plant-based" are more appealing than "vegan," aligning with health and environmental concerns. Despite dairy and meat alternatives still being niche, their sales are growing, indicating a shift towards mainstream acceptance, mirrored by Coop's expanded vegan product line and partnerships with alt-meat companies. [Read More](#) (Green Queen)

67% of Thai consumers want to eat less meat and more plant proteins for health. A recent survey in Thailand reveals that two-thirds of the population aims to reduce meat consumption over the next two years, motivated by health and nutrition. While 75% currently consume meat and 18% are already cutting back, 67% plan to decrease animal protein intake. The survey highlights familiarity with plant-based alternatives and health benefits, with environmental concerns trailing behind. Health and nutrition remain primary drivers for adopting alternative proteins, while barriers include perceived high prices and processing. The research suggests that government investment in alternative protein R&D and reduced taxes could facilitate dietary shifts toward plant-based options. [Read More](#) (Green Queen)

Bold predictions in AgTech and Cellular Ag for 2024. Agricultural technologies (AgTech) offer significant potential to mitigate global climate emissions. Despite varying estimates, AgTech can make a substantial impact. Farmers' markets and the sale of organic food have seen substantial growth. There's a growing awareness of plastic hazards, leading to packaging redesigns. Cell-based meat presents a promising solution to reduce environmental impacts. However, its production at scale remains challenging. Precision fermentation, aiding plant-based food production, shows progress. Biomass fermentation, creating microbial products like fungi, offers eco-friendly packaging alternatives. [Read More](#) (CleanTechnica)

Chart 9: Progress of Cultured Meat on The Gartner Hype Cycle



Source: Intro-act, CleanTechnica

AgTech trends survey: Demand rising for AI, automation & data analytics. The AgTech Trends 2023 survey reveals a surge in digital transformation within agribusinesses, yet many struggle with actionable insights. Challenges like inaccurate yield predictions persist due to data complexities. Respondents, including executives and specialists, advocate for AI and automation to enhance decision-making across the agrifood chain. Of 807 U.S.-based workers surveyed, 90% see AI as transformative, while 92% find it challenging to improve on-farm activities with current data. Over half plan to invest in on-farm robotics, and 60% intend to boost AgTech budgets. Climate change concerns are high, pushing for better weather forecasting. Despite obstacles, there's optimism towards AgTech adoption, aiming to revolutionize agriculture. [Read More](#) (Precision Farming Dealer)

REGULATORY UPDATES

Autonomous tractors: A boom or boon for right to repair? The agricultural sector's right-to-repair battle involves resistance from major players like John Deere and Kubota. A recent agreement brings changes, yet the emergence of autonomous tractors adds complexity. Will AVs empower farmers' repair rights or benefit manufacturers? John Deere's agreement with the Farm Bureau lacks federal backing, weakening accountability. Clauses still limit repair knowledge. Tech inclusion in MOUs defines software access but shields manufacturers. AVs expand repair discussions but pose challenges, potentially aiding or hindering farmers' rights. [Read More](#) (Agritech Tomorrow)

US Department of Defense investment program opens opportunities for food tech innovation. The US Department of Defense launched the Distributed Bioindustrial Manufacturing Investment Program (DBMIP), offering up to \$1.5 million to companies developing bio-based materials for military use. This includes food ingredients, aiming to improve ready-to-eat meals and replace imported components. Aligned with President Biden's bioeconomy goals, the program encourages sustainable technologies like precision fermentation and cell-cultured meat. The initiative strengthens domestic supply chains and supports biotechnology innovation, contributing to both national security and economic growth. [Read More](#) (Vegconomist)

Cultivated meat regulation: Where are we? UK, Israel & Australia forge ahead, US & EU fall behind. The year 2024 holds significant regulatory implications for cultivated meat worldwide, with countries displaying varied stances. Israel, the UK, and the Asia-Pacific region are forging ahead with approvals, signaling progress. Conversely, states like Florida, Arizona, and Texas in the US are pushing back, seeking bans. Europe faces internal strife, with Italy, Romania, France, and Austria opposing cultured meat production. Challenges persist, including infrastructure limitations and regulatory hurdles. While the future remains uncertain, stakeholders emphasize the need for innovative solutions and government support to overcome barriers and ensure the success of the cultivated meat sector. [Read More](#) (Green Queen)

What the US FDA reorganisation means for alternative protein regulation. Following the infant formula crisis, the FDA is undergoing a significant overhaul, aiming to enhance its human foods program and regulatory affairs teams. This transformation, involving the reorganization of key departments, including the Office of Regulatory Affairs (ORA) and the Center for Food Safety and Applied Nutrition (CFSAN), will lead to a more streamlined structure called the Human Foods Program. While the implications for alternative proteins remain somewhat uncertain, industry stakeholders express hopes that the FDA will maintain its leadership in advancing novel food technologies. Adequate funding and robust regulatory processes are seen as crucial for fostering innovation in the alternative protein sector. [Read More](#) (Green Queen)

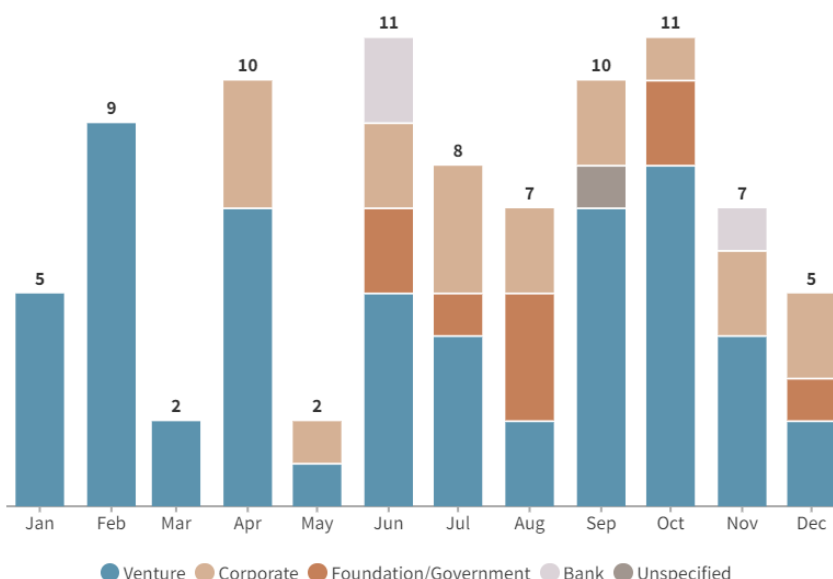
Disassociating from the beginning: US senators propose a ban on cultivated meat in school meals. Senators Rounds and Tester introduce the School Lunch Integrity Act of 2024, aiming to ban cultivated meat in US school meals. This bipartisan bill seeks to amend existing acts to prohibit cell-cultured meat under the National School Lunch Program and School Breakfast Program. It's supported by Tester's emphasis on serving real meat from local ranchers. Despite USDA approval for cell-based chicken, Rounds questions safety and prioritizes local beef. The bill reflects global skepticism toward cultivated meat, with parallels seen in France, Italy, and Austria. However, climate activists argue for focusing on environmental sustainability rather than banning alternative proteins. [Read More](#) (Green Queen)

'Immense Potential': Indian Government Body to develop cultivated fish in partnership with Neat Meatt. The Indian government collaborates with Neat Meatt Biotech to develop cell-cultured seafood, a pioneering project led by the ICAR-Central Marine Fisheries Research Institute (CMFRI). This partnership aims to address India's surging seafood demand, mitigate pressure on wild resources, and advance climate and food security goals. Initially focusing on high-value fish species popular in India, CMFRI will conduct research on cell line development, while Neat Meatt will lead in cell culture technology. The collaboration underscores India's commitment to sustainable seafood production, leveraging public-private partnerships to advance research and innovation in cultivated proteins. [Read More](#) (Green Queen)

CAPITAL MARKETS

Where has the most venture capital been invested in aquaculture? Venture capital injected \$808 million into the aquaculture industry in the past year amid economic challenges, marked by fewer funding rounds and cautious private investment due to rising interest rates and valuation realignments. Aquablurb's analysis reveals \$2.2 billion publicly invested in aquaculture and alternative seafood across 87 rounds, with venture funding contributing significantly. As a global food security contributor, aquaculture innovation aims to meet protein demands, projected to reach 106 million tonnes by 2030. The analysis aims to track annual aquaculture deal flows, highlighting trends and opportunities. Notable deals include eFishery's \$200 million Series D and Enifer's €11 million Series A, driving innovation and supply chain efficiency improvements expected to continue. [Read More](#) (The Fish Site)

Chart 10: Aquaculture Deal Announcements Were Busier in H2 2023



Source: Intro-act, The Fish Site

From insect ag and vertical farming to aquaculture... the top 20 deals in Novel Farming Systems in 2023. In 2023, funding for Novel Farming Systems saw a significant drop, falling to \$673.2 million from \$2.92 billion in 2022. Investor caution led to bankruptcy for some startups (like Lemnatec AquaFarms, AeroFarms), while others (like Ynsect) downsized to boost profitability. This category encompasses various indoor farming methods, aquaculture, and algae production. Despite the downturn, notable investments included Ynsect's \$175 million Series D round, AeroFarms' \$71 million post-bankruptcy financing, and Protix's \$61 million from Tyson Foods. AgFunder's forthcoming report will provide deeper insights. Notable rounds also included Planet Farms, Victory Farms, CH4 Global, and Stacked Farm. [Read More](#) (AgFunder News)

Seed gene-editing startup Inari valued at \$1.65bn following \$103m fundraising. Inari, a seed gene-editing startup based in Cambridge, Mass., recently raised \$103 million in equity, increasing its valuation to \$1.65 billion. With existing investors like Hanwha Impact and new ones like RCM Private Markets, this brings their total equity capital to over \$575 million. Their SEEDesign platform, employing multiplex gene editing with AI, aims to enhance crop yield while reducing resource usage and synthetic chemicals. Inari's focus on row crops like soybeans, corn, and wheat targets markets in the US, Canada, and Australia. This funding reflects investor confidence in addressing food security and sustainability challenges through innovative biotech solutions. [Read More](#) (AgFunderNews)

Chart 11: Constituents of Inari's SEEDesign™ Technology Platform

Predictive Design



The Blueprint

BUILDING AN EVER-DEEPER UNDERSTANDING
OF PLANTS' COMPLEX INNER WORKINGS



Multiplex Gene Editing



The Toolbox

EXECUTING MULTIPLE EDITS AND EDIT
TYPES, ALL AT THE SAME TIME

Source: Intro-act, Inari Website

Dutch online grocer Picnic raises \$388 mln from investors, Gates Foundation. Dutch online grocery store Picnic has secured €355 million (\$388.02 million) from investors, including The Bill and Melinda Gates Foundation Trust and Edeka, Germany's largest supermarket group. The funds will fuel the company's expansion in France and Germany, where it has already established distribution centers in Hamburg, Berlin, and Paris. Picnic, founded in 2015, operates by delivering customer orders via its app through small electric vans at scheduled times. The investment aims to support Picnic's growth and enhance its presence in the competitive online grocery market. [Read More](#) (Reuters)

The Philly company that makes autonomous farm robots just raised \$24M. Philadelphia's robotics scene gains national attention as Burro, an autonomous robotics company, secures \$24 million in Series B funding. Led by Catalyst Investors and Translink Capital, with contributions from existing investors, the funds will support business scaling, new product launches, and team expansion. Burro's robots assist in nurseries, vineyards, and farms, aiding in the movement of produce. CEO Charlie Andersen highlights goals of efficiency, expanding teams, and a recent product launch, Burro Grande, capable of carrying and towing heavier loads. Despite Philadelphia's lesser-known robotics presence, Burro aims for substantial growth, emphasizing local talent and envisioning a surge in similar companies. [Read More](#) (Technical.ly)

ZymoChem closes \$21M series A round led by breakout ventures with investments from lululemon and Toyota Ventures. ZymoChem, the developer of an environmentally friendly bio-manufacturing platform, has successfully concluded a \$21 million Series A funding round led by Breakout Ventures. Investors include lululemon athletica and Toyota Ventures, alongside existing backers like GS Futures and KdT Ventures. The funds, coupled with revenue from partnerships and support from the U.S. Department of Energy, will facilitate ZymoChem's launch of a high-performance material and the scaling of its initial collaborative product. ZymoChem's innovative approach, eliminating fossil fuels and carbon-intensive processes, attracted Toyota Ventures and aligns with lululemon's sustainability goals. The company aims to revolutionize the materials industry while fostering eco-friendly partnerships. [Read More](#) (PR Newswire)

Animal-free dairy pioneer Perfect Day raises up to \$90m & brings on new exec team to pursue profitability. Perfect Day, a leader in animal-free dairy tech, secured up to \$90 million in pre-Series E funding, shifting focus to B2B operations. Co-founders Ryan Pandya and Perumal Gandhi step down, with TM Narayan as interim CEO. The Urgent Company, Perfect Day's D2C arm, awaits acquisition by Superlatus. Narayan leads the new exec team, aiming for profitability and industry-shifting deals. 2024 plans include a major CPG partner launch and new molecules. Precision fermentation, highlighted by Perfect Day's moves, sees increased R&D and investment, with EU earmarking €50M for startups. [Read More](#) (Green Queen)

EIB funds Protix's insect-based protein production expansion with €37M. Protix, a Netherlands-based insect ingredient company, receives €37 million from the European Investment Bank to expand its sustainable protein production. Founded in 2009, Protix develops alternative proteins for pet food, aquaculture, livestock feed, and organic fertilizers, using food industry waste to feed insects. These insects are then processed into valuable nutrients like proteins and lipids, closing the food system loop. With an industrial-scale plant operational since 2019, Protix plans international expansion, exploring locations in Poland. [Read More](#) (Tech.eu)

Infinite Roots closes \$58m Series B funding round. Infinite Roots, formerly Mushlabs, closes a Series B funding round, securing \$58 million, the largest investment in mycelium tech in Europe. Led by Dr. Hans Riegel Holding, with EIC Fund support and contributions from REWE Group and Betagro Ventures, existing investors also participated. Mycelium fermentation technology is pivotal in plant-based and cell-based meat sectors, creating a unique food category. The funding will drive commercial growth, expanding production and launching globally. Infinite Roots aims to revolutionize the food system sustainably. CEO Mazen Rizk emphasizes collective efforts, while Dr. Hans Riegel Holding sees it as pivotal for sustainable food supply. EIC Fund looks forward to Infinite Roots' journey, aligning consumer appetite with planet and health concerns. [Read More](#) (FoodBev Media)

M&A

Next level burger acquires Veggie Grill to become North America's largest fast-casual Vegan Chain. Next Level Burger acquires Veggie Grill, marking a significant move in the US plant-based sector. The acquisition, led by Next Level Burger co-founder Matt de Gruyter, positions the company as the largest vegan fast-casual chain in North America, with 27 locations. It follows Veggie Grill's recent financial struggles and aims to revitalize the brand. Despite challenges in the wider plant-based industry, including closures of major players, de Gruyter remains optimistic, emphasizing the industry's growth potential. [Read More](#) (Green Queen)

CPG investor purchases vegan coffee creamer leader Nutpods. Nutpods, a US non-dairy coffee creamer brand, has been acquired by MPearlRock, a newly formed CPG investment arm, in the midst of increasing M&A activity in the plant-based sector. The acquisition aims to sustain Nutpods' growth and cement its position in the dairy alternatives market. Founded by Madeline Haydon in 2013, Nutpods specializes in almond- and coconut-based creamers, oat milks, and creamy cold brews. With a focus on health, taste, and texture, Nutpods has experienced significant sales growth, becoming a leading brand in both natural retail and non-dairy creamer segments. [Read More](#) (Green Queen)

EARNINGS

Strong Q4 sales for Freight Farms and its container farms. Freight Farms experienced a remarkable surge in orders during Q4 2023, marking an 83% year-on-year increase with 95 container farms ordered. Sequentially, orders spiked by 111% from Q3. CEO Rick Vanzura expressed satisfaction, noting orders surpassed projections, with backlog now representing roughly half of fiscal 2024's forecasted revenue. The proposed merger with Agrinam remains on track for Q1 2024 closure, with a projected combined market cap of \$147 million. [Read More](#) (Vertical Farming Today)

COMPANY NEWS

John Deere, Corteva Partner to deliver customized agronomic solutions to farmers. Corteva Agriscience and John Deere partner to simplify farmers' access to agronomic insights through the John Deere Operations Center. Integrating John Deere's farm equipment capabilities with Corteva's expertise results in precise, customized recommendations for equipment, sales representatives, and farmers. The collaboration aims to optimize productivity and sustainability by delivering data-driven insights tailored to individual farms. [Read More](#) (Global AgTech Initiative)

Kubota unveils fast-charging ‘New Agri Concept’ electric vehicle. Kubota North America Corporation reveals its 2030 vision, emphasizing innovation and technology integration across its global operations. Originating in Osaka, Japan, in 1890, the company operates worldwide. At CES 2024, company leaders introduced their next-gen equipment, merging AI, automation, and electrification. The New Agri Concept, an all-electric, multi-purpose vehicle, was showcased, alongside an immersive video illustrating Kubota's future direction. The video highlights AI-driven solutions for small-acreage growers, focusing on data collection, monitoring, automation, and water management. [Read More](#) (Farm Automation Today)

John Deere and SpaceX to help farmers overcome rural connectivity challenges. John Deere collaborates with SpaceX's Starlink for its SATCOM solution, addressing internet challenges in remote farming areas. With Starlink's expanding satellite network, currently comprising over 5,000 satellites and planning for 12,000 more, farmers gain reliable connectivity for machines. John Deere's solution integrates ruggedized Starlink terminals and 4G LTE modems for seamless machine-to-machine communication, enabling autonomy, real-time data sharing, and remote diagnostics. This advancement enhances operational efficiency, minimizes downtime, and offers broader opportunities for precision agriculture. [Read More](#) (Farm Automation Today)

Bayer shares fall nearly 6% on court order to pay \$2.25 bln in damages. Bayer's shares plummeted 5.7% after a Philadelphia court ordered the company to pay \$2.25 billion in damages over its Roundup weedkiller's alleged carcinogenic effects. The jury awarded the sum to a man claiming cancer due to glyphosate exposure. Bayer, having lost 70% value since acquiring Monsanto, faces financial strain and CEO Bill Anderson's restructuring efforts. While punitive damages may be reduced on appeal, Bayer, dealing with over 50,000 pending cases, remains committed to trial defenses amid challenges in its corn seed business and drug trials. [Read More](#) (Saltwire)

Reinke Irrigation and CropX debut first-of-its-kind pivot-mounted sensor to monitor field-specific crop water use. CropX Technologies partners with Reinke Irrigation to introduce Reinke Direct ET™, enhancing water management for farmers using center pivot irrigation. This innovation offers affordable Evapotranspiration (ET) measurements directly from the field, aiding precise irrigation decisions. Reinke Direct ET™ provides measured ET values without additional calculations, empowering farmers with daily insights into water needs. Reinke, a leading pivot manufacturer, aims to promote efficient water usage through this collaboration. [Read More](#) (Agritech Tomorrow)

RIP Foods closes its doors after four years, “It Was David Vs Goliath”. Barcelona-based B2B plant-based meat startup RIP Foods is closing after four years, citing financial difficulties and funding challenges. Despite creating high-quality plant-based meats, founder Kevin Forssmann highlights the industry's need for funding, with investors often prioritizing intellectual properties. RIP initially focused on plant-based chicken mince for HORECA but shifted to ready-to-cook products. It secured €625 thousand in 2022, expanding to the Netherlands and Germany. [Read More](#) (Vegconomist)

Mars opens \$42 million global R&D hub. Mars opened a \$42 million R&D hub focused on sustainable snacking innovations. The 44,000 sq. ft. facility features testing areas for nuts, recipes, and production processes. It also includes space for evaluating new technologies, initially showcasing sustainable oven tech. Mars aims for this hub to revolutionize snacking for the future. [Read More](#) (Food Business News)

Remilk receives no objections letter for sale of animal-free milk protein, heralding “New-Dairy Revolution” in Canada. Israeli biotech Remilk scores a historic feat! They've earned Canada's green light for their animal-free BLG protein, paving the way for dairy-free milk, ice cream, and more. This marks the first regulatory approval for such a protein in Canada. Remilk's protein, created through fermentation, skips the cows and boasts lower environmental impact. Previously approved in the US and Singapore, it aims to be "guilt-free indulgence" for consumers and a sustainable solution for food companies. [Read More](#) (Vegconomist)

Aleph Farms: Israel awards the world's first regulatory approval for cultivated beef. Aleph Farms, an Israeli company, has achieved global recognition by becoming the first to gain regulatory approval for cultivated beef. Israel joins Singapore and the US as the third country permitting the sale of cultured meat, with Aleph Farms' Black Angus Petit Steak set to enter the market. The approval signifies a significant step in the global effort to create sustainable and climate-friendly meat alternatives. Israel's strong support for alternative proteins, including cultivated meat, positions it as a leader in the field. [Read More](#) (Green Queen)

Chart 12: Aleph Farms Technology Delivers Sustainability and Scalability



Source: Intro-act, Aleph Farms Website

Food giant Nestlé announces new partnership to improve farmland resilience. Nestlé has partnered with The Allerton Project to support farmers and suppliers in implementing environmentally positive land management practices. Through farm visits and technical workshops, participants in Nestlé's agricultural programs, like Landscape Enterprise Networks (LENs), will receive tailored advice. LENs connect land-dependent businesses and farmers to collectively address landscape resilience. Nestlé aims to facilitate knowledge exchange and promote regenerative farming practices, acknowledging the importance of local contexts. [Read More](#) (Agronomist & Arable Farmer)

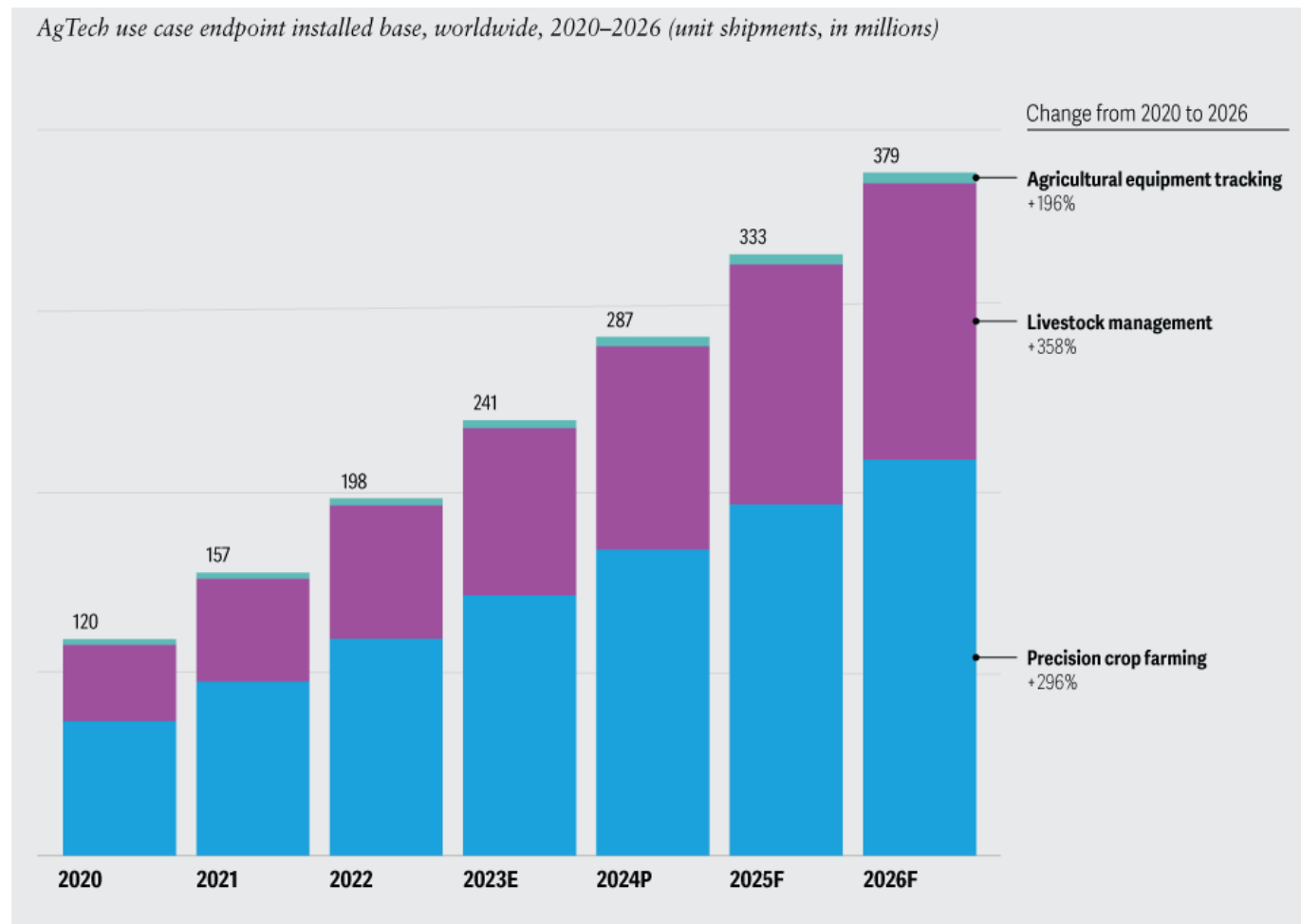
Morse Micro and Zetifi collaborate to extend long-range Wi-Fi capabilities. Morse Micro and Zetifi partner to bolster rural connectivity using Wi-Fi HaLow technology, aiming to revolutionize farming with smart, connected solutions. Zetifi's existing products, ZetiCell and ZetiRover, will integrate Morse Micro's Wi-Fi HaLow for extended range and improved connectivity. This collaboration enhances precision agriculture and prepares for autonomous machinery introduction, addressing coverage challenges in remote areas. Wi-Fi HaLow's low power consumption and extended range facilitate IoT connectivity, offering benefits like better penetration through obstacles. [Read More](#) (Farm Automation Today)

Beef 'agtech' company Cattler launches interface with Elanco for its benchmark program. Cattler collaborates with Elanco Animal Health to integrate Elanco Knowledge Solutions (EKS) services, such as Benchmark TM and Experior TM Data Services, into its platform. This partnership aims to provide Cattler customers with streamlined access to Elanco's trusted services, delivering continuous data to optimize cattle feeders' practices. Through this collaboration, Cattler aims to enhance user experience and offer actionable insights based on real-time data. [Read More](#) (AgriTech Tomorrow)

IRIDSENSE unveils the world's first laser device capable of analyzing plant health remotely. IRIDSENSE unveils the world's first 3D Multispectral LiDAR sensor at CES 2024, enabling real-time analysis of plant health and soil moisture remotely. The technology aims to enhance crop yields and resource management by optimizing irrigation and pesticide usage. It offers applications in industrial quality control and forest management as well. Through collaboration with GeoCue, IRIDSENSE plans to deploy this technology in Brazil to monitor plantation health. [Read More](#) (AgriTech Tomorrow)

AGTECH CHART OF THE MONTH

Chart 13: IoT Endpoints in Agriculture to Near 300 million by 2024 End



Source: Intro-act, Deloitte, Gartner. Notes: E denotes estimated values, P denotes predicted values, and F denotes forecasted values

COMMODITIES DASHBOARD

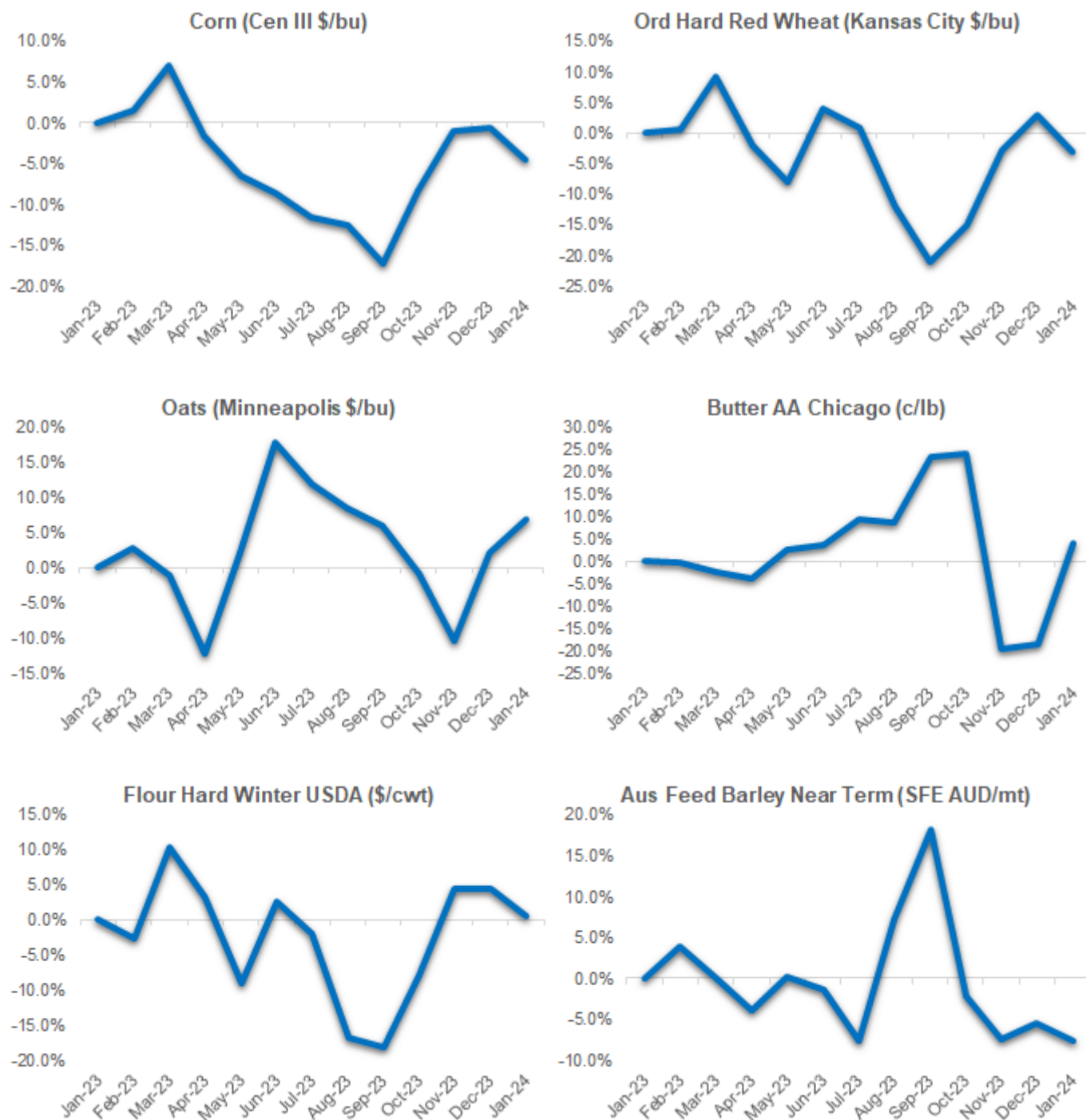
AGRICULTURAL COMMODITIES MARKETS

Chart 14: Agricultural Commodities Price Returns

Agricultural Commodities	Price as of 02/01/24	1M	3M	6M	1Y	YTD
Grains						
Corn (Cen Ill \$/bu)	4.42	▼ -3.71%	▼ -4.23%	▼ -20.97%	▼ -29.94%	▼ -3.71%
Corn (St. Louis Miss R \$/bu)	4.65	▼ -1.90%	▼ -3.63%	▼ -16.40%	▼ -29.08%	▼ -1.90%
Ord Hard Red Wheat (Kansas City \$/bu)	6.00	▼ -3.23%	▼ -0.37%	▼ -24.61%	▼ -23.92%	▼ -3.23%
Soft Red Wheat (St. Louis Miss R \$/bu)	6.03	▼ -4.78%	▲ 5.05%	▼ -0.74%	▲ 1.69%	▼ -4.78%
Dns/Ns Wheat 14 (Minneapolis \$/bu)	9.07	▼ -1.71%	▲ 1.45%	▼ -7.02%	▼ -0.30%	▼ -1.71%
Oats (Minneapolis \$/bu)	4.43	▼ -2.91%	▼ -1.50%	▲ 1.43%	▲ 13.75%	▼ -2.91%
Butter AA Chicago (c/lb)	276.50	▲ 3.75%	▼ -15.70%	▲ 3.17%	▲ 12.63%	▲ 3.75%
Flour Hard Winter USDA (\$/cwt)	18.15	▲ 3.42%	▲ 7.72%	▼ -13.37%	▼ -15.19%	▲ 3.42%
Aus Feed Barley Near Term (SFE AUD/mt)	298.50	▼ -2.93%	▼ -8.15%	▲ 1.70%	▼ -5.98%	▼ -2.93%
Softs						
Cocoa Ivory Coast New York (\$/mt)	4810.00	▲ 14.52%	▲ 25.92%	▲ 35.57%	▲ 59.96%	▲ 14.52%
Coffee Brazilian New York (c/lb)	188.99	▼ -3.19%	▲ 20.87%	▲ 19.00%	▲ 6.64%	▼ -3.19%
Coffee Colombian New York (c/lb)	212.12	▼ -3.42%	▲ 14.39%	▲ 11.57%	▼ -1.76%	▼ -3.42%
Sugar #11 World Raw New York (c/lb)	24.06	▲ 17.42%	▼ -11.25%	▼ -0.21%	▼ -3.99%	▲ 17.42%
Oils and Oil Seeds						
Corn Oil Food Grade (Degummed) Central US FOB-R (\$/ton)	52.00	▲ 0.00%	▲ 0.00%	▲ 0.00%	▲ 0.00%	▲ 0.00%
Soybean Oil Illinois FOB-T/R (c/lb)	48.60	▼ -3.49%	▼ -11.54%	▼ -32.36%	▼ -5.30%	▼ -3.49%
Livestock						
Broilers Composite Average 12-City (c/lb)	127.88	▲ 0.73%	▲ 13.04%	▲ 11.82%	▼ -10.60%	▲ 0.73%
Eggs Large White USDA (c/Dozen)	235.50	▲ 7.29%	▲ 102.15%	▲ 111.21%	▲ 111.21%	▲ 7.29%
Hogs Lean/Average Iowa/S Minn Lean Hog Index (c/lb)	72.38	▲ 11.27%	▼ -5.93%	▼ -31.65%	▼ -9.10%	▲ 11.27%
Pork Bellies Frozen 12-14 lbs. Chicago/Midwest (c/lb)	161.03	▲ 42.10%	▲ 22.62%	▼ -40.56%	▲ 84.46%	▲ 42.10%
Feeder Cattle Near Term (CME \$/lbs)	2.40	▲ 8.03%	▲ 1.03%	▼ -2.22%	▲ 0.41%	▲ 8.03%
Dairy						
Cheese Barrels CME (c/lb)	1520.00	▲ 8.57%	▼ -8.16%	▼ -18.72%	▲ 1.50%	▲ 8.57%
Cheese Blocks CME (c/lb)	1650.00	▲ 12.24%	▼ -2.08%	▼ -15.82%	▲ 16.20%	▲ 12.24%
Grade A Nonfat Dry Milk Chicago USDA (\$/lb)	1.23	▲ 5.13%	▲ 3.58%	▲ 7.19%	▲ 6.49%	▲ 5.13%

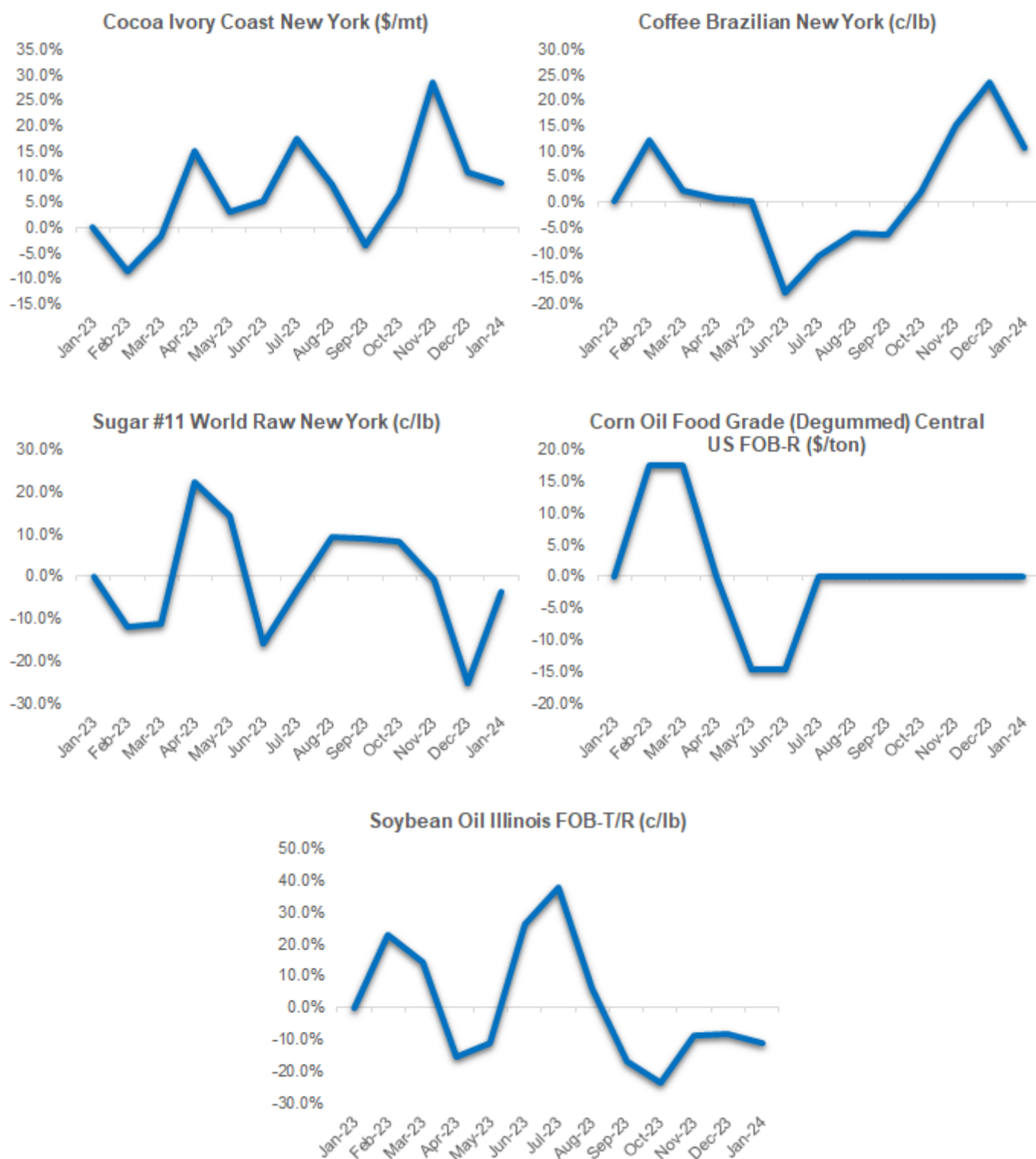
Source: Intro-act, FactSet. Data as of 02/01/2024

Chart 15: Indexed Change in Grain Prices Last 12 Months



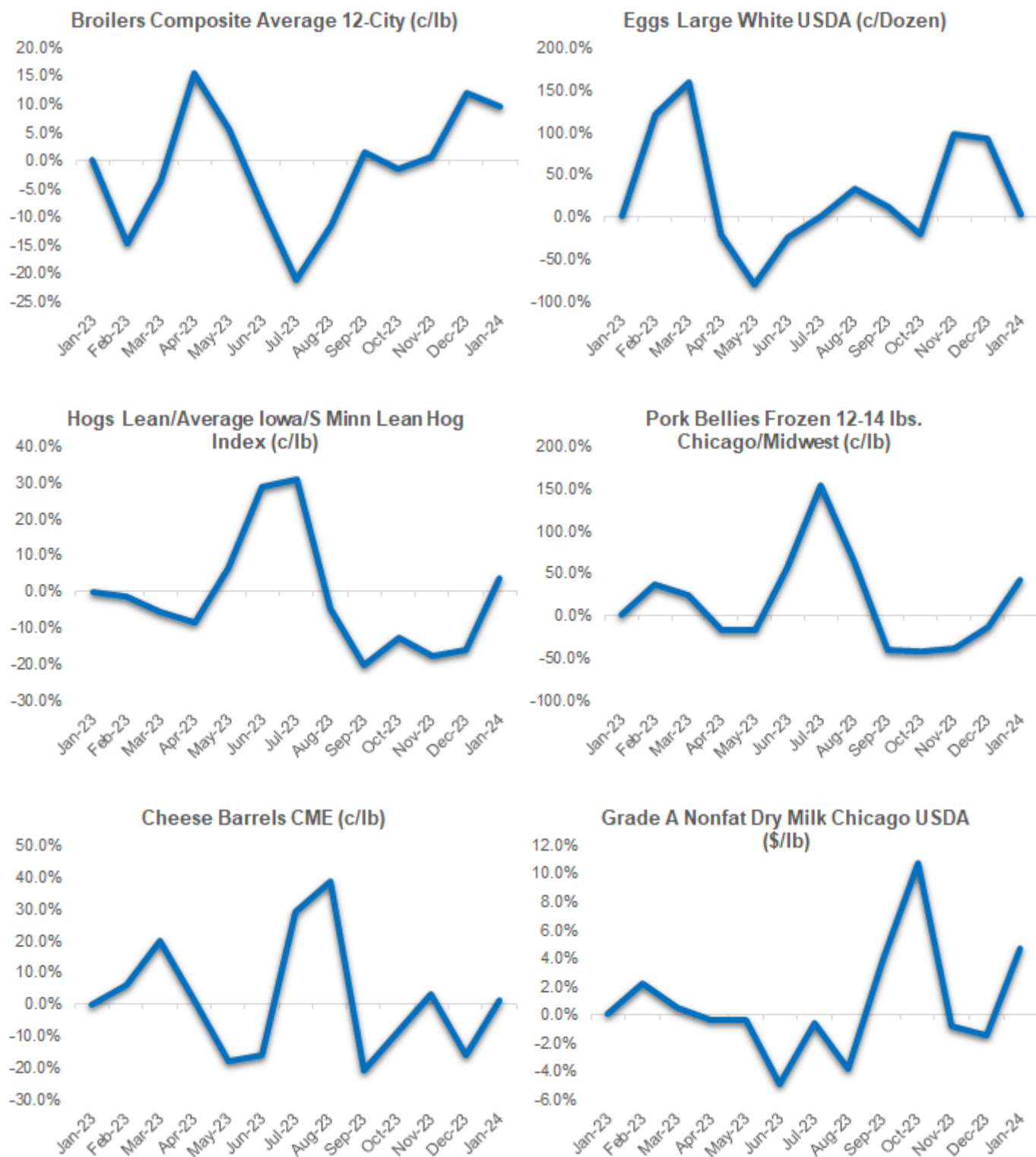
Source: Intro-act, FactSet. Data as of 02/01/2024

Chart 16: Indexed Change in Softs and Oil Seeds Prices Last 12 Months



Source: Intro-act, FactSet. Data as of 02/01/24.

Chart 17: Indexed Change in Livestock and Dairy Prices Last 12 Months



Source: Intro-act, FactSet. Data as of 02/01/2024

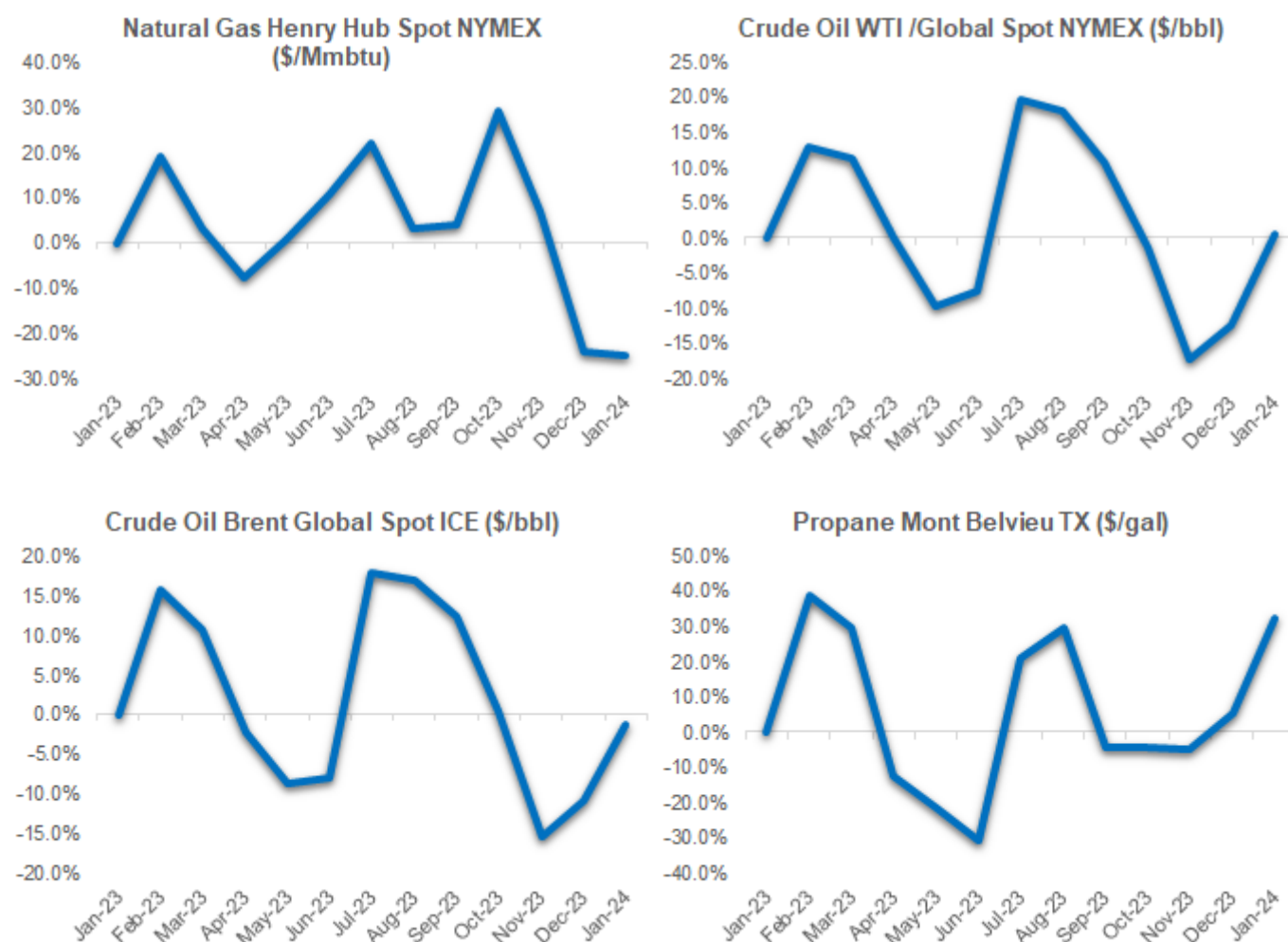
ENERGY COMMODITIES MARKETS

Chart 18: Energy Commodities Price Returns

Energy Commodities	Price as of 02/01/24	1M	3M	6M	1Y	YTD
Natural Gas and Crude Oil						
Natural Gas Henry Hub Spot NYMEX (\$/Mmbtu)	2.10	▼ -18.57%	▼ -37.10%	▼ -18.57%	▲ 0.05%	▼ -18.57%
Crude Oil WTI /Global Spot NYMEX (\$/bbl)	75.82	▲ 5.47%	▼ -7.13%	▼ -7.31%	▲ 11.32%	▲ 5.47%
Crude Oil Brent Global Spot ICE (\$/bbl)	80.53	▲ 3.66%	▼ -7.24%	▼ -5.50%	▲ 11.88%	▲ 3.66%
Propane Mont Belvieu TX (\$/gal)	0.89	▲ 26.61%	▲ 33.48%	▲ 22.41%	▲ 42.74%	▲ 26.61%
Refined Products						
Gasoline Conv Regular NY Harbor (\$/gal)	2.32	▲ 7.64%	▼ -5.07%	▼ -19.56%	▼ -8.36%	▲ 7.64%
Diesel No. 2 Low Sulfur NY Harbor (\$/gal)	2.83	▲ 11.93%	▼ -5.38%	▼ -5.41%	▲ 25.41%	▲ 11.93%
Heating Oil No. 2 NY Harbor (\$/gal)	2.75	▲ 12.64%	▼ -4.97%	▼ -2.03%	▲ 31.35%	▲ 12.64%
Jet Fuel Kerosene-Type U.S. Gulf Coast (\$/gal)	2.79	▲ 17.80%	▼ -2.89%	▼ -2.59%	▲ 33.24%	▲ 17.80%
Gasoil Near Term (IIFEU \$/mt)	855.00	▲ 13.89%	▼ -3.12%	▼ -2.54%	▲ 29.01%	▲ 13.89%
Ethanol Iowa (CRB \$/gallon)	1.52	▼ -6.25%	▼ -25.92%	▼ -37.91%	▼ -35.53%	▼ -6.25%
WTI USG 3:2:1 Crack Spread	24.26	▲ 24.87%	▲ 28.80%	▼ -42.21%	▼ -23.28%	▲ 24.87%

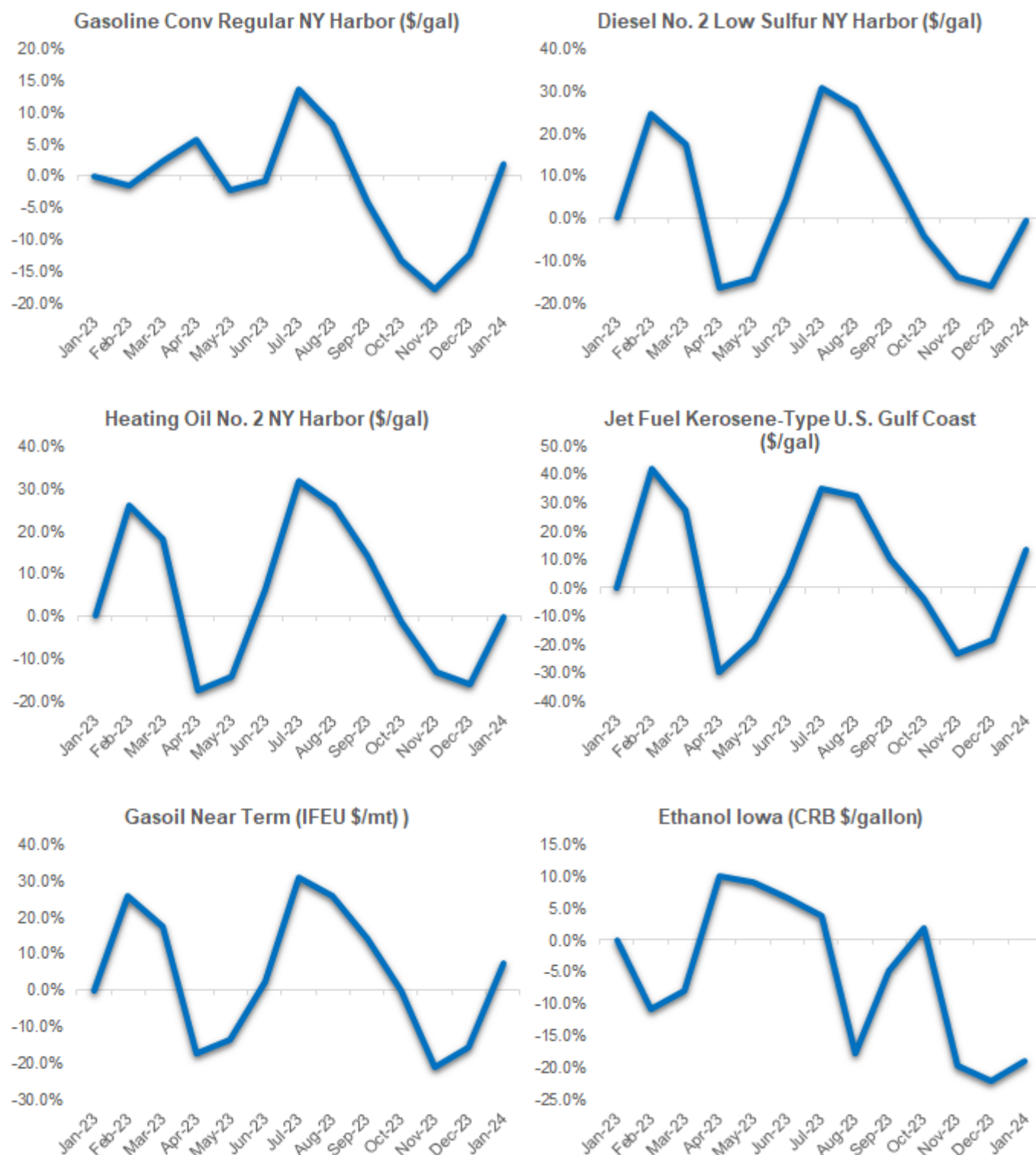
Source: Intro-act, FactSet. Data as of 02/01/2024

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



Source: Intro-act, FactSet. Data as of 02/01/2024

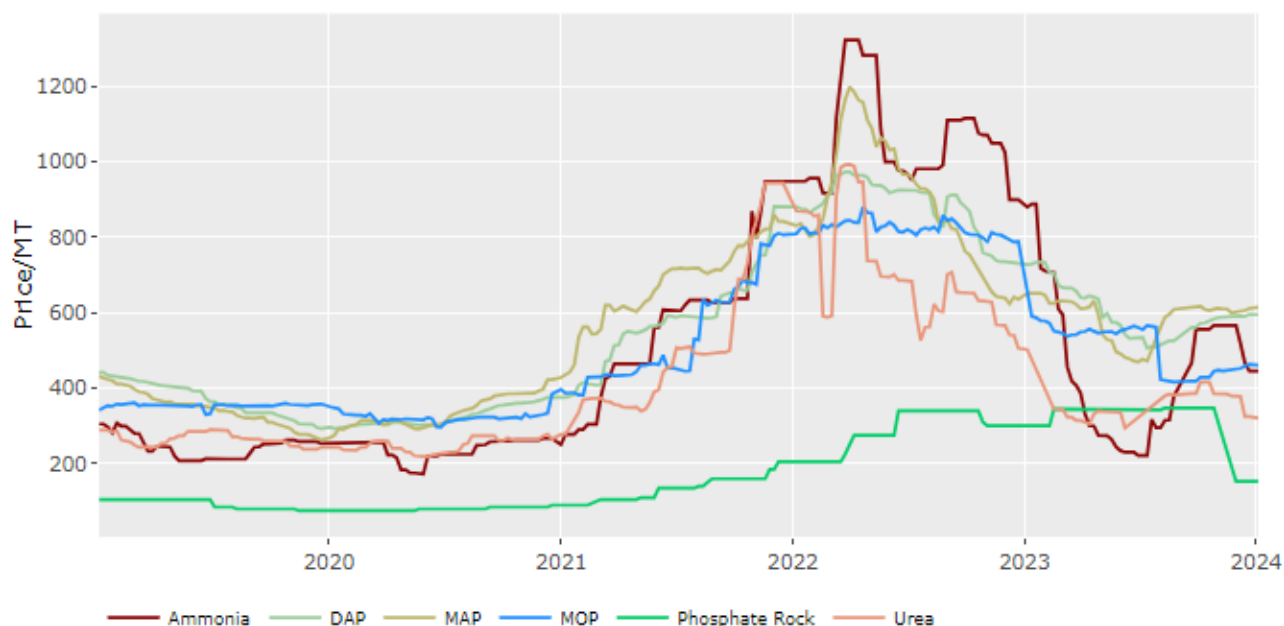
Chart 20: Indexed Change in Refined Fuel Prices Last 12 Months



Source: Intro-act, FactSet. Data as of 02/01/2024

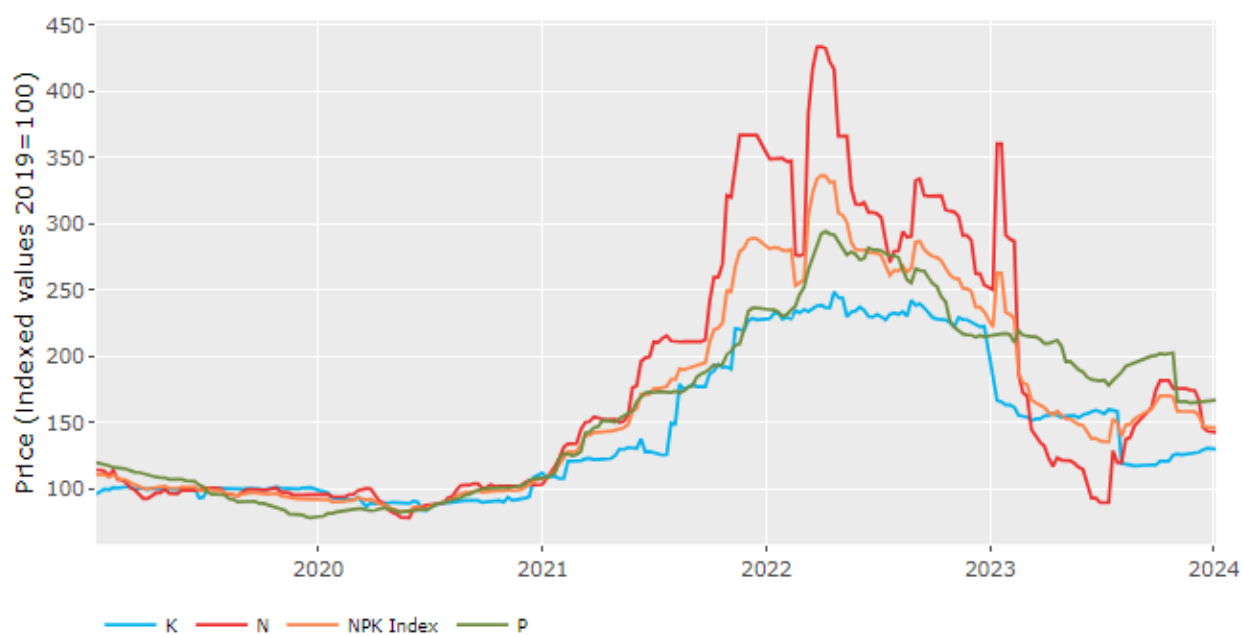
FERTILIZER MARKETS

Chart 21: Prices by Fertilizer Type (As of February 12, 2024)



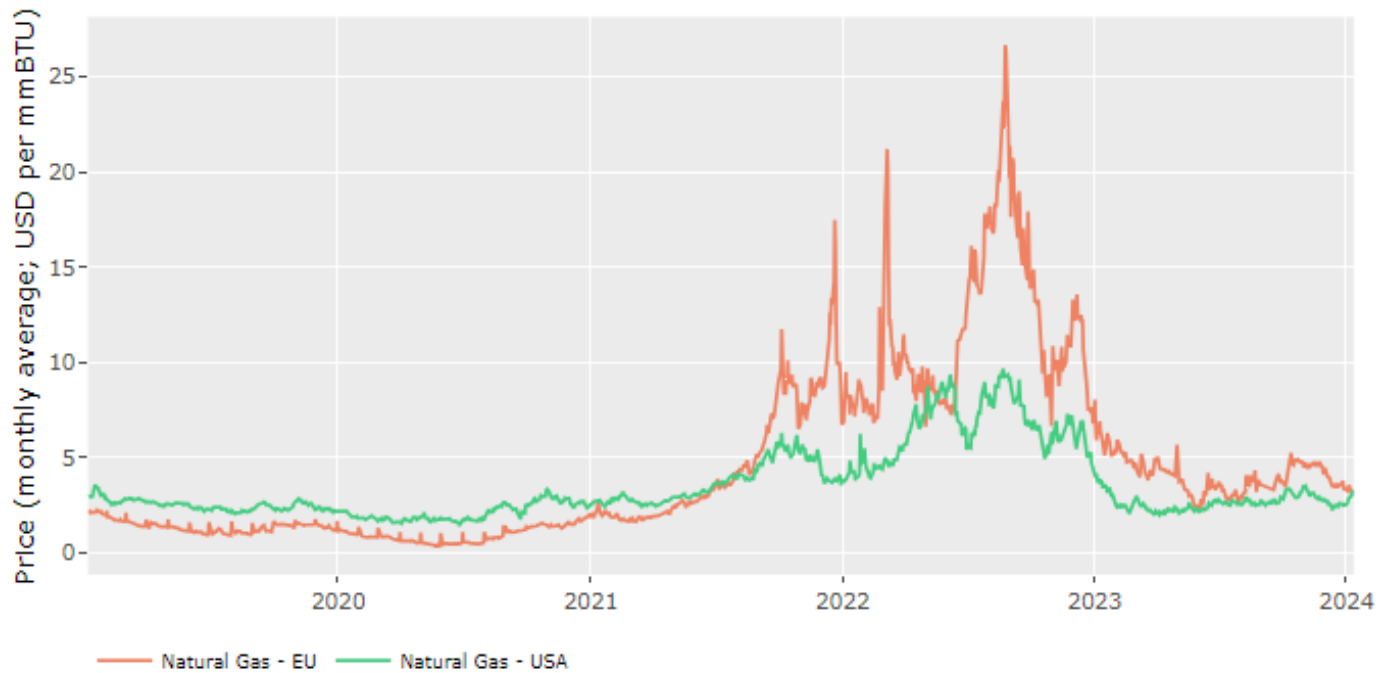
Source: Intro-act, Food Security Portal, Bloomberg

Chart 22: Prices by Nutrient (As of February 12, 2024)



Source: Intro-act, Food Security Portal, Bloomberg

Chart 23: Input Prices - Natural Gas (As of February 12, 2024)



Source: Intro-act, Food Security Portal, NY Mercantile, ICE

AGTECH CAPITAL MARKET ACTION (JANUARY 2024)

M&A Activity

Target	Target Industry	Target Country	Acquirer	Deal Size	Announcement Date
Advance Grass Solutions Ltd.	Chemicals: Agricultural	United Kingdom	Agrovista UK Ltd.	-	9-Jan-2024
Veggie Grill	Restaurants	United States	Next Level Burger	-	11-Jan-2024
Thunderbrook Equestrian Ltd.	Agricultural Commodities/Milling	United Kingdom	Stimulan BV	-	11-Jan-2024
Soulara	Food & Beverages	Australia	v2food	-	16-Jan-2024
Nutpods	Food and Beverage Services	United States	MPearlRock	-	18-Jan-2024
MACROS	Manufacturing	-	v2food	-	18-Jan-2024
Monticello Farm Service, Inc.	Agricultural Commodities/Milling	United States	Ceres Solutions Cooperative, Inc.	-	18-Jan-2024
Crop Health & Protection Ltd.	Miscellaneous Commercial Services	United Kingdom	Agri-EPI Centre Ltd.	-	22-Jan-2024
Rafiki Millers Ltd.	Agricultural Commodities/Milling	Kenya	Kitui Flour Mills Ltd.	-	22-Jan-2024
Star Seed, Inc.	Agricultural Commodities/Milling	United States	Heartwood Partners, LLC; NativeSeed Group	-	25-Jan-2024
Yolks Breakfast	Food and Beverage Services	Canada	Happy Belly Food Group Inc.	-	31-Jan-2024

Source: Intro-act, FactSet

PE/ VC Funding Activity

Company	Funding Round	Fund raised (\$m)	Investors	Date
Fasal	Series A	12.0	TDK Ventures, British International Investment (BII), ITI Growth Opportunities Fund, Navam Capital, Aureolis Ventures, 3one4 Capital, Omnivore, Wavemaker Partners, Genting Ventures, The Yield Labs Asia Pacific	02-01-2024
Wageningen University and Research	Grant	5.0	Bezos Earth Fund, Global Methane Hub	02-01-2024
Perfect Day	Pre-series E	90.0	-	08-01-2024
Picnic	-	388.0	-	09-01-2024
Philly	-	24.0	Catalyst Investors, Translink Capital, S2G Ventures, Toyota Ventures, F-Prime Capital, Cibus Capital	09-01-2024
Fa Bio	-	4.8	European venture capital firms, Clean Growth Fund, Pymwyc	09-01-2024
Mogu	Series A	10.0	CDP Venture Capital, ECBF VC, Kering Ventures	09-01-2024
Standing Ovation	Gov. Grant	2.7	French Government, Bpifrance	09-01-2024
Burro	Series B	24.0	Catalyst Investors, Translink Capital, S2G Ventures, Toyota Ventures, F-Prime Capital, Cibus Capital, Brian Rich, Catalyst Investors, Translink Capital	09-01-2024
Nasekomo	Series A	7.3	Invenio Partners	11-01-2024
Enifer	Grant	10.9	Business Finland	11-01-2024
Bevvy	Seed	1.5	-	11-01-2024
The human Touch Robotics	Seed	1.9	ProVenture, Voima Ventures	11-01-2024
KisanKonnnect	Pre-series A	3.7	Green Frontier Capital, Dhanuka Agritech Limited. VC Grid	15-01-2024
ZymoChem	Series A	21.0	Breakout Ventures, lululemon athletica, inc., Toyota Ventures, GS Futures, KdT Ventures, Cavallo Ventures	16-01-2024
DayaTani	Seed	2.3	KBI Investment, Ascent Venture Group, Northstar Ventures, BRI Ventures, Gentree Fund	16-01-2024
Mediterranean Food Lab	Series A	17.0	Gullspång Re:food, PeakBridge, Arancia International, FoodBridge	17-01-2024
Better Juice	Series A	-	Ingredion Ventures	17-01-2024
Farm-ng	Series A	10.0	Acre Venture Partners, Xplorer Capital, HawkTower	18-01-2024
Intelligent Growth Solutions	Series C	20.5	COFRA Holding AG, DC Thomson, S2G Ventures, Cleveland Avenue LLC, Ospraie Ag Science, ScottishEnterprise	18-01-2024
Protix	-	33.7	European Investment Bank (EIB)	22-01-2024
Kaffe Bueno	Series A	5.6	Borregaard, European Innovation Council Fund (EIC Fund), Dalgaard Group, EIFO, PINC, The Yield Lab	22-01-2024
Bluewhite	Series C	35.5	Insight Partners, Alumni Ventures, LIP Ventures, Entrée Capital, Jesselson, Peregrine Ventures	23-01-2024
Crysp Farms	Series A	2.3	Gate Capital	23-01-2024
Verdify	-	2.2	Goeie Grutten Impact Fund, Oost NL, Koppert Cress, De Smaakmaker	24-01-2024

Elo Life Systems	Series A	20.5	DCVC Bio, Novo Holdings, Hanwha Next Generation Opportunity Fund, AccelR8, Alexandria Venture Investments	24-01-2024
Vegemi	-	0.5	Stefan Lindberg, Sophia Ehrnrooth, Matti Kukkonen, Tradeka Cooperative, Heino Group	24-01-2024
Corral Technologies	-	1.4	Chicago-based M25, Grit Road Partners, Invest Nebraska	24-01-2024
Infinite Roots	Series B	58.0	Dr. Hans Riegel Holding, REWE Group, Betagro Ventures, Clay Capital, FoodLabs, Redalpine, Simon Capital, Happiness Capital	25-01-2024
C16 Biosciences	Grant	3.5	Bill and Melinda Gates Foundation	25-01-2024
Aqua Exchange	Series A	6.0	Ocean 14 Capital Fund	25-01-2024
Chef Robotics	-	14.8	MaC Venture Capital, MFV Partners, Interwoven Ventures, Alumni Ventures, Construct Capital, Kleiner Perkins, Promus Ventures, Red and Blue Ventures	26-01-2024
Voyage Foods	-	22.0	Valor Equity Partners, Horizons Ventures, UBS O'Connor, Level One Fund	29-01-2024
Saga Robotics	-	11.5	Nysnø Climate Investment, Aker, Rabo Ventures, Hatteland, Melesio Capital, Sanden, Songa Investments	29-01-2024
Alt. Leather	-	1.1	TStartmate, The Austin Group, Wollemi Capital Group, LaunchVic's Alice Anderson Fund	29-01-2024
Yume	Seed	2.0	Climate Tech Fund, Early-Stage Fund 2, Club Investible syndicate, LaunchVic, Goodrich Group, Veolia, Pitzy Folk	30-01-2024
Agrow Analytics	Seed	0.6	GoHub Ventures, Demium Capital, First Drop	30-01-2024
Inspira farms Cooling	-	0.9	Foundation for Clean Energy and Energy Inclusion for Africa	30-01-2024
Inari	-	103.0	Hanwha Impact, Canada Pension Plan Investment Board (CPP Investments), Rivas Capital, NGS Super, State of Michigan Retirement System, Flagship Pioneering, RCM Private Markets fund	31-01-2024
Foodsmart	Series C	10.0	American College of Cardiology, Glen Tullman's 62 Ventures	31-01-2024
Planet A Foods	Series A	15.4	climate VC World Fund, Omnes Capital, Cherry Ventures, Mudcake, Nucleus Capital, TriplePoint Capital, Feast Ventures	01-02-2024
Izote Biosciences	-	2.6	Embark Ventures, EGB Capital, Bee Partners, FTW Ventures, Nucleus Capital, Courtyard Ventures, Climate Capital Bio, Redstick Ventures. Bee Partners	01-02-2024
Aquaconnect	Pre-series B	4.0	S2G Ventures	01-02-2024
COLIPI	Seed	1.6	High-Tech Gründerfonds (HTGF), Innovationsstarter Fonds Hamburg (IFH), Nidobirds Ventures GmbH, Stefan De Loecker	02-02-2024
Traive	-	20.0	Banco do Brasil	05-02-2024
Jua	-	16.0	468 Capital, Green Generation Fund, Promus Ventures, Kadmos Capital, Flix Mobility founders	05-02-2024
Heura Foods	Series B	36.4	Upfield, Unovis Asset Management, the European Circular Bioeconomy Fund, New Tree Impact	06-02-2024
Starship Technologies	-	90.0	Plural, Iconical	06-02-2024

Source: Intro-act

AGTECH INSTITUTIONAL INVESTOR LEAGUE

Chart 24: Agtech Institutional Owners League (Current)

Rank	Institution Name	Invested in Agtech (\$)	Q/Q Change (\$)	# Agtech Positions	% of Instit Ownership
1	The Vanguard Group, Inc.	148,814,937,591	(6,906,821,456)	260	11.5%
2	BlackRock Fund Advisors	82,784,918,591	(995,751,095)	243	6.4%
3	SSgA Funds Management, Inc.	60,696,258,479	(3,825,101,499)	276	4.7%
4	Geode Capital Management LLC	30,365,955,403	(819,346,220)	224	2.3%
5	Capital Research & Management Co. (World Investors)	28,042,718,052	(855,837,005)	31	2.2%
6	Wellington Management Co. LLP	19,669,089,281	(1,594,240,412)	84	1.5%
7	T. Rowe Price Associates, Inc. (Investment Management)	18,101,186,814	(973,666,105)	72	1.4%
8	BlackRock Investment Management (UK) Ltd.	17,404,961,222	(2,013,259,075)	171	1.3%
9	BlackRock Advisors (UK) Ltd.	15,971,014,514	(1,026,153,161)	221	1.2%
10	Fidelity Management & Research Co. LLC	15,303,834,766	(1,006,075,901)	144	1.2%
11	Northern Trust Investments, Inc.(Investment Management)	15,224,310,034	(254,307,907)	215	1.2%
12	State Farm Investment Management Corp.	14,916,772,365	115,831,711	10	1.2%
13	Dimensional Fund Advisors LP	13,913,036,948	(387,755,462)	271	1.1%
14	Charles Schwab Investment Management, Inc.	12,953,663,219	(364,694,746)	206	1.0%
15	Capital Research & Management Co. (International Investors)	11,252,700,826	(193,297,601)	23	0.9%
16	JPMorgan Investment Management, Inc.	10,011,056,438	(1,027,449,673)	147	0.8%
17	Massachusetts Financial Services Co.	9,918,709,836	(1,669,209,825)	36	0.8%
18	UBS Asset Management Switzerland AG	9,504,683,235	(1,442,166,546)	147	0.7%
19	Legal & General Investment Management Ltd.	8,842,721,555	(536,362,748)	197	0.7%
20	Invesco Capital Management LLC	7,495,912,749	(226,945,043)	185	0.6%
21	Credit Suisse Asset Management (Schweiz) AG	7,104,413,368	(556,126,214)	183	0.5%
22	Morgan Stanley Smith Barney LLC (Investment Management)	6,702,125,859	(276,222,814)	109	0.5%
23	Managed Account Advisors LLC	6,699,675,942	(249,532,681)	66	0.5%
24	AllianceBernstein LP	6,542,680,855	(791,511,093)	170	0.5%
25	Columbia Management Investment Advisers LLC	6,481,260,774	(619,674,802)	117	0.5%
	Others	711,847,614,327	(56,748,978,983)	68,733	54.9%
	TOTAL	1,296,566,213,043	(85,244,656,356)	72,541	100%

Source: Intro-act, 13F Filings

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

Rank	Institution Name	Invested in Agtech (\$)	Q/Q Change (\$)	# Agtech Positions	% of Instit Ownership
1	State Street Global Advisors Ltd.	3,766,427,637	1,197,229,833	225	0.3%
2	Comerica Bank (Investment Management Texas)	490,850,312	490,850,312	80	0.0%
3	Citadel Advisors LLC	2,438,959,166	484,507,406	70	0.2%
4	Pacer Advisors, Inc.	1,137,607,106	443,903,826	71	0.1%
5	Dodge & Cox	1,977,804,039	405,514,897	12	0.2%
6	Envestnet Asset Management, Inc.	2,646,890,816	355,833,171	72	0.2%
7	Generation Investment Management LLP	348,711,723	348,711,723	1	0.0%
8	Assenagon Asset Management SA (Germany)	812,080,853	313,220,956	124	0.1%
9	Permodalan Nasional Bhd.	381,127,954	308,061,225	1	0.0%
10	Winslow Capital Management LLC	307,623,373	292,934,728	5	0.0%
11	Wealth Enhancement Advisory Services LLC	301,454,765	267,014,861	50	0.0%
12	Pzena Investment Management LLC	590,003,209	257,943,927	16	0.0%
13	NBC Global Finance Ltd.	306,194,714	235,037,446	18	0.0%
14	Amundi Asset Management US, Inc.	4,841,359,079	221,348,946	71	0.4%
15	Public Investment Corporation (SOC) Ltd.	220,709,199	220,709,199	2	0.0%
16	First Republic Investment Management, Inc.	641,038,898	217,048,067	41	0.0%
17	Qube Research & Technologies Ltd.	1,035,121,452	209,456,976	67	0.1%
18	Van Eck Associates Corp.	2,488,370,092	203,612,549	131	0.2%
19	Fisher Asset Management LLC	5,107,468,275	203,231,195	38	0.4%
20	CI Investments, Inc.	636,086,451	200,034,073	48	0.0%
21	QRG Capital Management, Inc.	198,052,016	198,052,016	38	0.0%
22	Millennium Management LLC	2,910,019,674	196,145,833	96	0.2%
23	Vaughan Nelson Investment Management LP	265,534,759	187,973,040	11	0.0%
24	Ossiam SA	338,402,913	180,778,969	52	0.0%
25	UBS Asset Management (UK) Ltd.	4,393,650,614	176,413,658	178	0.3%

Source: Intro-act, 13F Filings

Chart 26: Top 25 Agtech Sellers (Q/Q)

Rank	Institution Name	Invested in Agtech (\$)	Q/Q Change (\$)	# Agtech Positions	% of Instit Ownership
1	The Vanguard Group, Inc.	148,814,937,591	(6,906,821,456)	260	11.5%
2	SSgA Funds Management, Inc.	60,696,258,479	(3,825,101,499)	276	4.7%
3	BlackRock Investment Management (UK) Ltd.	17,404,961,222	(2,013,259,075)	171	1.3%
4	Life Insurance Corporation of India (Investment Portfolio)	983,109,531	(1,825,810,479)	2	0.1%
5	Massachusetts Financial Services Co.	9,918,709,836	(1,669,209,825)	36	0.8%
6	Wellington Management Co. LLP	19,669,089,281	(1,594,240,412)	84	1.5%
7	UBS Asset Management Switzerland AG	9,504,683,235	(1,442,166,546)	147	0.7%
8	First Sentier Investors (Australia) IM Ltd.	14,953,713	(1,367,858,057)	8	0.0%
9	Union Investment Privatfonds GmbH	1,018,945,163	(1,169,203,010)	5	0.1%
10	JPMorgan Investment Management, Inc.	10,011,056,438	(1,027,449,673)	147	0.8%
11	BlackRock Advisors (UK) Ltd.	15,971,014,514	(1,026,153,161)	221	1.2%
12	Fidelity Management & Research Co. LLC	15,303,834,766	(1,006,075,901)	144	1.2%
13	BlackRock Fund Advisors	82,784,918,591	(995,751,095)	243	6.4%
14	Voya Investment Management Co. LLC	1,778,518,810	(977,371,911)	139	0.1%
15	T. Rowe Price Associates, Inc. (Investment Management)	18,101,186,814	(973,666,105)	72	1.4%
16	State Board of Administration of Florida Retirement System	1,268,637,444	(883,136,361)	78	0.1%
17	Alecta Pension Insurance Mutual	433,046,860	(857,009,847)	2	0.0%
18	Capital Research & Management Co. (World Investors)	28,042,718,052	(855,837,005)	31	2.2%
19	Goldman Sachs Asset Management BV	8,725,851	(853,315,565)	1	0.0%
20	Geode Capital Management LLC	30,365,955,403	(819,346,220)	224	2.3%
21	AllianceBernstein LP	6,542,680,855	(791,511,093)	170	0.5%
22	Impax Asset Management Ltd.	3,456,173,000	(781,412,612)	24	0.3%
23	Nikko Asset Management Co., Ltd.	4,510,358,124	(776,631,800)	58	0.3%
24	Schroder Investment Management Ltd.	4,159,863,662	(716,865,133)	75	0.3%
25	Artisan Partners LP	1,698,938,387	(709,676,300)	17	0.1%

Source: Intro-act, 13F Filings

ETF SPOTLIGHT

iShares Emergent Food and AgTech Multisector ETF (IVEG)

Closing Price (\$)	CUSIP	Expense Ratio	Inception
18.56	46436E395	0.47	25/04/2022
AUM (\$ million)	Shares Outstanding (#)	Fund Flows (1M, \$)	Fund Flows (YTD, \$)
47.2	2,50,000	-	-

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 1/31/2024)

1 Year	3 Year	5 Year	Since Inception
-13.8%	-	-	-11.74%

ETF Returns Cumulative (As of 1/31/2024)

1 Month	3 Month	YTD	Since Inception
-4.44%	7.28%	-4.44%	-19.68%

Top 10 Holdings (updated as of 02/09/24)

Holdings	% Allocation	Market Value
CORTEVA INC	4.81%	\$ 224,316.00
TRIMBLE INC	4.50%	\$ 209,462.39
WATERS CORP	4.41%	\$ 205,636.34
CNH INDUSTRIAL N.V. NV	4.36%	\$ 203,317.53
ECOLAB INC	4.25%	\$ 198,260.16
INTERNATIONAL FLAVORS & FRAGRANCES	4.19%	\$ 195,373.36
DEERE	4.19%	\$ 195,220.48
CF INDUSTRIES HOLDINGS INC	4.16%	\$ 193,638.40
DANONE SA	4.12%	\$ 192,045.39
WESTROCK	4.11%	\$ 191,675.00

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
10.74	37954Y178	0.5	12/07/2021
AUM (\$ million)	Shares Outstanding (#)	Fund Flows (1M, \$)	Fund Flows (YTD, \$)
45.3	4,29,824	(116,569.13)	(116,569.13)

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 1/31/2024)

1 Year	3 Year	5 Year	Since Inception
-38.00%	-	-	-29.03%

ETF Returns Cumulative (As of 1/31/2024)

YTD	1 Month	3 Months	Since Inception
-4.11%	-4.11%	4.25%	-58.38%

Top 10 Holdings (updated as of 02/09/2024)

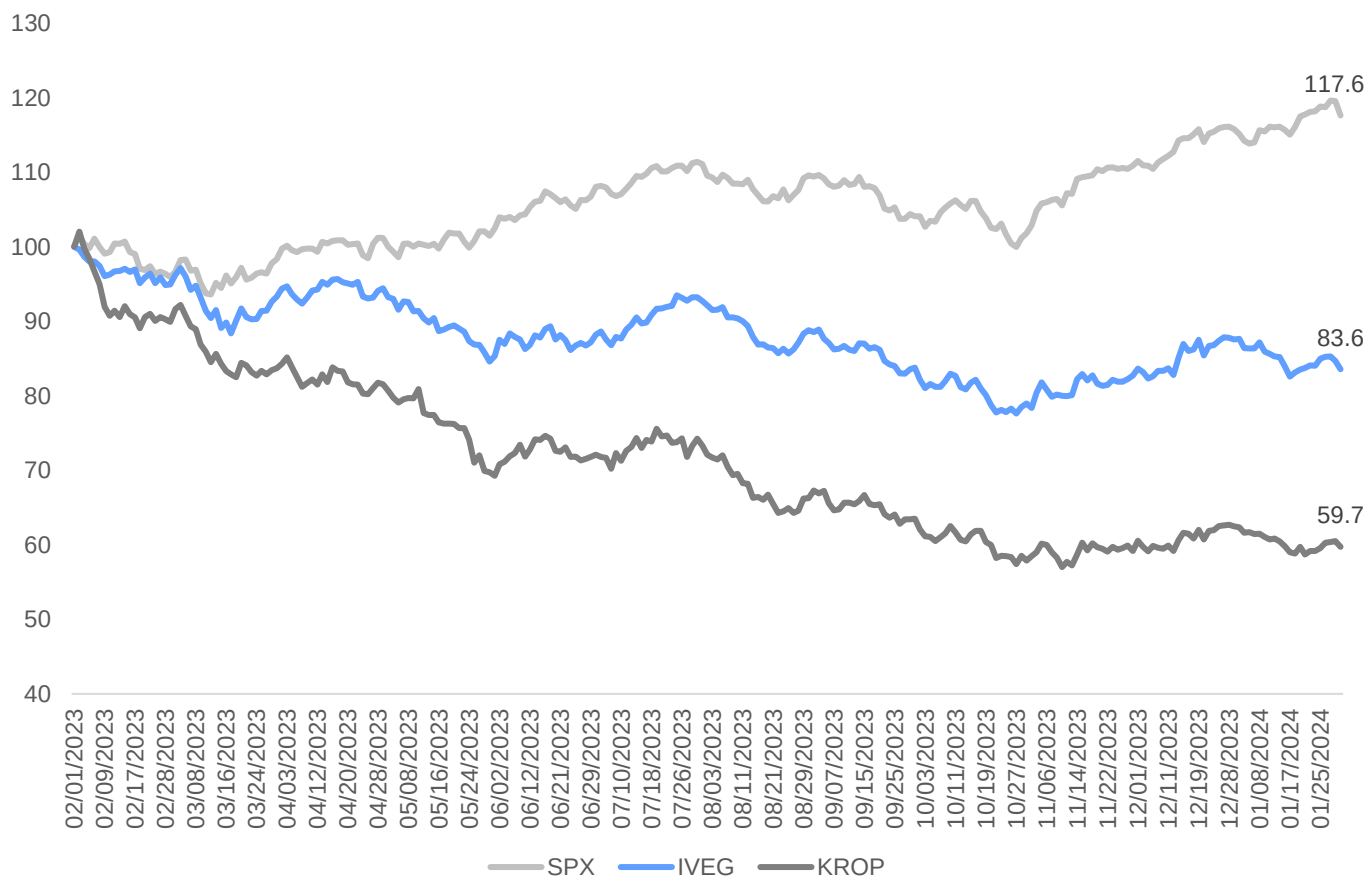
Holdings	% Allocation	Market Value
CORTEVA INC	13.42%	\$ 598,765.60
KUBOTA CORP	12.14%	\$ 541,539.29
DEERE & CO	11.85%	\$ 528,467.94
NUTRIEN LTD	10.10%	\$ 450,535.14
CNH INDUSTRIAL NV	5.30%	\$ 236,311.14
HEBEI YANGYUAN-A	4.58%	\$ 204,347.59
AGCO CORP	4.34%	\$ 193,382.24
FMC CORP	4.25%	\$ 189,715.50
UNILEVER PLC	4.14%	\$ 184,761.79
CHENG DE LOLO CO LTD-A	3.84%	\$ 171,142.31

Source: Intro-act, FactSet

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

12-MONTH ETF PERFORMANCE

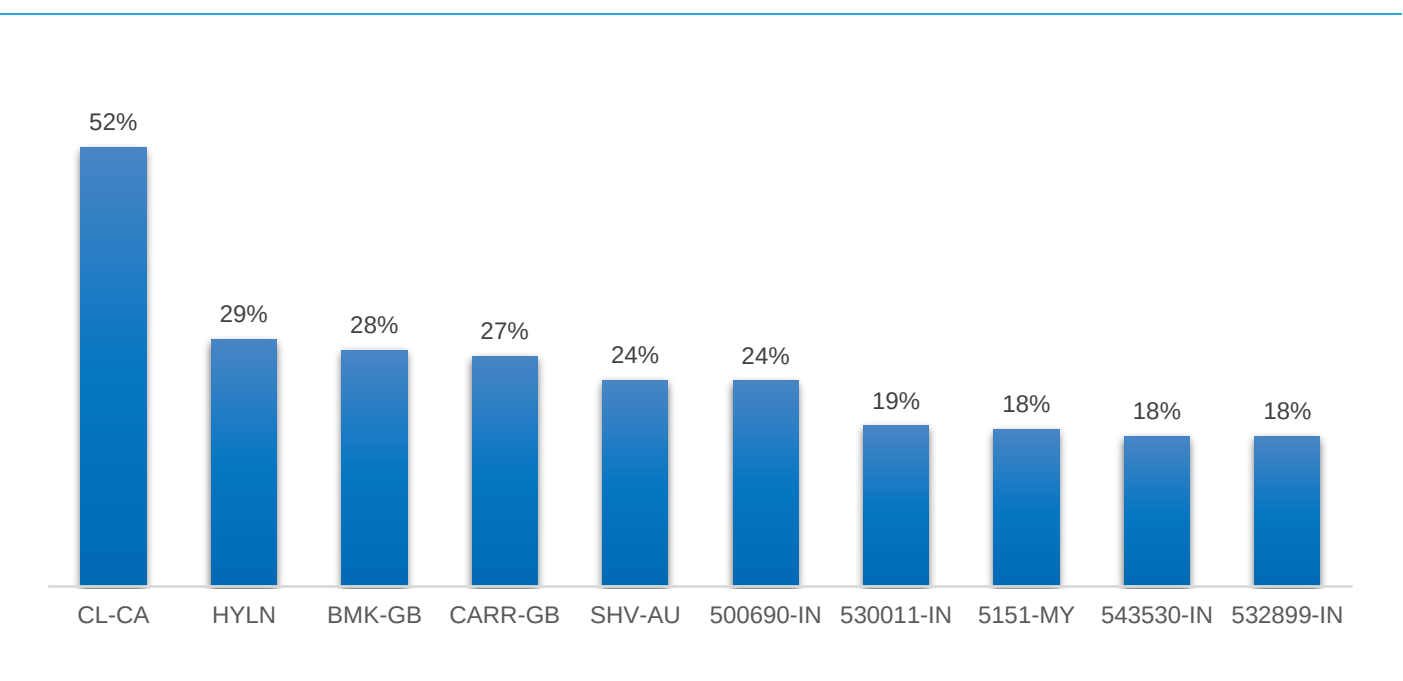
Chart 27: IVEG, KROP vs SPX



Source: Intro-act, FactSet

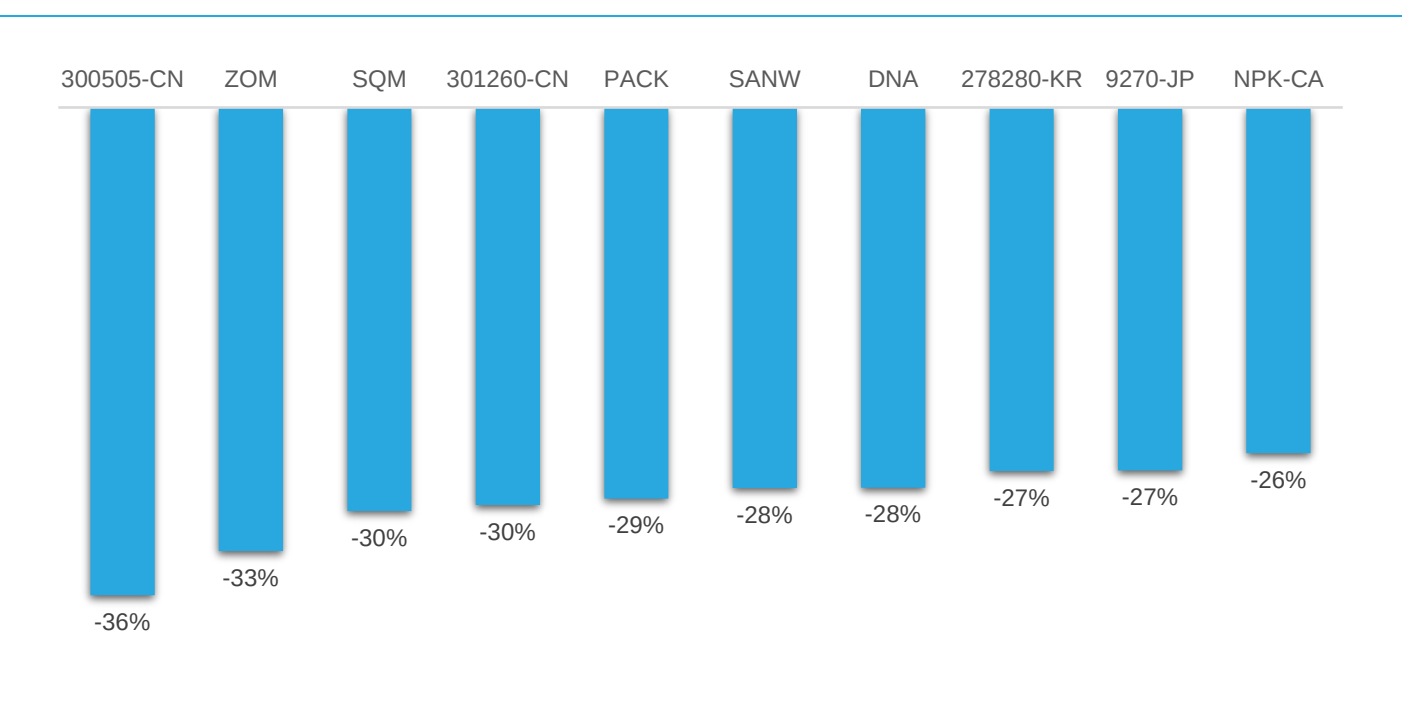
GAINERS AND LOSERS – AGTECH STOCKS

Chart 28: Top 10 M/M Agtech Gainers (January 2024)



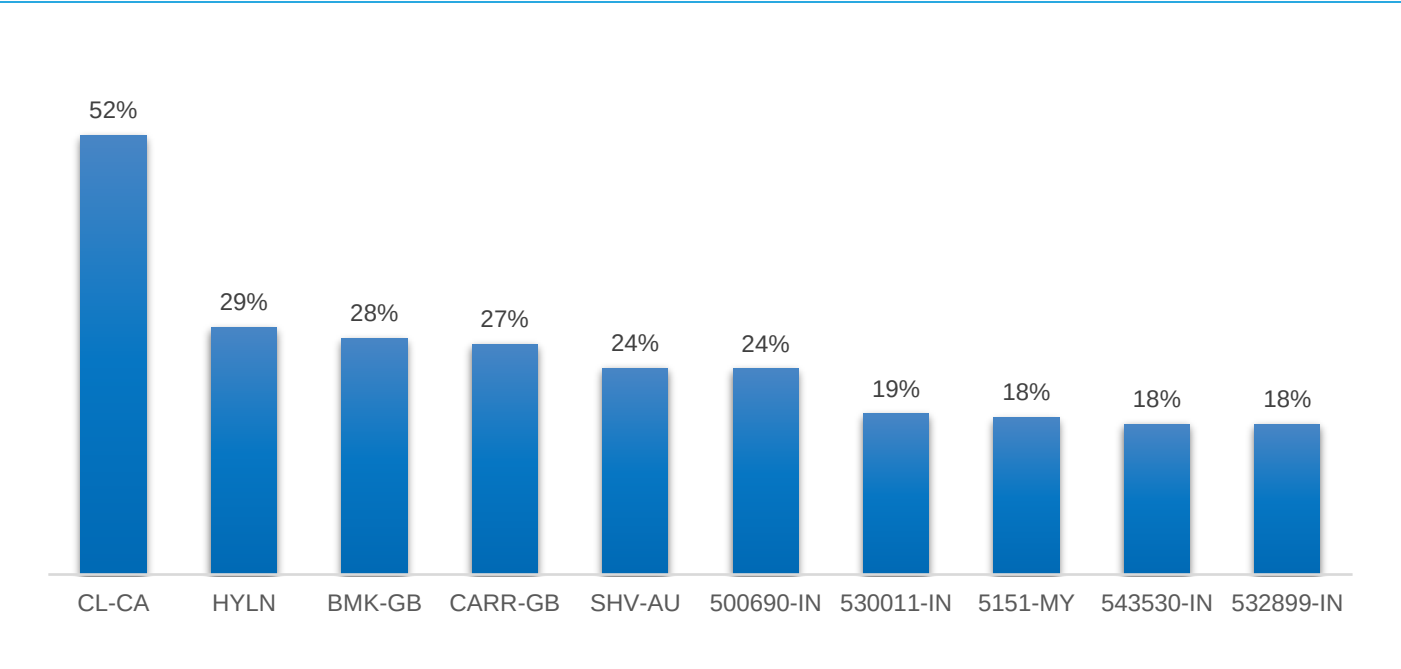
Source: Intro-act, FactSet

Chart 29: Top 10 M/M Agtech Losers (January 2024)



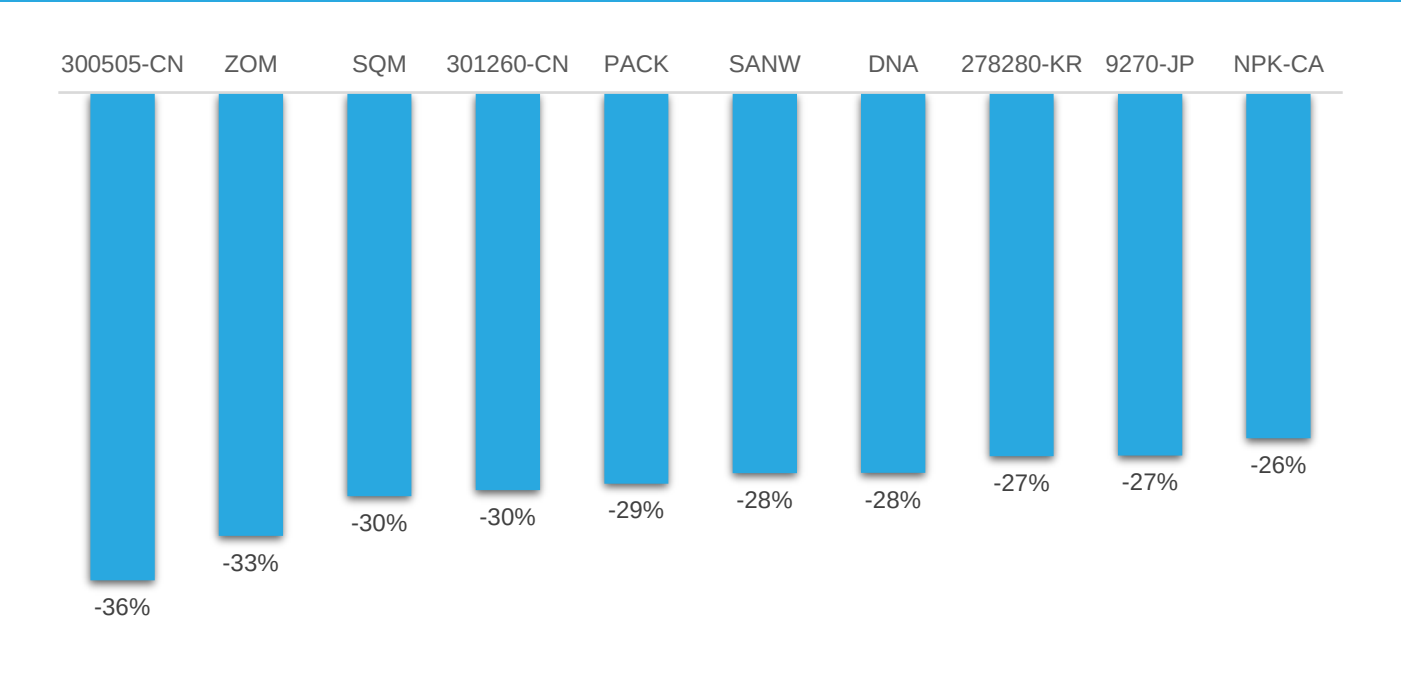
Source: Intro-act, FactSet

Chart 30: Top 10 YTD Agtech Gainers



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

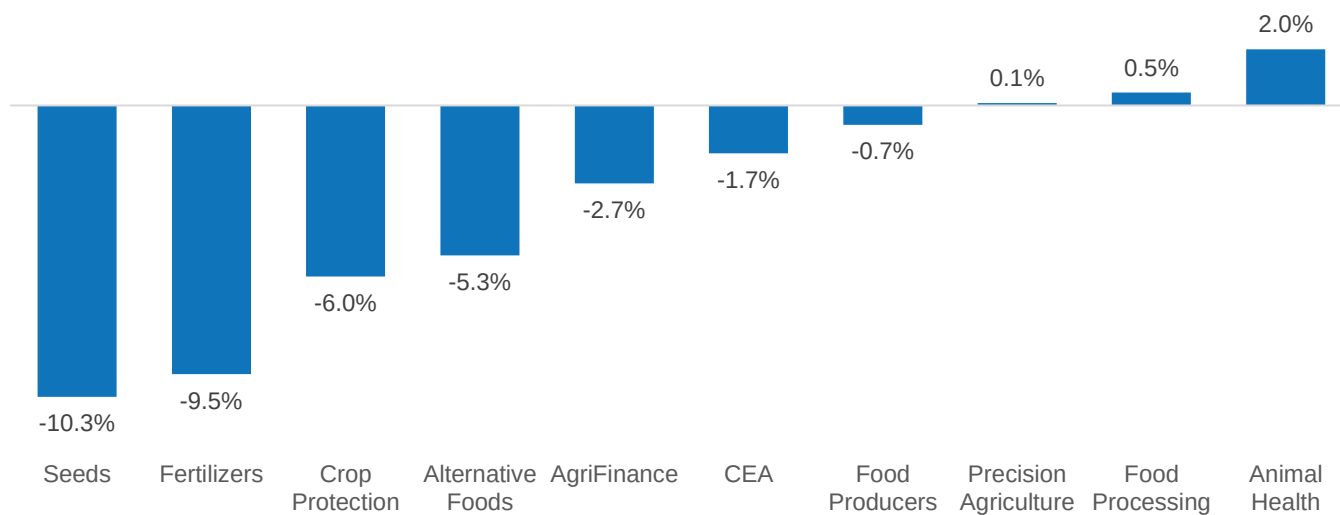
Chart 31: Top 10 YTD AgTech Losers



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

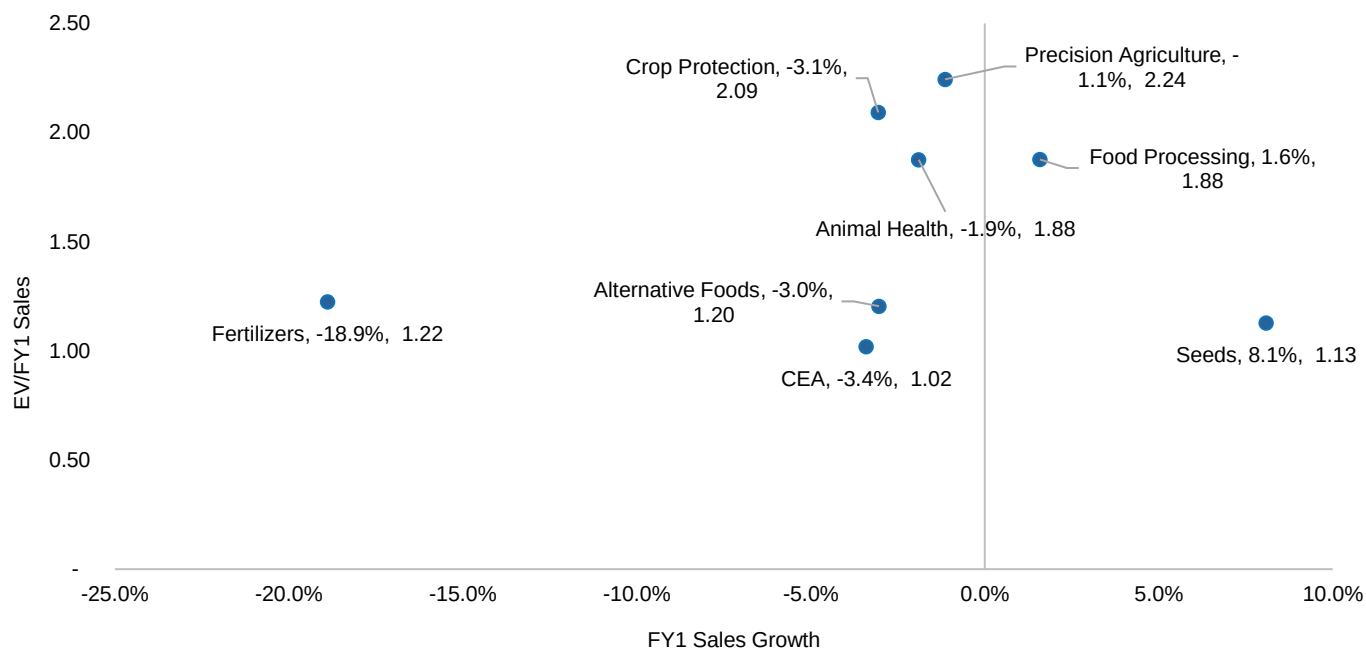
SEGMENT RETURN AND VALUATION

Chart 32: YTD Stock Price Returns by Segment



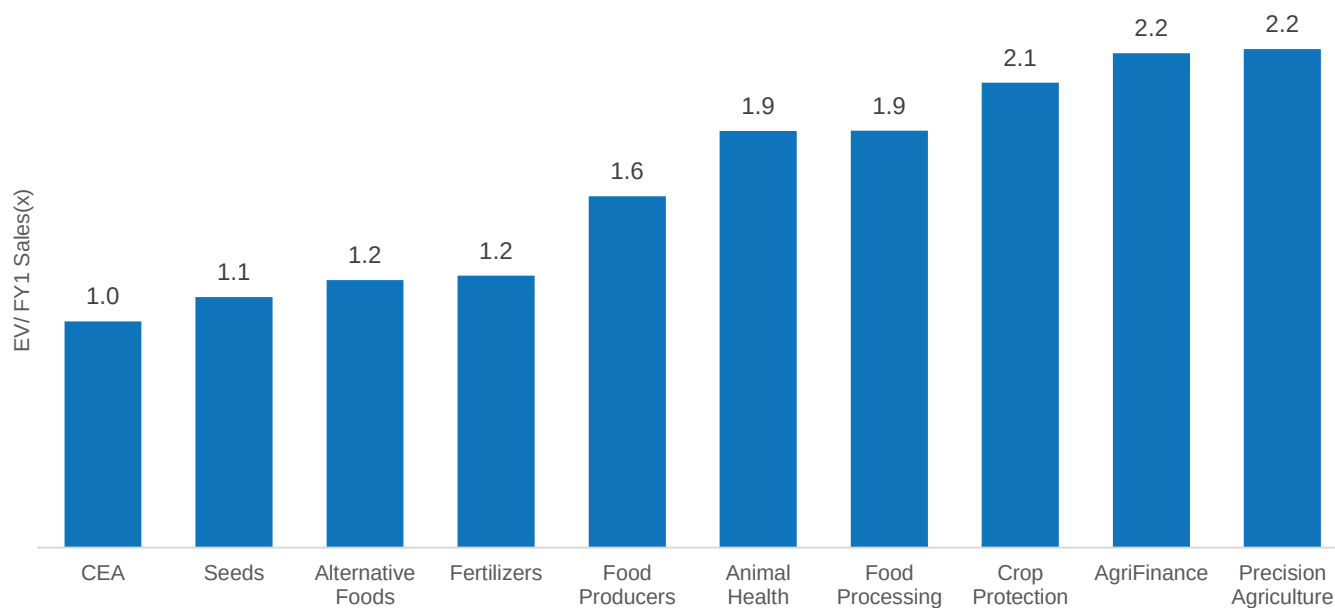
Source: Intro-act, FactSet. YTD Data Through end of January 2024.

Chart 33: Agtech Industry Growth and Valuation by Segment



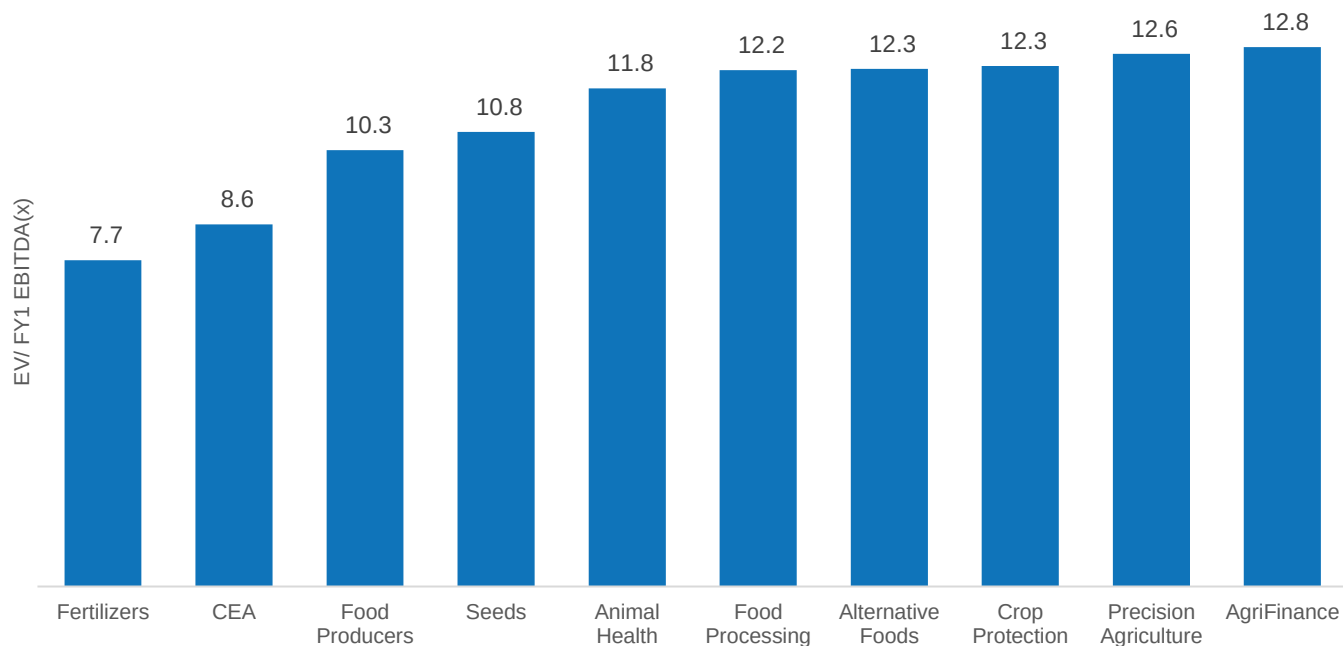
Source: Intro-act, FactSet. Data Through end of January 2024. FY0 = last reported year. FY1 = first unreported year.

Chart 34: EV/ FY1 Sales Multiple by Segment



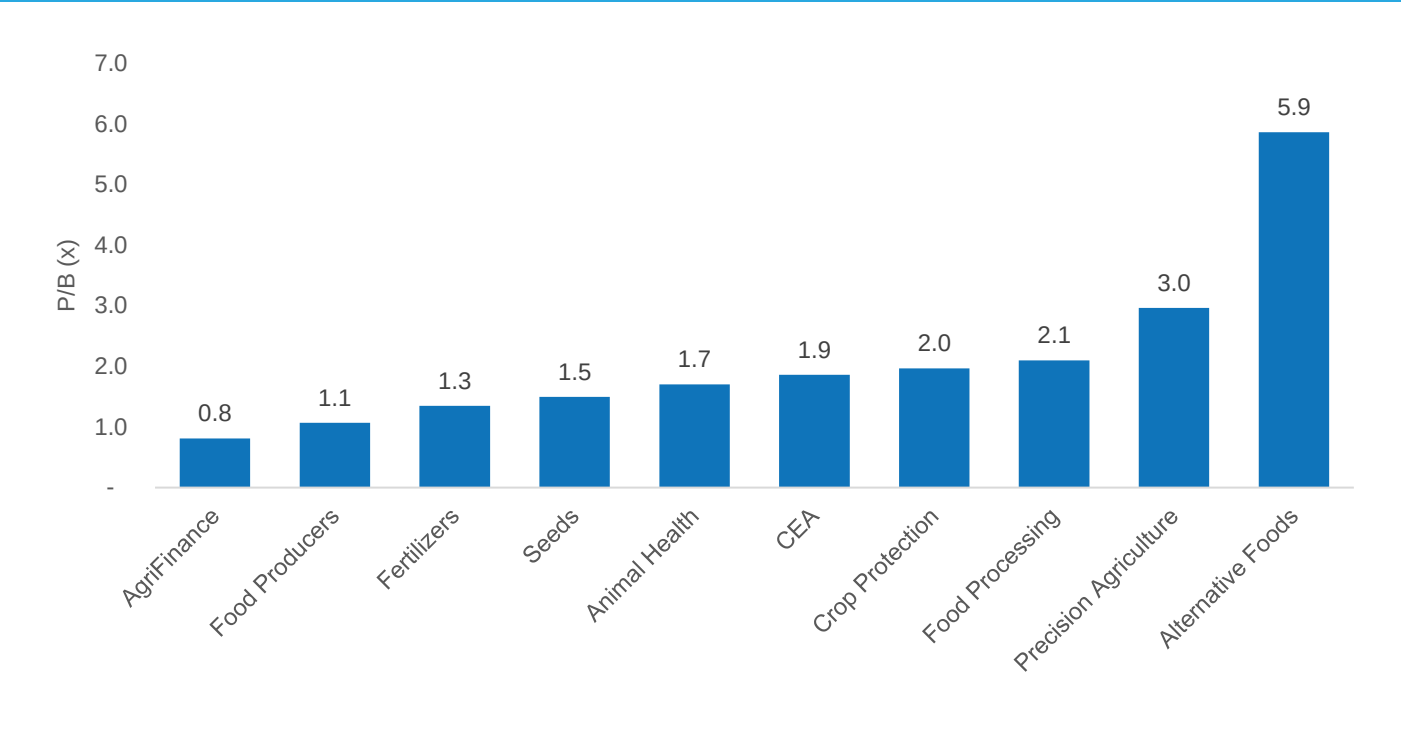
Source: Intro-act, FactSet. Data Through end of January 2024. FY0 = last reported year. FY1 = first unreported year.

Chart 35: EV/ FY1 EBITDA Multiple by Segment



Source: Intro-act, FactSet. Data Through end of January 2024. FY0 = last reported year. FY1 = first unreported year.

Chart 36: Price-to-Book Multiple by Segment



Source: Intro-act, FactSet. Data Through end of January 2024. FY0 = last reported year. FY1 = first unreported year.

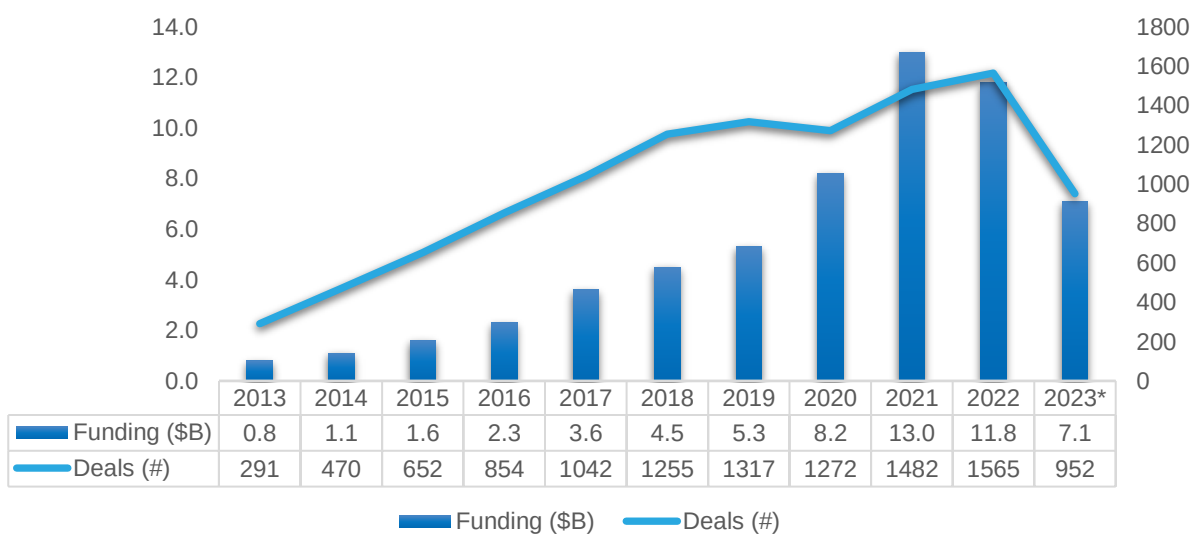
AGTECH CAPITAL MARKET TRENDS

Chart 37: Agtech VC Deal Activity by Quarter



Source: Intro-act, Pitchbook, *Data as of December 31, 2023

Chart 38: Global Agtech VC Deal Activity – Last 10 years



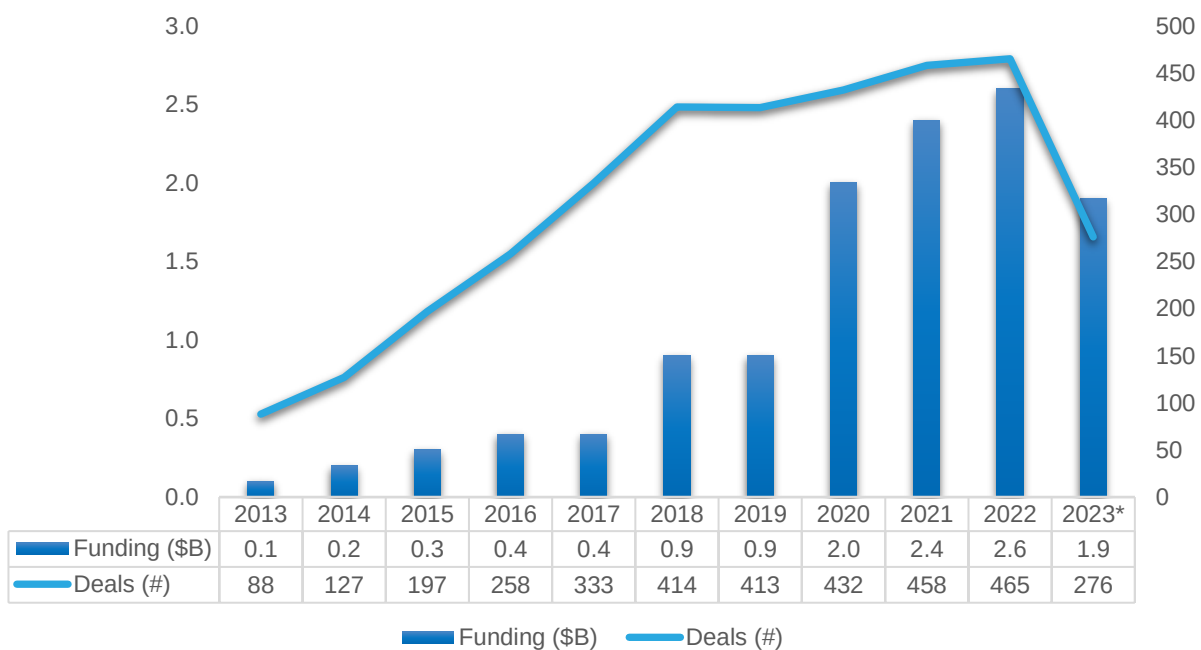
Source: Intro-act, Pitchbook, *Data as of December 31, 2023

Chart 39: North American Agtech VC Deal Activity – Last 10 years



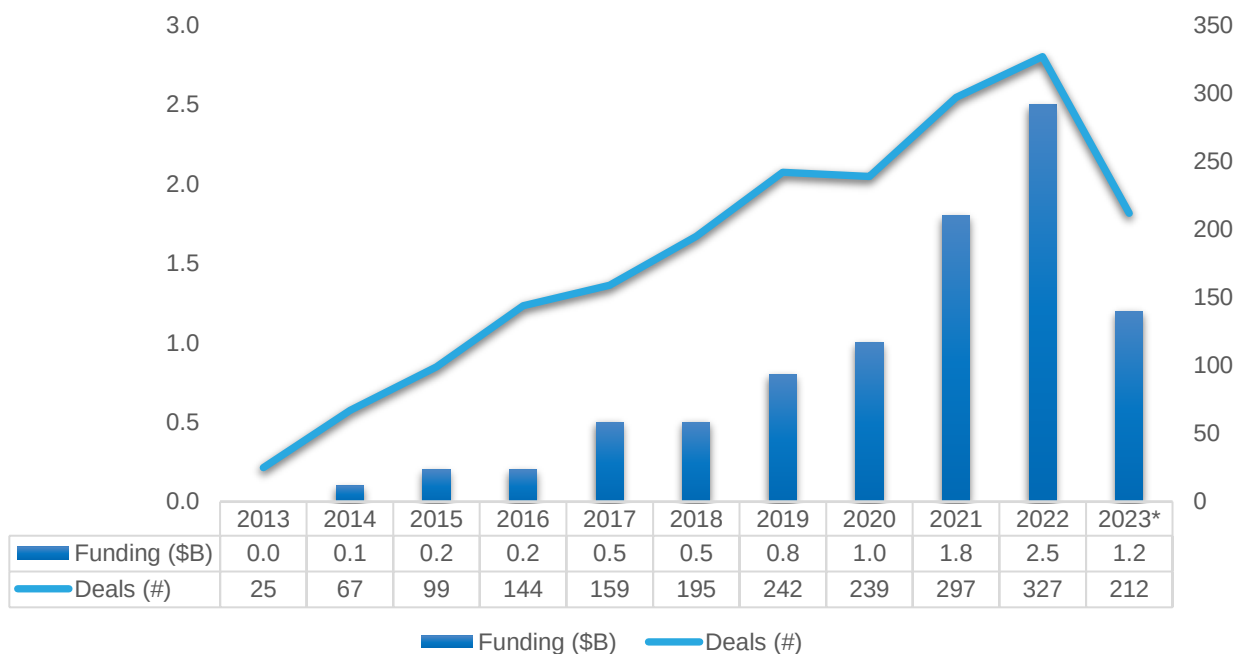
Source: Intro-act, Pitchbook, *Data as of December 31, 2023

Chart 40: European Agtech VC Deal Activity – Last 10 years



Source: Intro-act, Pitchbook, *Data as of December 31, 2023

Chart 41: Asian Agtech VC Deal Activity – Last 10 years



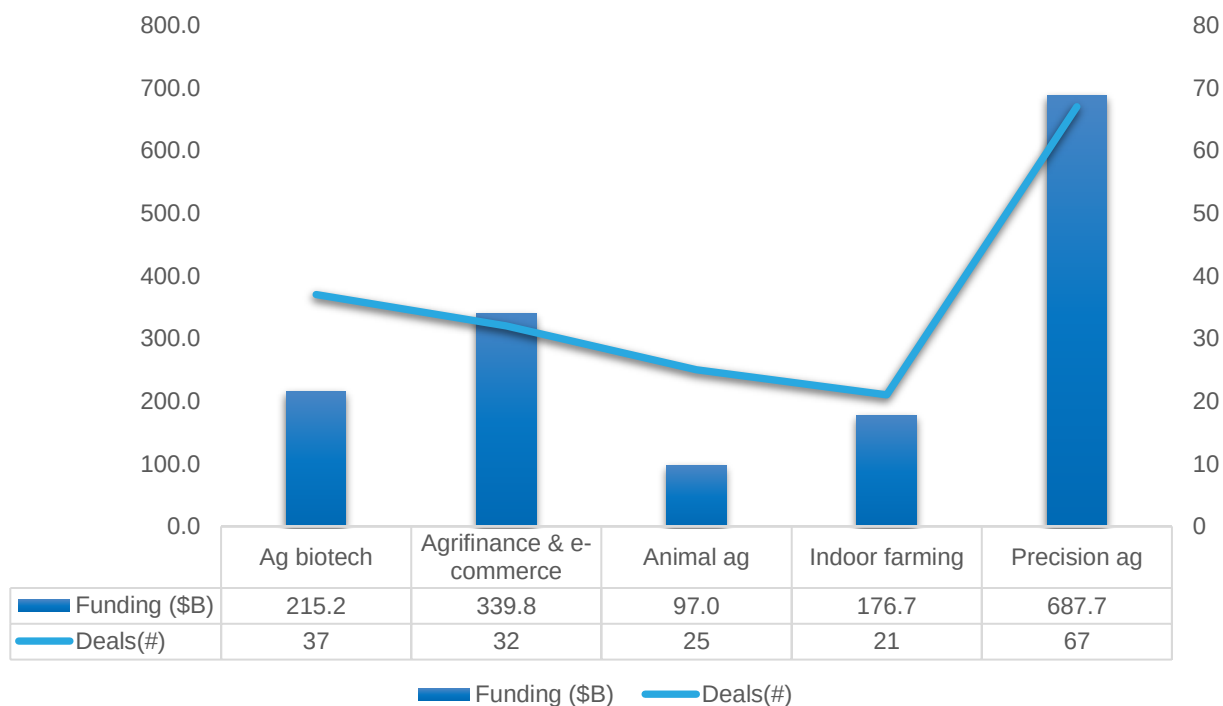
Source: Intro-act, Pitchbook, *Data as of December 31, 2023

Chart 42: Oceania Agtech VC Deal Activity – Last 10 years



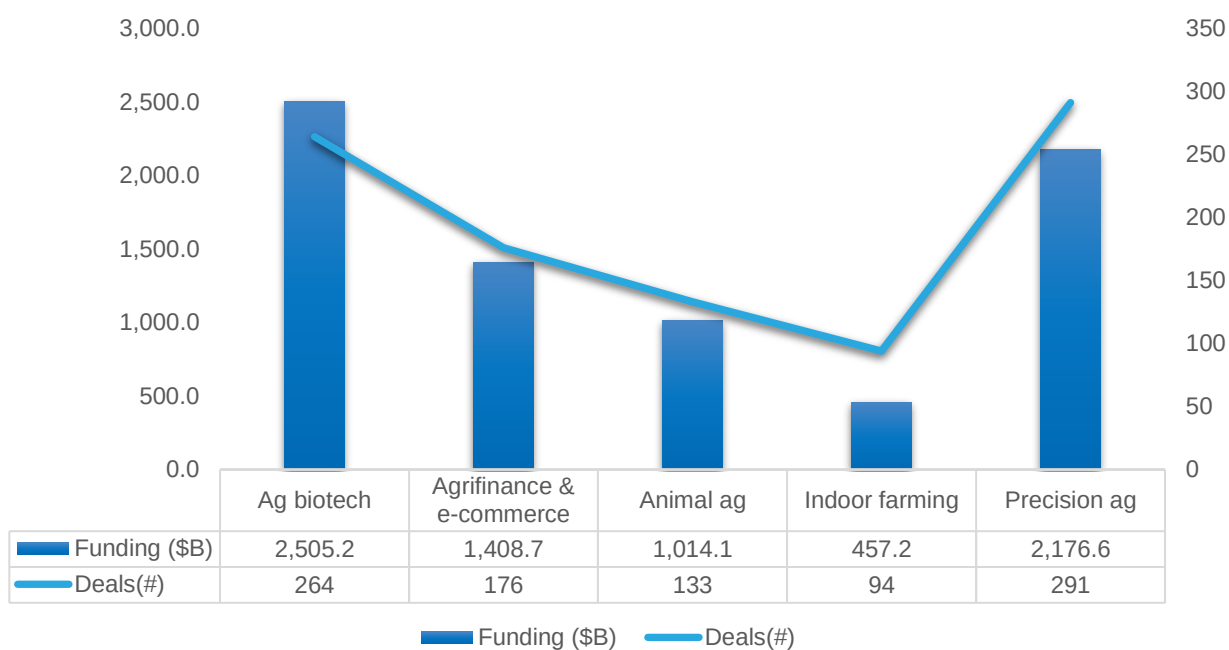
Source: Intro-act, Pitchbook, *Data as of December 31, 2023

Chart 43: Agtech VC Deal Activity by Segment – Q4 2023



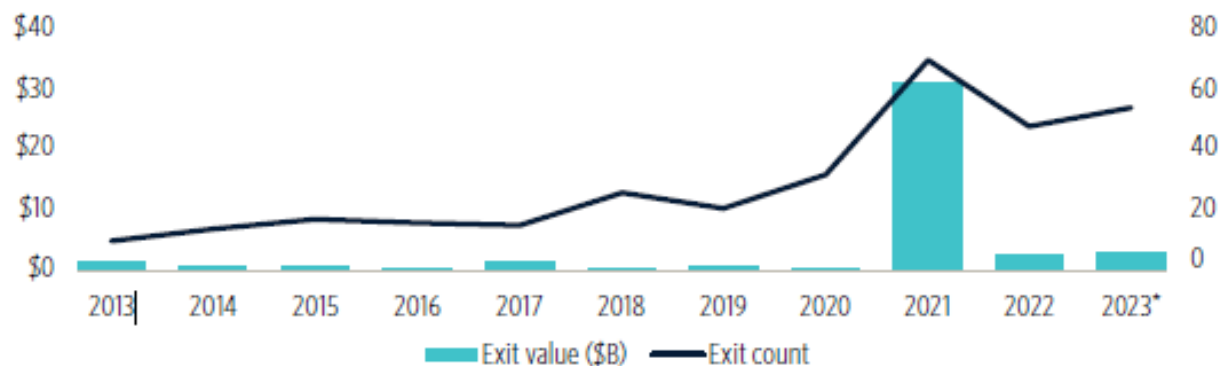
Source: Intro-act, Pitchbook, *Data as of December 31, 2023

Chart 44: Agtech VC Deal Activity by Segment – TTM (as of Q4 2023)



Source: Intro-act, Pitchbook, *Data as of December 31, 2023

Chart 45: Agtech VC Exit Activity by Year



Source: Intro-act, Pitchbook, *Data as of December 31, 2023

Chart 46: Top 10 AgTech VC Deals in Q4 2023*

Company	Close date (2023)	Subsegment	Deal Value(\$M)
Farmers Business Network	13 October	Agribusiness marketplaces, farm management software, finance & insurance	154.90
Bowery	9 November	Indoor growers	93.80
Quantum Systems	24 October	Drones & imagery analytics	67.20
FarMart	17 October	Agribusiness marketplaces	65.00
Pachama	5 December	Drones & imagery analytics	64.00
Oritain	28 November	Plant data & analysis	57.00
NewLeaf Symbiotics	19 December	Plant biotech	47.00
VeGrow	13 December	Farm management software	46.00
Carbon Robotics	1 December	Robotics & smart field equipment	43.00
Planet Farms	16 November	Indoor farming components	40.00

Source: Intro-act, Pitchbook, *Data as of December 31, 2023

Chart 47: Top-10 VC-Backed Agtech Companies by Total VC Raised to Date*

Company	Category	VC(\$M) raised to date
Plant-Ag	Indoor growers	900.00
Farmers Business Network	Agribusiness marketplaces, farm management software, finance & insurance	369.30
Ninjacart	Agribusiness marketplaces	362.80
Zhongxin Breeding	Animal biotech	338.70
Atlas Agro	Plant biotech	333.00
Capella Space	Drones & imagery analytics	254.00
Plenty	Indoor growers	226.00
Re:Ocean	Aquaculture	222.30
Indigo	Plant biotech, agribusiness marketplaces	163.60
Synthego	Plant biotech	159.50

Source: Intro-act, Pitchbook, *Data as of December 31, 2023

Chart 48: Key Agtech VC Exits in Q4 2023*

Company	Close date (2023)	Subsegment
Shiyue Daotian	10 October	Plant biotech
Clearpath Robotics	2 October	Robotics & smart field equipment
ITK	31 October	Farm management software
Clinical Microbiomics	11 October	Animal biotech
QualySense	1 December	Robotics & smart field equipment
Peptide Bio	4 December	Plant biotech
Barrix	16 December	Plant biotech
Orion Space Solutions	29 November	Drones & imagery analytics
Merci Raymond	18 October	Indoor farming systems
Dekon Farming	6 December	Livestock & land animal technology
Ame Kaze Taiyo	18 December	Agribusiness marketplaces

Source: Intro-act, Pitchbook, *Data as of December 31, 2023

AGTECH SPAC ACTION

Chart 49: Agtech SPACs (Searching)

S. No	SPAC Name	Ticker	Trust Value (\$ Mn)	IPO Date	Completion Date
1	Acri Capital Acquisition Corp	ACAC	86	09/06/22	14/04/24
2	Agriculture & Natural Solutions Acquisition	ANSC	345	11/08/23	11/08/25
3	Four Leaf Acquisition Corp	FORL	54	03/16/23	09/16/24
4	Hennessy Capital Investment Corp. VI.	HCVI	340.9	09/28/21	09/28/23
5	Keen Vision Acquisition Corp.	KVAC	150	07/24/23	10/24/24
6	Onyx Acquisition Co. I	ONYX	264.5	11/02/21	02/07/24
7	Patria Acquisition Corp.	PLAO	230	03/10/22	14/06/24
8	Trailblazer Merger Corp I.	TMBC	69	03/28/23	09/28/24
9	Integrated Wellness Acquisition Corp	WEL	115	12/08/21	12/13/24
10	COLOMBIER ACQUISITION CORP. II	CLBR	170	20/11/23	20/02/26
11	Greencity Acquisition Corp	GRCY	40	24/07/20	28/10/23
12	Infinite Acquisition Corp.	NFNT	276	19/11/21	23/11/24

Source: Intro-act, Boardroom Alpha

Chart 50: Agtech SPACs (Business Combination Agreement Announced)

S.No.	SPAC Name	Ticker	Target Company	EV (\$ Mn)	Expected Closing
1	Edoc Acquisition Corp	ADOC	Australian Oilseeds Investments	190	3Q23
2	Bite Acquisition Corp.	BITE	Above Food Corp.	319	3Q23
3	Energem Corp	ENCP	Graphjet Technology	1,490	1Q24
4	Lakeshore Acquisition II Corp.	LBBS	Nature's Miracle	265	1Q24
5	Maquia Capital Acquisition Corporation	MAQC	Immersed Inc.	425	1Q24
6	Noble Rock Acquisition Corporation	NRAC	Braiin	215	1Q24
7	Oxus Acquisition Corp.	OXUS	Borealis Foods Inc.	150	2Q24

Source: Intro-act, Boardroom Alpha

Chart 51: 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

Source: Intro-act, Boardroom Alpha

AGTECH EVENTS CALENDAR

S. No.	Event	Location	Dates
1	Global Conference on Nutrition and Food Sciences	Milano, Italy	23-Feb to 24-Feb-2024
2	Commodity Classic 2024	Texas, US	28-Feb to 02-Mar-2024
3	Agrotech 2024	Kielce, Poland	08-Mar to 10-Mar-2024
4	Indoor Ag-Con	Las Vegas, US	11-Mar to 12-Mar-2024
5	Agricultural Film Europe	Barcelona, Spain	12-Mar to 13-Mar-2024
6	GreenTech Americas	Querétaro, Mexico	12-Mar to 14-Mar-2024
7	Regenerative Agriculture and Food Systems Summit USA	Chicago, US	12-Mar to 14-Mar-2024
8	15th China International Fertilizer Show (Fshow 2024)	Shanghai, China	13-Mar to 14-Mar-2024
9	The Annual Meat Conference 2024	Texas, US	18-Mar to 20-Mar-2024
10	World Agri-Tech Innovation Summit	San Francisco, US	19-Mar to 20-Mar-2024
11	International Conference on Agricultural Engineering and Plant Protection Systems ICAEPPS	Prague, Czech Republic	22-Mar to 23-Mar-2024
12	International Conference on Agricultural Buildings and Plant Protection Technologies (ICABPPT)	Singapore	29-Mar to 30-Mar-2024
13	New AG International Africa	Berlin, Germany	10-Apr-2024
14	NERM - Nutrients in Europe Research Meeting	Brussels, Belgium	16-Apr to 17-Apr-2024
15	FutureAg Expo 2024	Melbourne, Australia	17-Apr to 19-Apr-2024
16	ICASCAP 2024: International Conference on Agricultural Sciences and Common Agricultural Policy	London, UK	22-Apr to 23-Apr-2024
17	Argus Fertilizer Asia Conference	Dubai, UAE	23-Apr to 25-Apr-2024
18	Agrishow 2024	Ribeirao Preto, Brazil	29-Apr to 03-May-2024
19	ICAE 2024: International Conference on Agricultural Economics	Singapore	03-May to 04-May-2024
20	Cannabis Europa 2024	London, UK	07-May to 08-May-2024
21	Animal Nutrition Conference of Canada (ANCC)	Winnipeg, Canada	14-May to 16-May-2024
22	SIAL Canada	Montreal, Canada	15-May to 17-May-2024
23	17th International Conference on Plant Genomics	Rome, Italy	16-May to 17-May-2024
24	34th International Congress on Sustainable Agriculture, Biological & Environmental Sciences (ASABES 2024)	Antalya, Turkey	16-May to 17-May-2024

Source: Intro-act, Multiple Web Sources

AGTECH COMP TABLE

						Price Performance			Sales			EBITDA			Book Value	
			Price	Mkt Cap (\$ Mns)	Ent Val (\$ Mns)	% to High	% to Low	% YTD	FY0	FY1	EV/Sales	FY0	FY1	EV/ EBITDA	Book/ Share	P/ Book
Peer Set																
Alternative Foods		Ticker		236,107	304,860			-5%	260,983	253,052	1.2 x	24,518	24,835	12.3 x		5.9 x
1	Givaudan SA	GIVN-CH	4,207.0	38,846	44,572	2%	-32%	2%	7,967	8,008	5.6 x	1,736	1,827	24.4 x	504.45	8.3 x
2	General Mills	GIS	64.9	36,862	48,972	40%	-7%	0%	20,094	20,024	2.4 x	4,053	4,179	11.7 x	16.49	3.9 x
3	Archer-Daniels-Midland	ADM	55.6	29,645	34,547	57%	-9%	-23%	101,848	94,950	0.4 x	6,714	6,198	5.6 x	47.16	1.2 x
4	International Flavors & Fragrances	IFF	80.7	20,596	31,085	22%	-23%	0%	12,440	11,466	2.7 x	2,455	1,973	15.8 x	66.51	1.2 x
5	Kellogg	K	54.8	18,756	25,487	32%	-13%	-2%	13,122	12,875	2.0 x	2,085	2,243	11.4 x	9.31	5.9 x
6	Kerry Group Plc	KRZ-IE	89.8	15,724	17,754	23%	-16%	4%	9,362	8,819	2.0 x	1,282	1,268	14.0 x	38.99	2.3 x
7	Tyson Foods	TSN	54.8	15,681	28,699	16%	-18%	2%	52,881	52,957	0.5 x	2,147	2,738	10.5 x	51.95	1.1 x
8	Symrise AG	SY1-DE	104.2	14,566	17,195	17%	-12%	-5%	4,874	5,088	3.4 x	962	974	17.7 x	27.32	3.8 x
9	Chr. Hansen Holding	CHR-DK	80.1	10,561	11,524	6%	-26%	-4%	1,418	1,535	7.5 x	499	552	20.9 x	15.19	5.3 x
10	China Mengniu Dairy	2319-HK	2.2	8,679	12,638	122%	-7%	-18%	13,462	13,658	0.9 x	1,221	1,265	10.0 x	1.47	1.5 x
11	GEA Group	G1A-DE	40.4	6,964	6,815	20%	-17%	-2%	5,467	5,863	1.2 x	754	829	8.2 x	15.28	2.6 x
12	Monde Nissin Corp.	MONDE-PH	0.2	2,812	2,720	47%	-31%	3%	1,358	1,420	1.9 x	186	215	12.6 x	0.06	2.7 x
13	Sensient Technologies	SXT	62.0	2,621	3,260	28%	-15%	-6%	1,456	1,502	2.2 x	241	253	12.9 x	25.03	2.5 x
14	Maple Leaf Foods	MFI-CA	19.2	2,350	3,728	23%	-13%	0%	3,443	3,657	1.0 x	198	325	11.5 x	9.55	2.0 x
15	Yuan Longping Hi-Tech	000998-CN	1.7	2,267	2,648	58%	-7%	-12%	532	1,235	2.1 x	(10)	123	21.6 x	0.50	3.5 x

16	Ginkgo Bioworks	DNA	1.2	1,960	1,593	110%	-7%	-28%	478	259	6.2 x	(486)	(452)	-	0.68	1.8 x
17	Adama Agricultural	000553-CN	0.9	1,862	4,035	82%	-17%	-13%	5,438	4,669	0.9 x	557	263	15.3 x	1.35	0.6 x
18	Cheng De Lolo	000848-CN	1.1	1,124	737	35%	-8%	-1%	391	395	1.9 x	113	114	6.5 x	0.39	2.7 x
19	Hain Celestial Group	HAIN	10.7	961	1,846	79%	-16%	-2%	1,797	1,816	1.0 x	167	157	11.7 x	11.09	1.0 x
20	Winall Hi-Tech	300087-CN	1.0	934	935	97%	-10%	-17%	508	571	1.6 x	70	62	15.0 x	0.25	4.0 x
21	SunOpta	STKL	6.0	688	1,153	47%	-53%	9%	935	622	1.9 x	84	78	14.8 x	1.46	4.1 x
22	Oatly Group	OTLY	1.1	669	895	140%	-61%	-4%	722	771	1.2 x	(268)	(192)	-	0.99	1.1 x
23	Beyond Meat	BYND	6.6	427	1,423	245%	-16%	-26%	419	336	4.2 x	(278)	(198)	-	(5.63)	-1.2 x
24	Ouro Fino Saude	OFS3-BR	4.6	249	266	23%	-22%	-14%	200	195	1.4 x	40	29	9.0 x	2.52	1.8 x
25	Biotals	BTLS-BE	4.3	138	109	77%	-59%	-17%	3	3	33.6 x	(22)	(19)	-	1.19	3.6 x
26	Midsona AB	MSON.B-SE	0.8	114	175	13%	-25%	-4%	363	359	0.5 x	19	30	5.8 x	1.99	0.4 x
27	MustGrow Biologics	MGRO-CA	1.0	51	49	180%	-49%	5%	5	0	#DIV/0!	-	-	-	0.04	28.1 x

			Price Performance						Sales			EBITDA			Book Value	
			Price	Mkt Cap (\$ Mns)	Ent Val (\$ Mns)	% to High	% to Low	% YTD	FY0	FY1	EV/Sales	FY0	FY1	EV/ EBITDA	Book/ Share	P/ Book
Peer Set																
	Precision Agriculture	Ticker		511,077	669,037			0%	301,589	298,143	2.2 x	52,280	52,942	12.6 x		3.0 x
28	Caterpillar	CAT	300.3	152,883	183,495	12%	-32%	2%	67,060	67,270	2.7 x	15,377	15,306	12.0 x	40.25	7.5 x
29	Deere & Company	DE	393.6	110,198	166,215	14%	-12%	-2%	55,565	49,652	3.3 x	14,211	11,287	14.7 x	77.37	5.1 x
30	Cummins	CMI	239.3	33,920	39,859	11%	-15%	0%	34,065	33,135	1.2 x	3,017	4,951	8.1 x	62.41	3.8 x
31	Ingersoll Rand	IR	79.9	32,327	33,969	8%	-35%	3%	5,916	6,830	5.0 x	1,435	1,759	19.3 x	23.60	3.4 x
32	Mahindra & Mahindra	500520-IN	19.9	24,765	32,769	6%	-31%	-4%	10,266	12,016	2.7 x	1,256	1,585	20.7 x	6.54	3.0 x
33	Tractor Supply Company	TSCO	224.6	24,282	28,919	12%	-18%	4%	14,556	14,991	1.9 x	1,877	1,930	15.0 x	19.46	11.5 x
34	Kubota Corporation	6326-JP	15.4	18,132	31,810	6%	-18%	3%	19,947	19,746	1.6 x	2,210	2,605	12.2 x	12.69	1.2 x
35	CNH Industrial NV	CNHI	12.0	15,966	37,610	42%	-19%	-1%	23,551	23,453	1.6 x	2,746	3,077	12.2 x	6.00	2.0 x
36	Trimble	TRMB	50.9	12,652	15,595	12%	-22%	-4%	3,799	3,662	4.3 x	1,004	979	15.9 x	17.46	2.9 x
37	Pentair plc	PNR	73.2	12,095	14,050	4%	-31%	1%	4,105	4,223	3.3 x	908	1,008	13.9 x	18.40	4.0 x
38	Toro Company	TTC	92.5	9,606	10,573	27%	-15%	-4%	4,553	4,682	2.3 x	712	748	14.1 x	14.55	6.4 x
39	AGCO Corporation	AGCO	122.3	9,160	10,633	19%	-10%	1%	14,412	13,487	0.8 x	1,973	1,732	6.1 x	58.17	2.1 x
40	SiteOne Landscape	SITE	154.6	6,974	7,812	14%	-24%	-5%	4,015	4,278	1.8 x	464	406	19.3 x	33.15	4.7 x
41	Trelleborg AB	TBABF	30.8	6,972	7,320	16%	-26%	-3%	3,270	3,207	2.3 x	670	684	10.7 x	17.01	1.8 x
42	Valmont Industries	VMI	225.7	4,715	5,742	49%	-16%	-3%	4,345	4,195	1.4 x	552	573	10.0 x	71.89	3.1 x
43	Bucher Industries	BUCN-CH	427.6	4,383	4,257	11%	-19%	2%	3,827	4,080	1.0 x	539	591	7.2 x	191.44	2.2 x

44	Escorts Kubota	500495-IN	35.9	3,968	3,565	15%	-39%	2%	1,019	1,117	3.2 x	96	146	24.4 x	9.59	3.7 x
45	Husqvarna AB	HUSQ.B-SE	7.9	3,678	5,697	26%	-22%	-3%	5,079	4,873	1.2 x	754	744	7.7 x	4.03	2.0 x
46	Kadant	KAI	286.0	3,348	3,401	9%	-36%	2%	905	947	3.6 x	189	197	17.2 x	62.50	4.6 x
47	TOMRA Systems	TOM-NO	10.2	3,015	3,413	79%	-29%	-16%	1,170	1,353	2.5 x	226	223	15.3 x	2.20	4.6 x
48	Turk Traktor	TTRAK.E-TR	26.6	2,663	2,518	48%	-50%	10%	1,160	1,502	1.7 x	181	363	6.9 x	2.55	10.4 x
49	Alamo Group	ALG	212.3	2,550	2,766	9%	-27%	1%	1,514	1,692	1.6 x	196	250	11.1 x	74.21	2.9 x
50	Lindsay Corporation	LNN	130.1	1,435	1,405	22%	-18%	1%	674	694	2.0 x	121	119	11.8 x	42.32	3.1 x
51	Helios Technologies	HLIO	41.3	1,364	1,894	76%	-9%	-9%	885	826	2.3 x	205	158	12.0 x	25.52	1.6 x
52	Titan International	TWI	14.8	913	1,139	9%	-37%	-1%	2,169	1,850	0.6 x	253	206	5.5 x	7.02	2.1 x
53	Gorman-Rupp Company	GRC	33.4	875	1,267	12%	-31%	-6%	660	693	1.8 x	116	121	10.5 x	13.34	2.5 x
54	Greenworks	301260-CN	1.7	843	740	258%	-26%	201%	773	-	-	28	-	-	1.37	1.3 x
55	Comer Industries	COM-IT	29.1	835	996	40%	-11%	-10%	1,340	1,320	0.8 x	195	218	4.6 x	17.86	1.6 x
56	Astec Industries	ASTE	35.6	810	859	58%	-19%	-4%	1,275	1,348	0.6 x	62	97	8.8 x	27.90	1.3 x
57	Ag Growth International	AFN-CA	42.3	803	1,432	10%	-20%	10%	1,057	1,159	1.2 x	170	213	6.7 x	12.45	3.4 x
58	Titan Machinery	TITN	26.7	611	1,394	79%	-20%	-7%	2,209	2,646	0.5 x	164	186	7.5 x	27.37	1.0 x
59	DXP Enterprises	DXPE	32.2	521	956	24%	-32%	-4%	1,481	1,683	0.6 x	127	165	5.8 x	22.47	1.4 x
60	Yamabiko Corporation	6250-JP	11.4	502	498	1%	-26%	14%	1,013	-	-	-	-	-	14.50	0.8 x
61	EXEL Industries SA	EXE-FR	63.0	428	553	4%	-32%	6%	1,203	1,215	0.5 x	109	109	5.1 x	70.92	0.9 x
62	Tsukishima Holdings	6332-JP	9.3	426	359	5%	-17%	4%	718	-	-	-	-	-	13.42	0.7 x

63	Millat Tractors	MTL-PK	1.9	360	351	27%	-40%	-9%	150	302	1.2 x	-	-	-	0.21	9.0 x
64	V.S.T. Tillers Tractors	531266-IN	40.1	347	306	25%	-37%	-12%	122	118	2.6 x	15	15	20.9 x	12.15	3.3 x
65	First Tractor	38-HK	0.7	258	536	18%	-34%	4%	1,827	1,709	0.3 x	-	153	3.5 x	0.83	0.8 x
66	Mayville Engineering	MEC	12.7	258	458	31%	-25%	-12%	539	592	0.8 x	61	65	7.0 x	11.18	1.1 x
67	Hyllion Holdings	HYLN	1.1	192	18	241%	-51%	29%	1	1	13.7 x	(117)	(42)	-	1.83	0.6 x
68	TYM Corporation	002900-KR	4.2	188	343	81%	-14%	2%	881	609	0.6 x	104	72	4.7 x	6.65	0.6 x
69	Emak S.p.A.	EM-IT	1.1	187	391	19%	-19%	-5%	644	611	0.6 x	82	73	5.4 x	1.90	0.6 x
70	Iseki & Co	6310-JP	8.0	184	643	15%	-12%	6%	1,241	-	-	-	-	-	21.57	0.4 x
71	Carr's Group PLC	CARR-GB	1.6	153	157	20%	-29%	27%	181	188	0.8 x	12	16	9.6 x	1.46	1.1 x
72	PowerFleet	PWFL	3.2	119	187	9%	-49%	-6%	135	133	1.4 x	6	6	29.2 x	2.16	1.5 x
73	Maruyama Mfg	6316-JP	18.3	92	84	5%	-32%	16%	275	-	-	-	-	-	29.86	0.6 x
74	Al-Ghazi Tractors	AGTL-PK	1.3	73	53	33%	-36%	-4%	153	-	-	20	-	-	0.30	4.1 x
75	Takakita Co	6325-JP	3.3	46	32	17%	-15%	16%	57	54	0.6 x	-	-	-	4.64	0.7 x

						Price Performance			Sales			EBITDA			Book Value	
			Price	Mkt Cap (\$ Mns)	Ent Val (\$ Mns)	% to High	% to Low	% YTD	FY0	FY1	EV/Sales	FY0	FY1	EV/EBITDA	Book/Share	P/Book
Peer Set																
Animal Health		Ticker		712,984	860,441			2%	467,615	458,740	1.9 x	60,393	72,810	11.8 x		1.7 x
76	Merck & Co	MRK	120.8	306,059	332,314	6%	-18%	11%	60,115	63,817	5.2 x	9,010	29,055	11.4 x	16.27	7.4 x
77	Zoetis	ZTS	187.8	86,226	91,290	8%	-20%	-5%	8,544	9,204	9.9 x	3,626	4,006	22.8 x	11.05	17.0 x
78	Marubeni Corporation	8002-JP	17.4	29,295	41,509	8%	-27%	11%	68,138	56,393	0.7 x	3,696	2,974	14.0 x	12.93	1.3 x
79	Muyuan Foods	002714-CN	4.9	26,834	36,500	53%	-13%	-12%	18,017	16,467	2.2 x	4,147	1,360	26.8 x	1.73	2.8 x
80	Inner Mongolia Yili	600887-CN	3.8	23,790	26,104	24%	-9%	0%	17,750	17,883	1.5 x	2,067	2,270	11.5 x	1.14	3.3 x
81	Wen's Foodstuff	300498-CN	2.6	17,409	21,681	26%	-15%	-7%	12,096	12,700	1.7 x	1,766	42	513.1 x	0.74	3.5 x
82	Avivagen	VIV	10.3	17,055	19,674	8%	-31%	-5%	9,172	10,575	1.9 x	3,821	4,296	4.6 x	8.35	1.2 x
83	Hormel Foods	HRL-US	30.4	16,608	19,296	52%	-5%	-5%	12,110	12,160	1.6 x	1,430	1,415	13.6 x	14.15	2.1 x
84	Alfa Laval AB	ALFA-SE	37.2	15,365	16,480	10%	-18%	-7%	6,023	6,583	2.5 x	1,114	1,260	13.1 x	8.67	4.3 x
85	Almarai Co. Ltd.	2280-SA	15.2	15,226	17,997	24%	-8%	2%	5,219	5,578	3.2 x	1,286	1,381	13.0 x	4.75	3.2 x
86	Tongwei Co. Ltd	600438-CN	3.2	14,610	18,647	91%	-4%	-8%	20,591	21,265	0.9 x	6,593	4,569	4.1 x	1.99	1.6 x
87	Conagra Brands	CAG-US	29.2	13,934	23,185	34%	-14%	2%	12,277	12,097	1.9 x	2,407	2,313	10.0 x	18.84	1.5 x
88	Henan Shuanghui	000895-CN	4.0	13,722	14,447	5%	-16%	5%	9,094	9,144	1.6 x	1,189	1,177	12.3 x	0.81	4.9 x
89	Bunge Limited	BG	88.1	12,798	17,468	32%	-2%	-13%	59,540	57,045	0.3 x	3,484	2,636	6.6 x	70.04	1.3 x
90	Mowi ASA	MOWI-NO	18.2	9,386	11,723	8%	-15%	1%	5,275	5,940	2.0 x	1,446	1,500	7.8 x	7.27	2.5 x
91	Evonik Industries	EVK-DE	18.6	8,679	13,228	22%	-11%	-9%	19,729	16,680	0.8 x	2,657	1,790	7.4 x	23.59	0.8 x

92	SalMar ASA	SALM-NO	55.9	8,117	9,019	5%	-33%	10%	1,952	2,786	3.2 x	540	911	9.9 x	13.50	4.1 x
93	Elanco Animal Health	ELAN	14.7	7,264	12,802	11%	-47%	-1%	4,418	4,385	2.9 x	1,023	990	12.9 x	12.45	1.2 x
94	Darling Ingredients	DAR	43.3	6,908	11,494	65%	-10%	-13%	6,532	6,859	1.7 x	1,541	1,612	7.1 x	27.46	1.6 x
95	New Hope Liuhe	000876-CN	1.1	5,173	15,597	85%	-5%	-11%	20,425	21,283	0.7 x	934	583	26.7 x	0.73	1.6 x
96	Balchem Corporation	BCPC	140.2	4,519	4,841	8%	-21%	-6%	942	928	5.2 x	200	225	21.6 x	31.80	4.4 x
97	Neogen Corporation	NEOG	15.5	3,356	4,006	55%	-7%	-23%	822	938	4.3 x	205	234	17.1 x	14.54	1.1 x
98	Bakkafrost P/F	BAKKA-NO	56.4	3,342	3,811	29%	-27%	8%	1,023	1,050	3.6 x	335	308	12.4 x	25.58	2.2 x
99	QL Resources	7084-MY	1.2	3,000	3,283	12%	-8%	-1%	1,359	1,402	2.3 x	170	185	17.8 x	0.24	5.1 x
100	Bluestar Adisseo	600299-CN	1.0	2,794	3,010	32%	-14%	-8%	2,063	1,989	1.5 x	385	221	13.6 x	0.76	1.4 x
101	Cranswick plc	CWK-GB	51.2	2,762	2,928	4%	-32%	6%	2,886	3,219	0.9 x	263	318	9.2 x	20.80	2.5 x
102	Beijing Dbn Technology	002385-CN	0.7	2,731	4,081	113%	-9%	-21%	4,681	5,047	0.8 x	222	165	24.7 x	0.33	2.0 x
103	Fujian Sunner Development	002299-CN	2.1	2,586	3,564	82%	-8%	-14%	2,442	2,600	1.4 x	269	327	10.9 x	1.16	1.8 x
104	Leroy Seafood	LSG-NO	4.1	2,413	3,154	41%	-9%	-2%	2,598	2,857	1.1 x	444	439	7.2 x	2.86	1.4 x
105	National Agricultural Development	6010-SA	8.0	2,409	2,032	9%	-63%	7%	717	844	2.4 x	122	151	13.5 x	1.85	4.3 x
106	Schouw & Co	SCHO-DK	80.4	2,051	2,856	10%	-25%	6%	4,647	5,369	0.5 x	325	402	7.1 x	65.55	1.2 x
107	Genus plc	GNS-GB	29.2	1,929	2,143	29%	-21%	6%	861	900	2.4 x	139	148	14.5 x	11.17	2.6 x
108	Twist Bioscience	TWST	32.4	1,872	1,630	26%	-65%	-12%	245	293	5.6 x	(185)	(151)	-	10.21	3.2 x
109	Bell Food Group AG	BELL-CH	295.5	1,857	2,790	10%	-15%	-2%	5,178	5,282	0.5 x	388	400	7.0 x	279.67	1.1 x
110	Nissui Corporation	1332-JP	5.5	1,725	3,084	12%	-29%	3%	5,677	5,472	0.6 x	334	336	9.2 x	5.44	1.0 x

111	CVS Group plc	CVSG-GB	21.5	1,541	1,751	33%	-23%	0%	747	842	2.1 x	149	165	10.6 x	4.58	4.7 x
112	Dongwon Industries	006040-KR	27.9	1,299	2,720	46%	-27%	39%	6,821	-	-	599	-	-	56.36	0.5 x
113	Godrej Agrovet	540743-IN	6.7	1,285	1,518	5%	-29%	0%	1,143	1,189	1.3 x	64	81	18.6 x	1.48	4.5 x
114	Vimian Group AB	VIMIAN-SE	2.8	1,228	1,594	35%	-33%	-6%	297	360	4.4 x	85	102	15.7 x	1.27	2.2 x
115	BayWa	BYW6-DE	32.4	1,170	8,752	43%	-7%	-6%	29,533	25,383	0.3 x	903	725	12.1 x	26.72	1.2 x
116	Inghams Group	ING-AU	2.8	1,057	2,173	3%	-39%	5%	1,955	2,151	1.0 x	279	315	6.9 x	0.36	7.9 x
117	Maruha Nichiro Corp.	1333-JP	20.0	1,013	3,056	4%	-19%	2%	7,556	-	-	-	-	-	27.96	0.7 x
118	Shandong Longda	002726-CN	0.9	1,007	1,326	46%	-12%	-18%	2,326	-	-	47	-	-	0.33	2.9 x
119	Elders Limited	ELD-AU	5.9	934	1,225	7%	-42%	16%	2,119	2,127	0.6 x	143	147	8.4 x	3.64	1.6 x
120	Hilton Food Group plc	HFG-GB	10.0	897	1,446	4%	-23%	-2%	4,791	5,113	0.3 x	161	188	7.7 x	3.94	2.5 x
121	COFCO Joycome Foods	1610-HK	0.2	891	1,486	63%	-3%	-19%	1,874	1,977	0.8 x	50	-	-	0.27	0.7 x
122	China Modern Dairy	1117-HK	0.1	648	2,309	90%	-5%	-13%	1,785	1,953	1.2 x	376	276	8.4 x	0.20	0.4 x
123	Australian Agricultural	AAC-AU	1.0	582	868	24%	-25%	1%	207	209	4.2 x	45	32	27.0 x	1.59	0.6 x
124	China Youran Dairy	9858-HK	0.2	573	3,863	92%	-5%	-20%	2,624	-	-	435	-	-	0.41	0.4 x
125	Farm Fresh Bhd.	5306-MY	0.3	566	611	24%	-30%	5%	136	163	3.7 x	21	25	24.4 x	0.07	4.3 x
126	Zhanjiang Guolian Aquatic	300094-CN	0.5	566	734	127%	-21%	-24%	741	-	-	30	-	-	0.36	1.4 x
127	Oceana Group	OCE-ZA	3.9	508	598	8%	-17%	9%	533	589	1.0 x	90	107	5.6 x	3.47	1.1 x
128	Benchmark Holdings	BMK-GB	0.6	410	497	5%	-29%	28%	215	225	2.2 x	43	47	10.6 x	0.48	1.2 x
129	Shandong Delisi Food	002330-CN	0.6	403	372	65%	-23%	-19%	446	-	-	15	-	-	0.53	1.2 x

130	GFPT Public	GFPT-TH	0.3	403	506	17%	-17%	-5%	522	530	1.0 x	85	68	7.5 x	0.39	0.8 x
131	Aker Biomarine	AKBM-NO	4.3	379	749	10%	-35%	-4%	277	339	2.2 x	63	71	10.5 x	4.15	1.0 x
132	Astral Foods	ARL-ZA	8.5	365	396	11%	-19%	18%	1,047	1,020	0.4 x	(17)	79	5.0 x	5.62	1.5 x
133	Japfa	UD2-SG	0.1	308	1,990	65%	-14%	-9%	4,364	4,461	0.4 x	282	289	6.9 x	0.39	0.4 x
134	Salmon Evolution	SALME-NO	0.7	282	303	30%	-24%	2%	15	56	5.4 x	(7)	14	21.4 x	0.46	1.5 x
135	Atria Oyj	ATRAV-FI	11.7	224	664	17%	-12%	2%	1,804	1,896	0.4 x	127	122	5.5 x	16.55	0.7 x
136	Phibro Animal Health	PAHC	10.8	220	865	53%	-13%	-7%	978	996	0.9 x	113	117	7.4 x	6.69	1.6 x
137	Animalcare Group plc	ANCR-GB	2.3	136	141	13%	-23%	4%	88	94	1.5 x	16	17	8.4 x	1.71	1.3 x
138	Zomedica Pharmaceuticals	ZOM	0.1	131	27	107%	-8%	-33%	19	25	1.1 x	-	-	-	0.27	0.5 x
139	Dyadic International	DYAI	1.3	37	29	85%	-8%	-19%	3	3	9.6 x	-	-	-	0.27	4.9 x
140	Apiam Animal Health	AHX-AU	0.2	37	97	111%	-29%	4%	124	-	-	-	-	-	0.44	0.5 x
141	Fukutome Meat Packers	2291-JP	10.4	35	59	17%	-6%	1%	183	-	-	-	-	-	5.04	2.1 x
142	Japan Animal Referral	6039-JP	12.0	34	49	28%	-5%	2%	29	-	-	-	-	-	9.79	1.2 x
143	AquaBounty	AQB	2.5	10	2	643%	-38%	-11%	3	3	0.6 x	(20)	(23)	-	45.02	0.1 x

						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		7,659	10,795				-2%	10,969	10,596	1.0 x	1,111	1,257	8.6 x		1.9 x			
144	Signify NV	LIGHT-NL	30.4	3,897	5,403	20%	-23%	-8%	7,282	7,015	0.8 x	860	888	6.1 x	25.28	1.2 x			
145	Gibraltar Industries	ROCK	80.9	2,463	2,382	8%	-44%	2%	1,382	1,378	1.7 x	177	207	11.5 x	29.38	2.8 x			
146	Cresco Labs	CL-CA	2.1	655	1,182	35%	-51%	52%	843	764	1.5 x	174	163	7.3 x	1.52	1.4 x			
147	SNDL	SNDL-US	1.3	346	321	77%	-6%	-19%	526	674	0.5 x	(12)	25	12.7 x	3.70	0.4 x			
148	GrowGeneration	GRWG	2.3	142	120	124%	-23%	-8%	278	222	0.5 x	(17)	(5)	-	3.26	0.7 x			
149	Village Farms	VFF	0.9	94	136	38%	-35%	12%	294	281	0.5 x	(19)	11	12.8 x	2.91	0.3 x			
150	Hydrofarm Holdings	HYFM	1.0	45	986	126%	-32%	8%	345	231	4.3 x	(21)	1	N.M.	(10.57)	-0.1 x			
151	Local Bounti	LOCL	2.1	17	265	478%	-44%	1%	19	30	9.0 x	(31)	(32)	-	9.41	0.2 x			

						Price Performance			Sales			EBITDA			Book Value	
			Price	Mkt Cap (\$ Mns)	Ent Val (\$ Mns)	% to High	% to Low	% YTD	FY0	FY1	EV/Sales	FY0	FY1	EV/EBITDA	Book/Share	P/Book
Peer Set																
Seeds		Ticker		4,585	6,799			-10%	5,574	6,025	1.1 x	624	631	10.8 x		1.5 x
152	Shandong Denghai Seeds	002041-CN	1.4	1,253	864	119%	-14%	-24%	192	209	4.1 x	46	41	21.3 x	0.54	2.6 x
153	Sakata Seed	1377-JP	25.2	1,195	940	24%	-8%	-3%	555	561	1.7 x	106	105	9.0 x	22.75	1.1 x
154	Tres Tentos Agroindustrial	TTEN3-BR	2.2	1,111	1,138	33%	-13%	-10%	1,314	1,804	0.6 x	115	126	9.0 x	1.29	1.7 x
155	Central Garden & Pet Company	CENT	46.9	520	3,394	10%	-24%	-6%	3,310	3,234	1.0 x	336	331	10.3 x	27.01	1.7 x
156	Kaveri Seed	532899-IN	8.7	485	382	6%	-34%	18%	129	139	2.8 x	30	35	11.0 x	3.62	2.4 x
157	S&W Seed	SANW	0.5	22	80	327%	-11%	-28%	74	78	1.0 x	(9)	(6)	-	1.46	0.3 x

			Price Performance						Sales			EBITDA			Book Value	
			Price	Mkt Cap (\$ Mns)	Ent Val (\$ Mns)	% to High	% to Low	% YTD	FY0	FY1	EV/Sales	FY0	FY1	EV/EBITDA	Book/Share	P/Book
Peer Set																
Crop Protection		Ticker	103,953	123,409				-6%	60,835	58,972	2.1 x	10,925	9,995	12.3 x		2.0 x
158	Corteva	CTVA	45.5	32,051	35,149	43%	-5%	-5%	17,230	17,576	2.0 x	3,380	3,597	9.8 x	35.70	1.3 x
159	Rentokil Initial plc	RTO-GB	5.2	13,116	16,966	64%	-9%	-7%	4,498	6,764	2.5 x	1,016	1,554	10.9 x	2.01	2.6 x
160	FMC Corporation	FMC	56.2	7,011	10,975	134%	-12%	-11%	4,487	4,562	2.4 x	978	985	11.1 x	26.38	2.1 x
161	PI Industries	523642-IN	40.6	6,167	5,832	20%	-14%	-4%	785	945	6.2 x	187	242	24.1 x	6.71	6.1 x
162	UPL Limited	512070-IN	6.5	4,861	9,304	45%	-16%	-8%	6,608	5,230	1.8 x	1,334	665	14.0 x	4.63	1.4 x
163	Bayer CropScience	506285-IN	72.1	3,242	3,183	3%	-34%	8%	622	664	4.8 x	112	133	23.9 x	8.39	8.6 x
164	Sichuan Hebang	603077-CN	0.3	2,817	2,665	53%	-4%	-3%	1,897	1,367	1.9 x	780	-	-	0.32	1.0 x
165	Jiangsu Yangnong Chemical	600486-CN	6.8	2,782	2,733	85%	-11%	-23%	2,300	1,989	1.4 x	415	336	8.1 x	3.28	2.1 x
166	Sumitomo Chemical India	542920-IN	5.0	2,500	2,400	16%	-11%	3%	424	341	7.0 x	81	52	46.2 x	0.61	8.2 x
167	Tessenderlo Group NV	TESB-BE	28.8	2,465	1,880	23%	-5%	25%	2,818	-	-	474	-	-	33.23	0.9 x
168	Atul Limited	500027-IN	77.4	2,280	2,260	18%	-5%	-10%	663	575	3.9 x	97	81	27.8 x	20.00	3.9 x
169	Shandong Weifang Rainbow	301035-CN	7.5	2,096	2,405	60%	-5%	-24%	2,106	1,705	1.4 x	267	212	11.4 x	3.27	2.3 x
170	KWS SAAT SE &	KWS-DE	56.6	1,868	2,662	23%	-11%	-5%	1,913	1,904	1.4 x	321	362	7.4 x	37.35	1.5 x
171	Anhui Guangxin Agrochemical	603599-CN	1.8	1,622	717	97%	-11%	-13%	1,310	973	0.7 x	423	310	2.3 x	1.44	1.2 x
172	Nufarm Limited	NUF-AU	3.7	1,410	2,099	10%	-26%	4%	2,272	2,387	0.9 x	286	292	7.2 x	3.58	1.0 x
173	Zhejiang Xinan Chemical	600596-CN	1.1	1,221	1,640	129%	-15%	-17%	3,147	2,409	0.7 x	567	180	9.1 x	1.33	0.8 x

174	Corbion NV	CRBN-NL	19.6	1,160	1,971	101%	-22%	-8%	1,545	1,550	1.3 x	198	201	9.8 x	11.38	1.7 x
175	Lier Chemical	002258-CN	1.4	1,088	1,557	109%	-16%	-19%	1,467	1,113	1.4 x	409	221	7.0 x	1.30	1.0 x
176	Lianhe Chemical	002250-CN	0.9	867	1,483	176%	-28%	-7%	1,141	-	-	209	-	-	1.03	0.9 x
177	Bioceres Crop Solutions	BIOX	13.4	838	1,049	6%	-27%	-3%	420	498	2.1 x	81	95	11.0 x	4.78	2.8 x
178	Nantong Jiangshan Agrochemical	600389-CN	1.8	818	652	179%	-16%	-23%	1,214	679	1.0 x	336	83	7.9 x	1.16	1.6 x
179	Sichuan Guoguang Agrochemical	002749-CN	1.8	802	701	12%	-33%	10%	240	282	2.5 x	41	66	10.6 x	0.55	3.4 x
180	Hextar Global Berhad	5151-MY	0.2	787	825	2%	-30%	20%	138	127	6.5 x	22	17	48.4 x	0.01	15.5 x
181	Shenzhen Noposion Crop Science	002215-CN	1.0	785	1,659	36%	-21%	-15%	616	588	2.8 x	78	106	15.6 x	0.53	1.8 x
182	Kumiai Chemical	4996-JP	5.8	774	901	41%	-8%	12%	1,136	1,127	0.8 x	147	118	7.7 x	7.56	0.8 x
183	BSM Chemical Co	300796-CN	2.1	774	755	16%	-33%	-6%	110	-	-	33	-	-	0.64	3.3 x
184	Dhanuka Agritech	507717-IN	14.5	659	655	8%	-49%	14%	205	221	3.0 x	34	40	16.4 x	3.14	4.6 x
185	Hailir Pesticides & Chemicals	603639-CN	1.9	654	701	110%	-16%	-12%	655	-	-	-	-	-	1.40	1.4 x
186	Anhui Huilong Agricultural	002556-CN	0.7	641	1,221	100%	-21%	-16%	2,636	-	-	135	-	-	0.58	1.2 x
187	CHUNBO	278280-KR	62.3	623	889	264%	-2%	-27%	252	146	6.1 x	59	27	33.1 x	23.12	2.7 x
188	Rallis India	500355-IN	3.2	619	619	4%	-29%	6%	363	328	1.9 x	28	36	17.1 x	1.13	2.8 x
189	India Pesticides	543311-IN	4.8	550	545	8%	-50%	9%	107	-	-	24	-	-	0.84	5.7 x
190	Caribou Biosciences	CRBU	6.1	542	231	40%	-44%	7%	14	35	6.6 x	(105)	(113)	-	4.50	1.4 x
191	Jiangsu Changqing Agrichemical	002391-CN	0.7	479	722	56%	-18%	-17%	617	604	1.2 x	88	-	-	1.01	0.7 x
192	Nihon Nohyaku	4997-JP	4.7	388	473	17%	-17%	8%	759	-	-	-	-	-	6.39	0.7 x

193	Precigen	PGEN	1.4	344	287	36%	-42%	3%	27	7	43.3 x	(76)	(86)	-	0.58	2.4 x
194	Limin Group	002734-CN	0.9	339	632	105%	-24%	-18%	729	-	-	82	-	-	1.03	0.9 x
195	American Vanguard Corporation	AVD	10.9	314	544	107%	-23%	0%	610	580	0.9 x	73	54	10.1 x	12.48	0.9 x
196	Jiangsu Flag Chemical	300575-CN	0.8	280	469	151%	-18%	-23%	432	404	1.2 x	92	84	5.6 x	0.65	1.3 x
197	Cheerwin Group	6601-HK	0.2	237	(131)	53%	-9%	-6%	210	220	-0.6 x	10	-	-	0.31	0.6 x
198	Astec Lifesciences	533138-IN	11.6	227	279	61%	-12%	-12%	77	56	4.9 x	9	1	280.4 x	2.43	4.8 x
199	Insecticides	532851-IN	7.6	225	245	13%	-34%	-6%	218	244	1.0 x	15	22	11.3 x	4.07	1.9 x
200	Hokko Chemical	4992-JP	7.0	209	172	12%	-16%	1%	310	310	0.6 x	-	-	-	11.81	0.6 x
201	OAT Agrio	4979-JP	13.3	147	200	12%	-27%	17%	194	-	-	-	-	-	9.24	1.4 x
202	Fumakilla Limited	4998-JP	7.9	130	154	11%	-13%	-2%	452	448	0.3 x	26	26	6.0 x	9.19	0.9 x
203	Agro-Kanesho	4955-JP	9.4	126	66	45%	-12%	-3%	105	-	-	-	-	-	11.17	0.8 x
204	Plant Health Care	PHC-GB	0.0	16	11	218%	-13%	0%	12	12	0.9 x	(5)	(3)	-	0.03	1.4 x

			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																
Fertilizers		Ticker		282,435	370,199			-9%	372,852	302,440	1.2 x	82,256	47,853	7.7 x		1.3 x
205	BASF SE	BAS-DE	48.3	43,168	64,537	18%	-	-	92,056	75,177	0.9 x	11,417	8,039	8.0 x	47.30	1.0 x
206	DuPont de Nemours	DD	61.8	26,577	33,969	27%	-1%	-	12,068	12,159	2.8 x	2,942	2,912	11.7 x	56.45	1.1 x
207	Nutrien Ltd.	NTR-CA	50.2	24,815	38,920	66%	-4%	-	37,012	28,461	1.4 x	12,170	6,167	6.3 x	51.45	1.0 x
208	Industries of Qatar Co.	IQCD-QA	3.3	19,940	16,079	21%	10%	-	3,225	3,391	4.7 x	870	1,205	13.3 x	1.81	1.8 x
209	SABIC Agri-Nutrients	2020-SA	34.2	16,274	14,134	14%	-4%	-	5,053	2,913	4.9 x	2,967	1,242	11.4 x	9.83	3.5 x
210	CF Industries Holdings	CF	75.5	14,427	16,997	21%	20%	-	11,186	6,571	2.6 x	5,880	2,790	6.1 x	29.96	2.5 x
211	Qinghai Salt Lake	000792-CN	2.0	10,851	9,422	92%	-9%	-	4,474	3,038	3.1 x	3,136	1,525	6.2 x	0.76	2.6 x
212	Mosaic Company	MOS	30.7	10,037	13,533	87%	-3%	-	19,125	13,670	1.0 x	6,218	2,674	5.1 x	36.70	0.8 x
213	Eastman Chemical	EMN	83.6	9,906	14,649	9%	18%	-	9,210	9,437	1.6 x	1,591	1,804	8.1 x	45.16	1.9 x
214	Yara International ASA	YAR-NO	33.4	8,511	11,610	43%	-6%	-	15,547	15,299	0.8 x	1,692	2,172	5.3 x	28.53	1.2 x
215	Shandong Hualu-Hengsheng	600426-CN	3.4	7,210	8,056	66%	-4%	-	4,397	3,924	2.1 x	1,369	958	8.4 x	1.86	1.8 x
216	Fertiglobe plc	FERTIGLOBE-AE	0.8	6,306	6,738	53%	-5%	-	5,028	2,435	2.8 x	2,481	972	6.9 x	0.19	3.9 x
217	OCI NV	OCI-NL	28.9	6,101	9,762	20%	33%	-	9,713	5,120	1.9 x	3,803	1,175	8.3 x	6.10	4.7 x
218	Mitsui Chemicals	4183-JP	29.9	6,010	9,740	4%	23%	-	13,891	11,665	0.8 x	1,620	1,268	7.7 x	29.66	1.0 x
219	Sociedad Quimica	SQM	42.1	6,008	6,968	133%	-8%	-	10,711	7,624	0.9 x	5,840	3,382	2.1 x	18.38	2.3 x
220	ICL Group	ICL-IL	4.6	5,941	8,344	68%	-7%	-	10,015	7,455	1.1 x	4,007	1,706	4.9 x	4.60	1.0 x

221	Nissan Chemical	4021-JP	40.5	5,664	5,607	16%	17%	4%	1,671	1,523	3.7 x	463	418	13.4 x	10.71	3.8 x
222	Yunnan Yuntianhua	600096-CN	2.2	4,027	6,331	62%	10%	0%	10,996	9,870	0.6 x	1,654	1,257	5.0 x	1.38	1.6 x
223	Sumitomo Chemical	4005-JP	2.4	3,959	15,051	50%	17%	-1%	21,210	17,065	0.9 x	1,185	(197)	-	4.86	0.5 x
224	Abou Kir Fertilizers & Chemical	ABUK-EG	3.1	3,957	3,101	12%	63%	16%	698	734	4.2 x	378	381	8.1 x	0.52	6.1 x
225	Coromandel	506395-IN	12.7	3,724	3,361	23%	19%	16%	3,599	2,727	1.2 x	355	294	11.4 x	3.71	3.4 x
226	Incitec Pivot Limited	IPL-AU	1.8	3,454	4,446	39%	-4%	-8%	3,832	3,575	1.2 x	775	612	7.3 x	2.19	0.8 x
227	Scotts Miracle-Gro	SMG	56.3	3,189	6,064	58%	22%	12%	3,551	3,611	1.7 x	428	548	11.1 x	(6.80)	-8.3 x
228	Tata Chemicals Limited	500770-IN	12.4	3,152	3,816	11%	-9%	-7%	2,052	1,888	2.0 x	469	353	10.8 x	10.12	1.2 x
229	K+S AG	SDF-DE	14.2	2,542	2,365	72%	-8%	-7%	6,087	4,166	0.6 x	2,620	750	3.2 x	39.08	0.4 x
230	Sichuan New Energy Power	000155-CN	1.4	2,056	3,277	101%	16%	26%	553	688	4.8 x	330	360	9.1 x	0.56	2.5 x
231	Chambal Fertilisers & Chemicals	500085-IN	4.4	1,837	1,586	9%	32%	-2%	3,363	2,272	0.7 x	220	267	5.9 x	2.23	2.0 x
232	YONFER Agricultural Technology	000902-CN	1.4	1,802	1,756	29%	11%	-7%	2,319	2,182	0.8 x	304	334	5.2 x	1.01	1.4 x
233	Andersons	ANDE	52.7	1,779	2,216	12%	32%	-8%	17,325	15,800	0.1 x	407	367	6.0 x	36.71	1.4 x
234	Gujarat State Fertilizers & Chemicals	500690-IN	3.6	1,436	1,146	8%	61%	24%	1,374	1,121	1.0 x	-	101	11.4 x	3.73	1.0 x
235	E.I.D.-Parry	500125-IN	7.5	1,335	1,488	6%	30%	12%	350	355	4.2 x	32	31	48.4 x	4.51	1.7 x
236	Hubei Yihua Chemical	000422-CN	1.2	1,233	2,293	104%	16%	21%	3,010	2,429	0.9 x	547	243	9.4 x	0.86	1.3 x
237	Chengdu Wintrue	002539-CN	1.0	1,218	1,979	86%	15%	13%	2,980	2,825	0.7 x	385	315	6.3 x	0.94	1.1 x
238	Sichuan Development Lomon	002312-CN	0.8	1,114	1,842	109%	17%	17%	1,448	1,069	1.7 x	263	167	11.0 x	0.67	1.2 x
239	Deepak Fertilisers & Petrochemicals	500645-IN	7.4	940	1,275	15%	19%	-9%	1,372	1,034	1.2 x	263	135	9.5 x	4.95	1.5 x

240	Compass Minerals	CMP	22.5	929	1,758	83%	-	-	1,205	1,241	1.4 x	201	208	8.5 x	11.15	2.0 x
241	Paradeep Phosphates Ltd.	543530-IN	1.0	782	1,211	8%	-	39%	1,613	1,484	0.8 x	99	78	15.4 x	0.51	1.9 x
242	Sinofert Holdings	297-HK	0.1	773	503	40%	-	14%	3,337	-	-	219	-	-	0.20	0.6 x
243	CVR Partners, LP	UAN	71.8	759	1,226	65%	-	16%	836	-	-	-	-	-	29.26	2.5 x
244	PetroVietnam Ca Mau Fertilizer	DCM-VN	1.3	686	300	20%	-	27%	675	508	0.6 x	246	76	3.9 x	0.77	1.7 x
245	Advansix	ASIX	25.4	684	937	73%	-	-6%	1,946	1,487	0.6 x	309	154	6.1 x	27.89	0.9 x
246	Anhui Sierfe Fertilizer	002538-CN	0.7	617	526	76%	-	22%	709	-	-	124	-	-	0.86	0.8 x
247	Engro Corporation Limited	ENGRO-PK	1.1	610	1,477	5%	-	32%	1,157	1,638	0.9 x	319	-	-	1.03	1.1 x
248	Grupa Azoty Spolka Akcyjna	ATT-PL	6.0	596	2,812	64%	-	18%	5,761	3,480	0.8 x	581	(300)	-	18.26	0.3 x
249	Engro Fertilizers Limited	EFERT-PK	0.4	583	648	7%	-	43%	577	775	0.8 x	128	-	-	0.10	4.2 x
250	Omnia Holdings Limited	OMN-ZA	3.5	579	499	3%	-	22%	1,461	1,210	0.4 x	147	121	4.1 x	3.42	1.0 x
251	LSB Industries	LXU	7.4	553	843	98%	-	-2%	902	583	1.4 x	415	138	6.1 x	7.16	1.0 x
252	PetroVietnam Fertilizer and Chemicals	DPM-VN	1.3	525	262	38%	-	14%	785	545	0.5 x	291	45	5.9 x	1.19	1.1 x
253	Fauji Fertilizer Company Limited	FFC-PK	0.4	516	339	7%	-	26%	417	579	0.6 x	161	-	-	0.40	1.0 x
254	China XLX Fertiliser Ltd.	1866-HK	0.4	510	2,445	51%	-	-7%	3,352	3,184	0.8 x	467	481	5.1 x	0.80	0.5 x
255	China BlueChemical Ltd	3983-HK	0.3	494	31	6%	-	22%	2,074	-	-	357	-	-	0.53	0.5 x
256	Kunming Chuan Jin Nuo Chemical	300505-CN	1.5	413	393	168%	-	-	366	-	-	78	-	-	1.21	1.2 x
257	Fatima Fertilizer Company	FATIMA-PK	0.1	252	249	13%	-	29%	501	-	-	142	-	-	0.19	0.6 x
258	Intrepid Potash	IPI	18.4	242	234	88%	-	-6%	303	235	1.0 x	142	41	5.8 x	56.33	0.3 x

259	Mangalore Chemicals & Fertilizers	530011-IN	1.7	206	209	8%	-	50%	19%	440	469	0.4 x	37	52	4.0 x	0.92	1.9 x
260	Itafos	IFOS-CA	1.0	183	255	69%	-	18%	-4%	593	460	0.6 x	225	130	2.0 x	1.63	0.6 x
261	Fauji Fertilizer Bin Qasim	FFBL-PK	0.1	124	143	22%	-	61%	16%	594	690	0.2 x	-	-	-	0.11	0.9 x
262	Valuence Holdings	9270-JP	7.4	100	141	190%	-	-7%	24%	509	566	0.2 x	-	-	-	4.25	1.7 x
263	Katakura & Co-op Agri	4031-JP	7.7	78	126	100%	-	10%	17%	375	-	-	-	-	-	18.01	0.4 x
264	Binh Dien Fertilizer	BFC-VN	1.1	60	100	7%	-	36%	3%	362	-	-	19	-	-	0.76	1.4 x
265	Verde AgriTech Ltd.	NPK-CA	0.9	46	70	477%	-	14%	26%	59	32	2.2 x	18	3	26.0 x	0.68	1.3 x
266	Neochim AD	NEOH-BG	13.1	35	5	72%	-	15%	-3%	353	-	-	50	-	-	31.49	0.4 x

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						% to High	% to Low	% YTD	FY0	FY1	EV/Sales	FY0	FY1	EV/ EBITDA	Book/ Share	P/ Book
Peer Set																
Food Processing		Ticker	691,063	866,698				0%	454,589	461,797	1.9 x	69,301	70,759	12.2 x		2.1 x
267	Nestle S.A.	NESN-CH	114.9	306,761	358,819	14%	-7%	1%	101,970	107,161	3.3 x	20,695	22,615	15.9 x	16.27	7.1 x
268	Unilever PLC	ULVR-GB	49.0	122,494	151,326	18%	-6%	1%	64,146	65,779	2.3 x	12,360	12,974	11.7 x	8.37	5.9 x
269	Ecolab	ECL	198.2	56,520	64,688	3%	-27%	0%	15,320	16,089	4.0 x	3,051	3,416	18.9 x	27.34	7.2 x
270	Danone SA	BN-FR	67.1	45,455	54,951	2%	-21%	9%	29,398	29,946	1.8 x	4,982	4,991	11.0 x	27.94	2.4 x
271	Ball Corporation	BALL	55.5	17,483	26,253	10%	-23%	-4%	14,029	13,979	1.9 x	2,108	2,129	12.3 x	12.49	4.4 x
272	Avery Dennison	AVY	199.5	16,062	19,136	5%	-20%	-1%	8,364	8,760	2.2 x	1,254	1,421	13.5 x	25.62	7.8 x
273	Packaging Corporation of America	PKG	165.9	14,867	16,962	7%	-26%	2%	7,802	7,934	2.1 x	1,604	1,620	10.5 x	43.38	3.8 x
274	Lamb Weston Holdings	LW	102.4	14,790	18,099	15%	-21%	-5%	5,351	6,900	2.6 x	1,226	1,592	11.4 x	11.55	8.9 x
275	International Paper Company	IP	35.8	12,398	19,497	10%	-19%	-1%	18,916	18,782	1.0 x	2,227	2,263	8.6 x	25.67	1.4 x
276	WestRock Company	WRK	40.3	10,327	18,394	8%	-33%	-3%	20,310	19,642	0.9 x	3,128	2,698	6.8 x	39.49	1.0 x
277	WH Group	288-HK	0.6	7,550	11,171	12%	-16%	-9%	28,136	26,763	0.4 x	2,760	2,263	4.9 x	0.75	0.8 x
278	Ingredion Incorporated	INGR	107.6	7,013	9,133	5%	-17%	-1%	8,160	8,111	1.1 x	1,196	1,239	7.4 x	55.11	2.0 x
279	Pilgrim's Pride	PPC	27.2	6,434	9,478	7%	-27%	-2%	17,468	17,309	0.5 x	1,633	997	9.5 x	13.00	2.1 x
280	Sprouts Farmers Market	SFM	50.4	5,116	6,516	4%	-40%	5%	6,404	6,830	1.0 x	485	524	12.4 x	10.97	4.6 x
281	Sealed Air Corporation	SEE	34.6	4,990	9,673	49%	-18%	-5%	5,642	5,473	1.8 x	1,210	1,101	8.8 x	2.83	12.2 x
282	Silgan Holdings	SLGN	45.9	4,893	8,796	20%	-17%	2%	5,988	6,084	1.4 x	887	926	9.5 x	16.73	2.7 x

283	Exponent	EXPO	88.2	4,464	4,359	23%	-27%	0%	497	487	8.9 x	151	142	30.6 x	6.98	12.6 x
284	SCG Packaging Public	SCGP-TH	0.9	3,812	5,442	76%	-4%	-16%	3,625	3,992	1.4 x	488	554	9.8 x	0.51	1.7 x
285	NH Foods Limited	2282-JP	34.6	3,563	4,698	5%	-22%	2%	9,372	8,710	0.5 x	367	539	8.7 x	34.54	1.0 x
286	CJ CheilJedang	097950-KR	218.8	3,294	14,415	26%	-9%	-11%	23,550	21,947	0.7 x	2,355	2,068	7.0 x	339.28	0.6 x
287	John Bean Technologies	JBT	98.8	3,144	3,266	27%	-9%	-1%	2,166	1,666	2.0 x	280	271	12.0 x	43.10	2.3 x
288	Suedzucker AG	SZU-DE	14.2	2,897	6,631	46%	-3%	-9%	10,190	11,419	0.6 x	1,148	1,453	4.6 x	15.45	0.9 x
289	Asia-Potash International	000893-CN	2.9	2,681	2,802	52%	-9%	-21%	504	584	4.8 x	307	306	9.2 x	1.68	1.7 x
290	Cal-Maine Foods	CALM	55.4	2,449	2,103	12%	-24%	-3%	3,146	2,100	1.0 x	1,070	261	8.0 x	33.20	1.7 x
291	Sao Martinho S.A.	SMT03-BR	5.7	2,020	3,469	49%	-22%	-4%	1,415	1,407	2.5 x	746	679	5.1 x	3.79	1.5 x
292	MGP Ingredients	MGPI	85.0	1,870	2,170	47%	-5%	-14%	782	827	2.6 x	169	195	11.1 x	37.23	2.3 x
293	Hawkins	HWKN	66.6	1,394	1,442	10%	-43%	-5%	935	914	1.6 x	-	135	10.7 x	18.94	3.5 x
294	Balrampur Chini Mills	500038-IN	4.8	961	1,006	22%	-11%	-3%	568	657	1.5 x	63	96	10.5 x	1.88	2.5 x
295	United Natural Foods	UNFI	14.9	886	4,442	188%	-14%	-8%	30,272	31,029	0.1 x	640	499	8.9 x	28.60	0.5 x
296	Mitsui DM Sugar	2109-JP	23.2	758	859	1%	-36%	11%	1,198	-	-	-	-	-	23.36	1.0 x
297	Calavo Growers	CVGW	26.1	463	561	49%	-18%	-11%	972	987	0.6 x	31	49	11.5 x	11.76	2.2 x
298	Jalles Machado SA	JALL3-BR	1.5	454	996	28%	-18%	-7%	327	401	2.5 x	205	253	3.9 x	1.34	1.1 x
299	Rogers Sugar	RSI-CA	4.2	437	749	14%	-13%	2%	815	901	0.8 x	82	89	8.5 x	2.18	1.9 x
300	Origin Enterprises Plc	OIZ-IE	3.7	410	415	29%	-13%	-3%	2,600	2,555	0.2 x	120	124	3.3 x	3.99	0.9 x
301	Bonduelle SCA	BON-FR	10.7	349	804	44%	-8%	-10%	2,528	2,657	0.3 x	156	179	4.5 x	26.27	0.4 x

302	Natural Grocers by Vitamin Cottage	NGVC	15.0	340	692	19%	-34%	-7%	1,141	1,188	0.6 x	62	70	9.9 x	6.76	2.2 x
303	Ranpak Holdings	PACK	4.1	328	707	91%	-36%	-29%	344	333	2.1 x	67	68	10.3 x	6.99	0.6 x
304	Khon Kaen Sugar	KSL-TH	0.1	311	720	61%	-2%	-9%	533	531	1.4 x	82	68	10.5 x	0.13	0.5 x
305	Select Harvests Limited	SHV-AU	2.5	298	564	29%	-26%	24%	136	166	3.4 x	(62)	35	15.9 x	2.25	1.1 x
306	Scales Corp. Ltd.	SCL-NZ	2.0	293	349	19%	-19%	-6%	385	350	1.0 x	47	42	8.4 x	1.52	1.3 x
307	Benson Hill	BHIL	0.2	36	146	1311%	-27%	-1%	381	444	0.3 x	(82)	(52)	-	0.58	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																
AgriFinance		Ticker		13,593	19,613			-3%	8,606	8,814	2.2 x	1,507	1,533	12.8 x		0.8 x
308	Kuala Lumpur Kepong	2445-MY	4.7	5,078	7,077	13%	-5%	-1%	5,055	5,289	1.3 x	580	665	10.6 x	2.81	1.7 x
309	Heilongjiang Agriculture	600598-CN	1.6	2,818	2,108	35%	-5%	-6%	620	653	3.2 x	173	180	11.7 x	0.61	2.6 x
310	Simmons First National	SFNC	19.0	2,379	4,050	22%	30%	-4%	826	832	4.9 x	-	-	-	27.37	0.7 x
311	SLC Agricola S.A.	SLCE3-BR	3.9	1,714	3,092	23%	14%	1%	1,669	1,704	1.8 x	578	551	5.6 x	2.38	1.6 x
312	BrasilAgro Cia Brasileira de Propriedades Agrícolas	AGRO3-BR	5.0	512	593	21%	11%	-7%	232	196	3.0 x	104	61	9.7 x	4.01	1.2 x
313	Gladstone Land Corp.	LAND	14.2	507	1,128	35%	-6%	-2%	89	90	12.5 x	72	75	15.1 x	20.41	0.7 x
314	Tejon Ranch Co.	TRC	15.8	422	413	27%	-3%	-8%	79	43	9.6 x	-	-	-	17.42	0.9 x
315	Great Ajax Corp.	AJX	5.9	162	1,152	55%	31%	11%	36	6	177.9 x	-	-	-	11.07	0.5 x

						Price Performance			Sales			EBITDA			Book Value	
			Price	Mkt Cap (\$ Mns)	Ent Val (\$ Mns)	% to High	% to Low	% YTD	FY0	FY1	EV/Sales	FY0	FY1	EV/EBITDA	Book/Share	P/Book
Peer Set																
Food Producers			Ticker	51,192	60,465			-1%	42,823	38,216	1.6 x	7,188	5,844	10.3 x		1.1 x
316	Tata Consumer Products	500800-IN	13.5	12,500	12,421	9%	-38%	0%	1,684	1,841	6.7 x	230	273	45.5 x	2.09	6.4 x
317	Sime Darby Plantation	5285-MY	0.9	6,462	8,102	11%	-7%	-4%	4,715	3,877	2.1 x	1,079	709	11.4 x	0.56	1.7 x
318	Treasury Wine Estates	TWE-AU	7.1	5,777	6,072	40%	-7%	-3%	1,573	1,745	3.5 x	462	533	11.4 x	3.50	2.0 x
319	IOI Corp. Bhd.	1961-MY	0.8	5,302	5,663	10%	-6%	0%	2,492	2,423	2.3 x	422	392	14.5 x	0.38	2.2 x
320	PPB Group Bhd.	4065-MY	3.1	4,349	4,334	34%	-3%	-3%	1,371	1,308	3.3 x	63	78	55.6 x	4.01	0.8 x
321	Golden Agri-Resources	E5H-SG	0.2	2,594	4,684	10%	-14%	4%	11,439	9,625	0.5 x	1,788	1,480	3.2 x	0.40	0.5 x
322	First Resources Ltd	EB5-SG	1.1	1,754	1,812	11%	-10%	3%	1,225	1,053	1.7 x	505	329	5.5 x	0.86	1.3 x
323	United Plantations Bhd.	2089-MY	4.2	1,741	1,573	1%	-24%	8%	562	435	3.6 x	213	167	9.4 x	1.52	2.8 x
324	Genting Plantations Bhd.	2291-MY	1.3	1,208	1,471	6%	-19%	9%	723	594	2.5 x	230	139	10.6 x	1.25	1.1 x
325	Fresh Del Monte Produce	FDP	24.6	1,183	1,724	32%	-13%	-6%	4,442	4,378	0.4 x	246	266	6.5 x	42.19	0.6 x
326	FGV Holdings Berhad	5222-MY	0.3	1,103	2,016	21%	-10%	1%	5,708	4,170	0.5 x	610	224	9.0 x	0.34	0.9 x
327	Adecoagro S.A.	AGRO	10.2	1,101	2,204	22%	-28%	-8%	1,342	1,359	1.6 x	418	469	4.7 x	11.83	0.9 x
328	Costa Group Holdings	CGC-AU	2.1	977	1,609	8%	-29%	-1%	936	952	1.7 x	145	136	11.9 x	1.11	1.9 x
329	PT Astra Agro Lestari	AALI-ID	0.4	842	970	29%	-2%	-4%	1,430	1,311	0.7 x	232	152	6.4 x	0.72	0.6 x
330	Bumitama Agri Ltd.	P8Z-SG	0.5	809	1,141	8%	-15%	2%	1,039	1,033	1.1 x	371	285	4.0 x	0.48	1.0 x
331	PT Sawit Sumbermas Sarana	SSMS-ID	0.1	718	1,032	64%	-21%	11%	485	-	-	159	-	-	0.04	1.8 x
332	Mission Produce	AVO	10.0	707	941	40%	-18%	-1%	954	881	1.1 x	48	69	13.5 x	7.12	1.4 x

333	Vital Farms, Inc.	VITL	14.4	598	518	18%	-30%	-8%	362	467	1.1 x	16	43	12.0 x	4.40	3.3 x
334	Hokuto Corporation	1379-JP	12.3	411	529	17%	-6%	5%	536	-	-	-	-	-	11.24	1.1 x
335	Limoneira Company	LMNR	18.1	326	389	19%	-23%	-12%	180	199	2.0 x	(1)	17	23.1 x	9.95	1.8 x
336	TSH Resources Bhd.	9059-MY	0.2	298	371	21%	-9%	2%	295	230	1.6 x	76	54	6.9 x	0.31	0.7 x
337	Alico, Inc.	ALCO	29.4	224	358	5%	-23%	1%	40	78	4.6 x	(16)	15	24.7 x	37.78	0.8 x
338	AUGA group AB	AUG1L-LT	0.3	76	200	71%	-6%	-5%	96	90	2.2 x	21	2	92.7 x	0.31	1.1 x
339	Seeka Limited	SEK-NZ	1.6	68	211	25%	-21%	2%	217	166	1.3 x	28	15	14.3 x	4.04	0.4 x
340	Borges Agricultural & IndustrialNuts	BAIN-ES	2.7	63	120	44%	-7%	-4%	-	-	-	-	-	-	2.89	0.9 x

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