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EMERGING TECH RESEARCH

Agtech

Q3 2021 VC Update





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This report serves as a quarterly snapshot of the agtech industry as a whole in Q3 2021. For a higher-level, detailed analysis of the agtech industry and its various subsectors, please see our latest **annual edition**.



Vertical overview

The agtech sector consists of technologies that focus on increasing crop yield, improving farming efficiency and resilience, and providing financial resources for agricultural operations. These technologies include a broad range of products and services, such as software, biotech inputs, sensors, machinery, and indoor farming equipment. For plants, the scope of agtech spans from the technologies used to develop new seed varieties and traits to the machines used to harvest crops. Our purview of animal agtech extends from breeding to livestock monitoring tools. Three factors driving record capital into the agtech industry include increased concern for food security, data-enabled productivity gains, and environmentally friendly agricultural techniques:

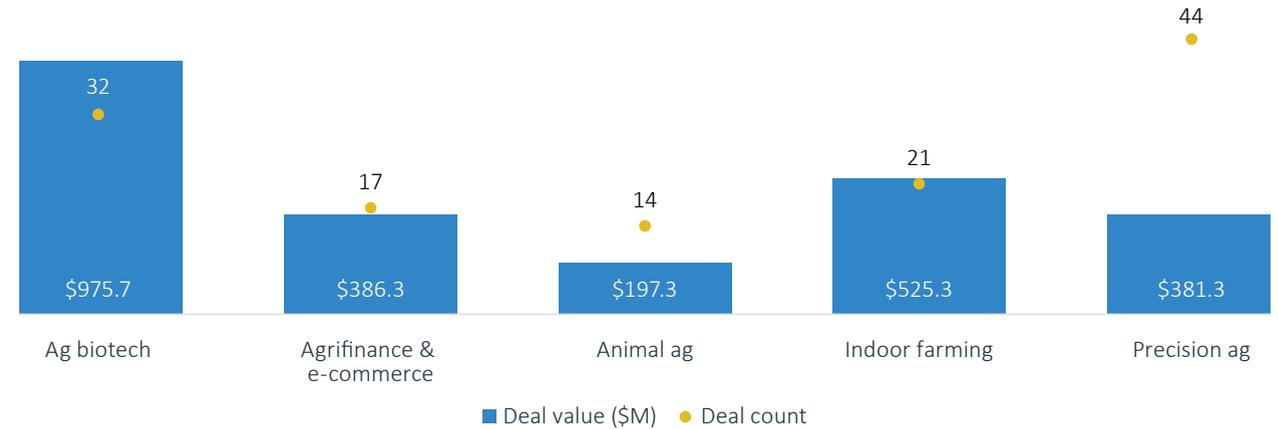
Food security

Disrupted supply chains have enhanced focus on technologies that enable local and adaptable food production in order to reduce the reliance on imports and the impact from supply chain disruptions. Controlled environment agriculture (indoor farming) represents a key technology that enables year-round local and fresh produce production, with startup **Bowery** acting as a leader in the space. The company raised \$320.7 million in Q3 and primarily operates in cities in the Mid-Atlantic region of the US.

Productivity gains

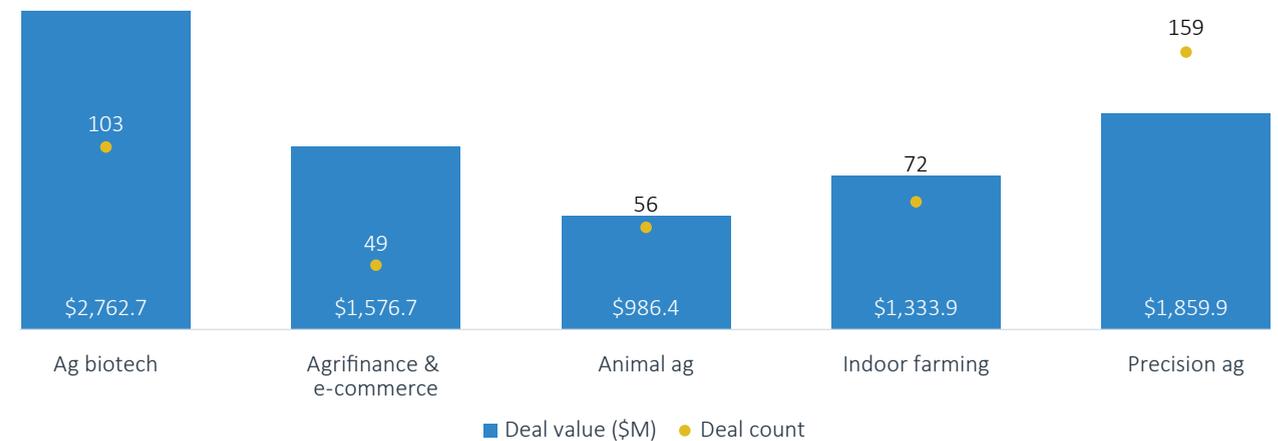
Expanding global populations lead to increased food demand, while the rise in extreme weather events and shifting climates negatively impact food supply. Agtech tools promise to help farmers collect data and translate it into decision-making inputs to improve outcomes and increase productivity. Examples of productivity-focused technologies include crop management

Figure 1. Q3 2021 AGTECH VC DEAL ACTIVITY BY SEGMENT



Source: PitchBook | Geography: Global | *As of September 30, 2021

Figure 2. TRAILING-12-MONTH (TTM) AGTECH VC DEAL ACTIVITY BY SEGMENT



Source: PitchBook | Geography: Global | *As of September 30, 2021



VERTICAL OVERVIEW

software, which leverages climate, soil, pest, and other data inputs to mitigate risk and increase productivity. Startup **Semios**, which raised \$79.0 million in late-stage VC funding in Q3, appears to be gaining traction as an emerging provider of crop management software.

Environmentally friendly techniques

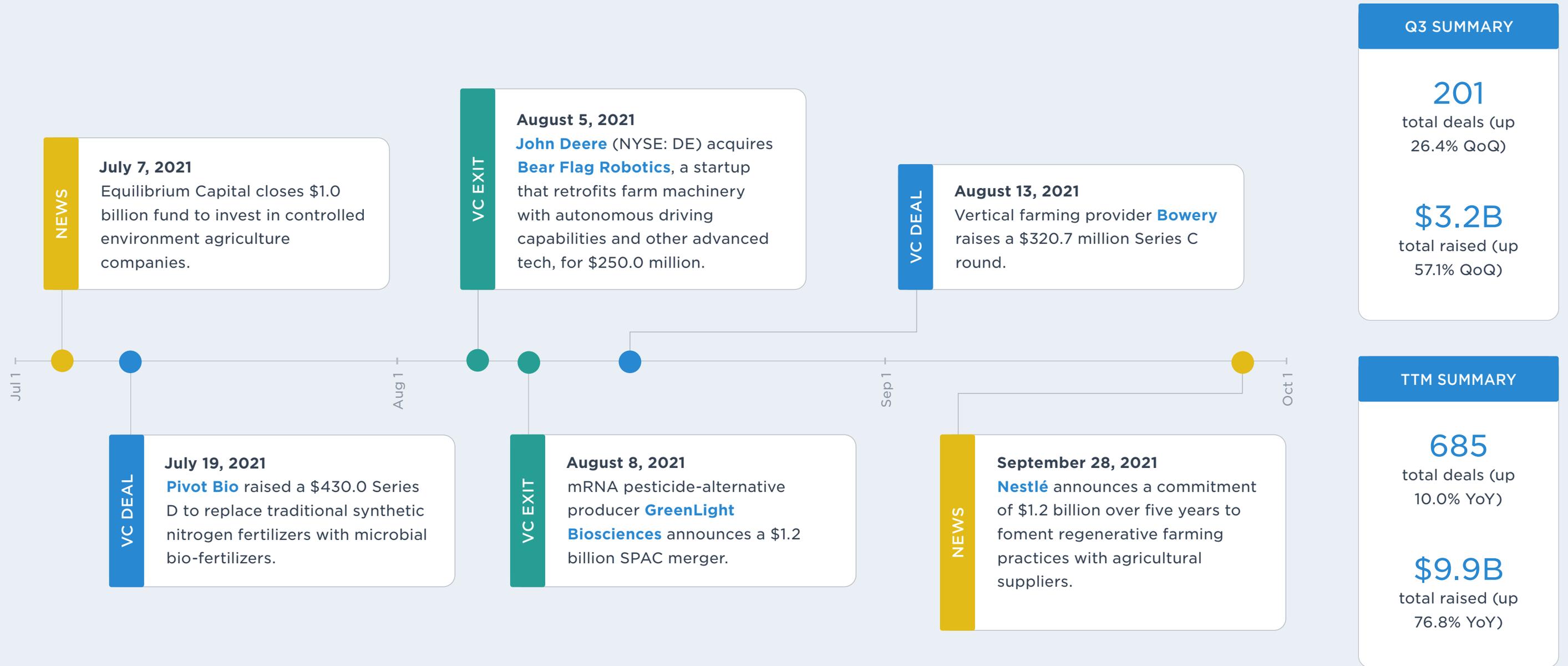
The agriculture industry is a significant contributor to greenhouse gas emissions, and this is creating opportunities for new technologies and techniques such as carbon monitoring tools, biochemicals, or field machinery that improve soil health, or feed additives that reduce enteric fermentation. Startups such as **Pivot Bio**, which raised a \$430.0 million Series D in Q3, are developing products including microbial bio-fertilizers intended to improve soil health and crop resilience while also increasing the soil's ability to sequester atmospheric carbon.

The COVID-19 pandemic has driven investment into agtech as a solution to address vulnerabilities in agricultural supply chains, increase automation, and improve safety. For example, indoor farming technologies have experienced significant capital flows as investors back models poised to help strengthen food systems and make them more adaptable to unexpected disruptions.

Climate change is also expected to become a dominant driver of agtech investment. Greenhouse gases—which originate in part from agriculture practices—are causing warmer climates and creating increasingly frequent extreme weather events that can severely impact the farming industry. Agtech solutions, including biochemicals, advanced farm equipment, and precision agriculture tools, seek to minimize environmental impact and contribute to the development of healthier and more resilient crops.



Q3 2021 timeline



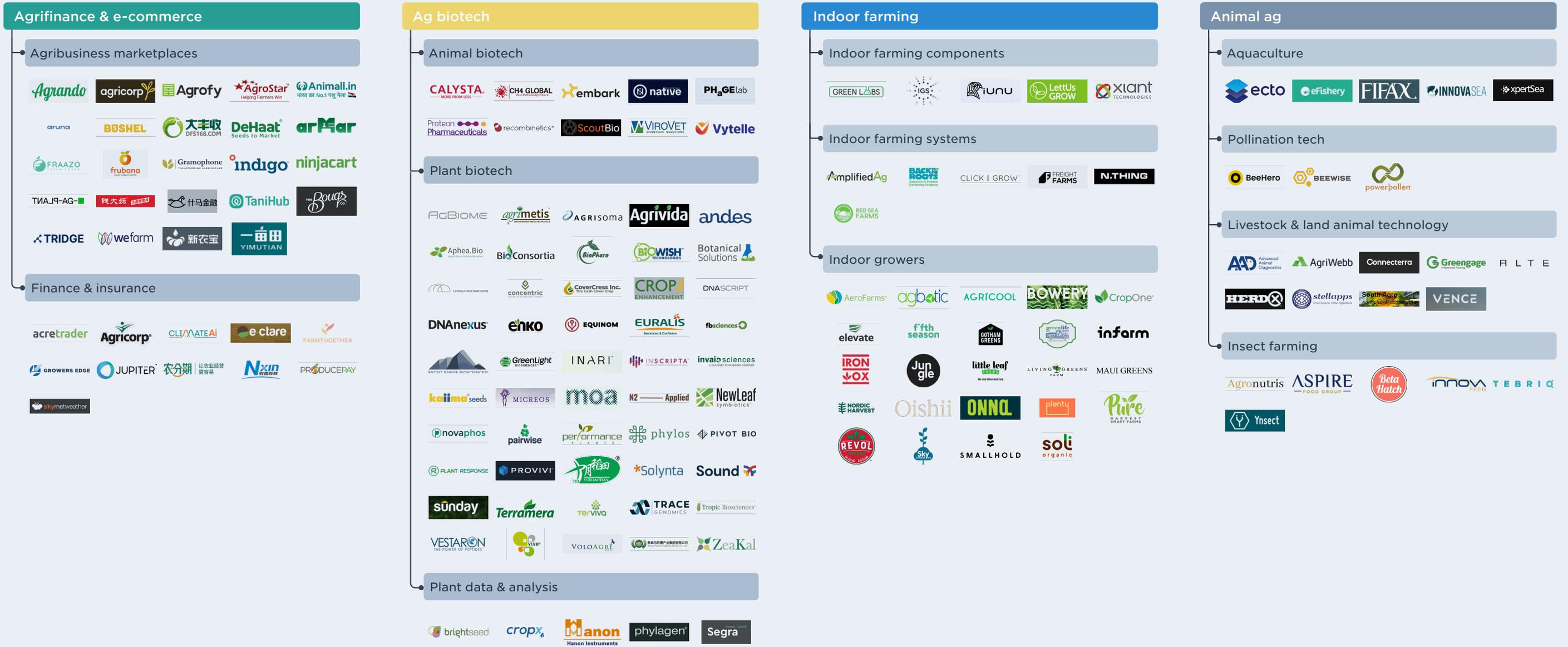
1: "US Drought Monitor," National Drought Mitigation Center, Curtis Riganti, August 19, 2021.



Agtech VC ecosystem market map

Click to view interactive market map on the PitchBook platform

Market map is a representative overview of venture-backed or growth-stage providers in each segment. Companies listed have received venture capital or other notable private investments.

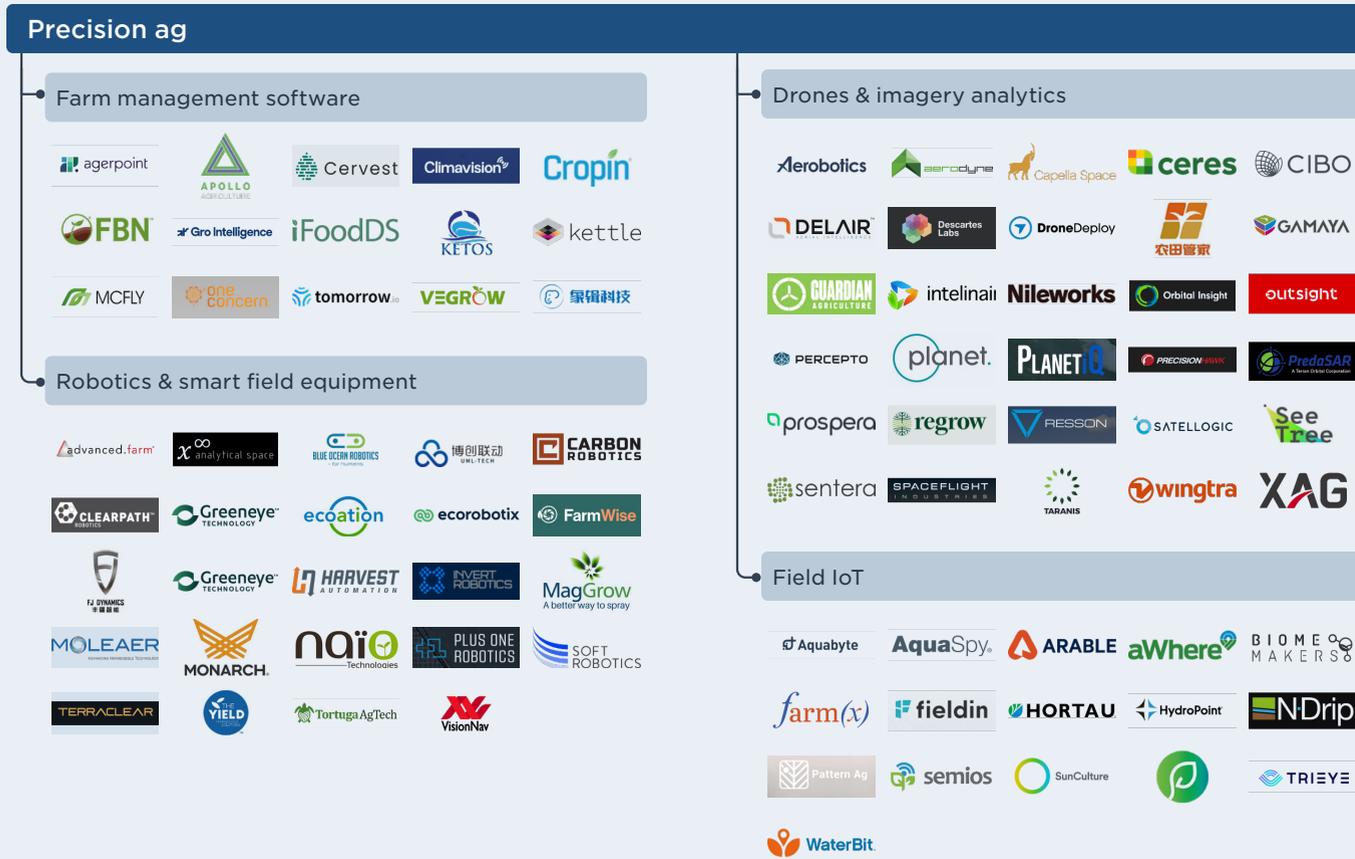




Agtech VC ecosystem market map

Click to view interactive market map on the PitchBook platform

Market map is a representative overview of venture-backed or growth-stage providers in each segment. Companies listed have received venture capital or other notable private investments.





VC activity

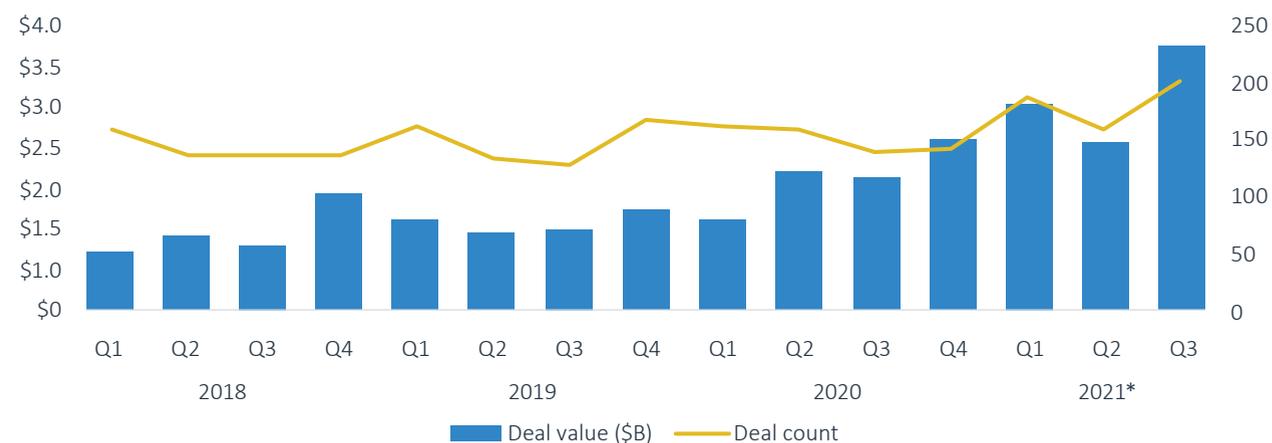
Funding soared to a record high in Q3 2021, as agtech companies globally logged \$3.2 billion across 201 deals, up 57.0% QoQ. Annually, deal values landed at \$7.8 billion YTD, surpassing 2020 year-end totals by 21.3%, with one quarter remaining in the year. Deal count totaled 545 deals in 2021 YTD, on pace to reach a decade high.

Ag biotech startups once again attracted the majority (39.6%) of quarterly VC funding, although precision ag startups drew the majority of deals by count (34.4%). **Pivot Bio** logged the largest round of the quarter, a \$430.0 million Series D led by Temasek Holdings. The company is developing microbial biochemicals to provide an environmentally friendly alternative to synthetic fertilizers. Investors are focusing on agtech solutions that reduce atmospheric carbon, either by mitigating factors that lead to carbon emissions, such as enteric fermentation, or improving soil health and other carbon-capture tools and strategies.

The rise in agtech funding has elevated median deal sizes and valuations. The median early-stage VC deal size in 2021 sits at \$4.0 million, up 44.9% YoY, while the late-stage VC deal size median rose to \$10.6 million, up 52.3% YoY. The angel & seed median pre-money valuation reached \$5.9 million in Q3 2021, up 28.4% YoY, and the late-stage median pre-money valuation reached \$80.0 million, double the 2020 median.

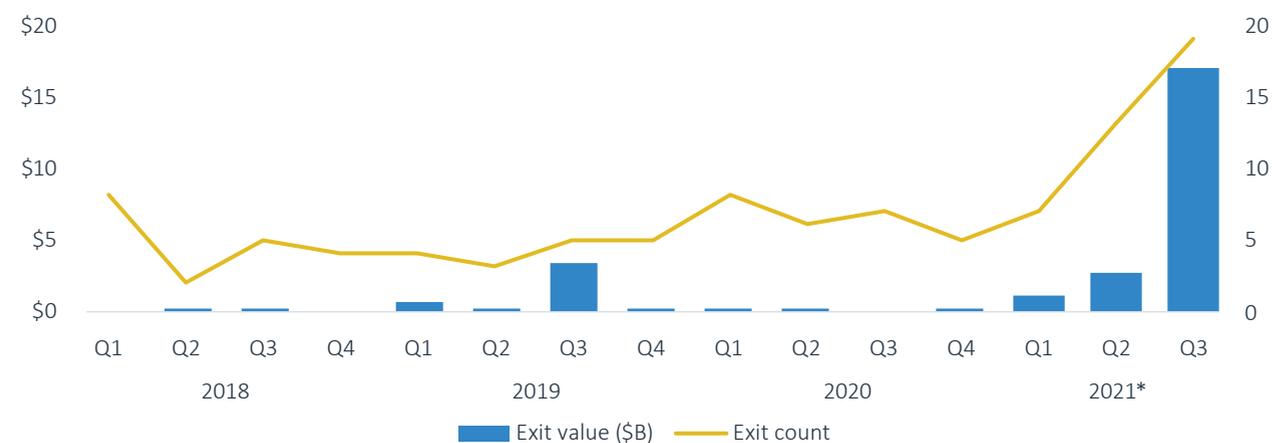
Agtech exit activity rose for the third straight quarter, with 19 deals accounting for \$16.9 billion in exits. The largest exit of the quarter was **Ginkgo Bioworks'** \$1.7 billion SPAC merger. The company's cell editing platform is used to pursue livestock feed innovation and microbiomics alternatives to synthetic agricultural chemicals, among other objectives. Other key companies that exited in Q3 include **Benson Hill** (NYSE: BHIL), **Bear Flag Robotics**, and **American Robotics**.

Figure 3. QUARTERLY AGTECH VC DEAL ACTIVITY



Source: PitchBook | Geography: Global | *As of September 30, 2021

Figure 4. QUARTERLY AGTECH VC EXIT ACTIVITY

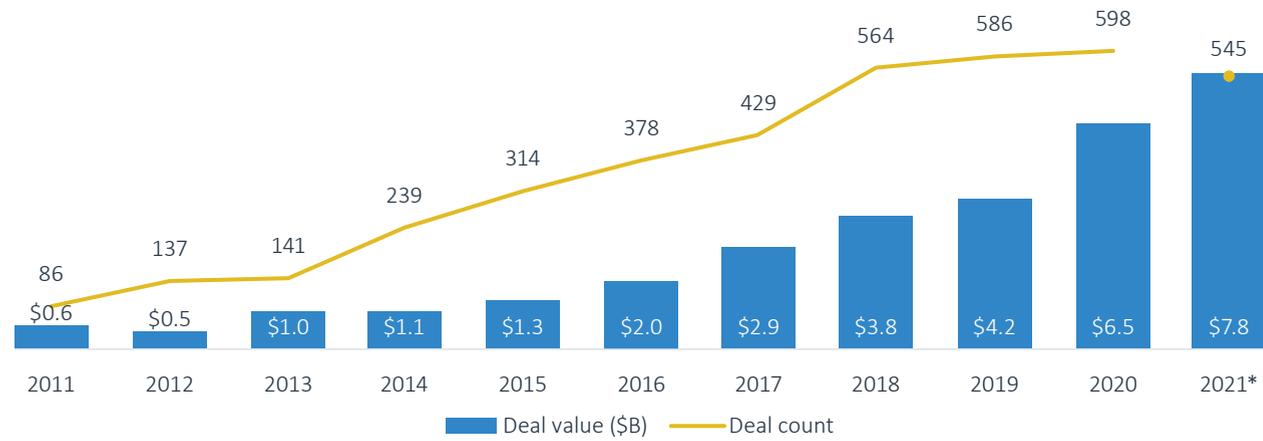


Source: PitchBook | Geography: Global | *As of September 30, 2021



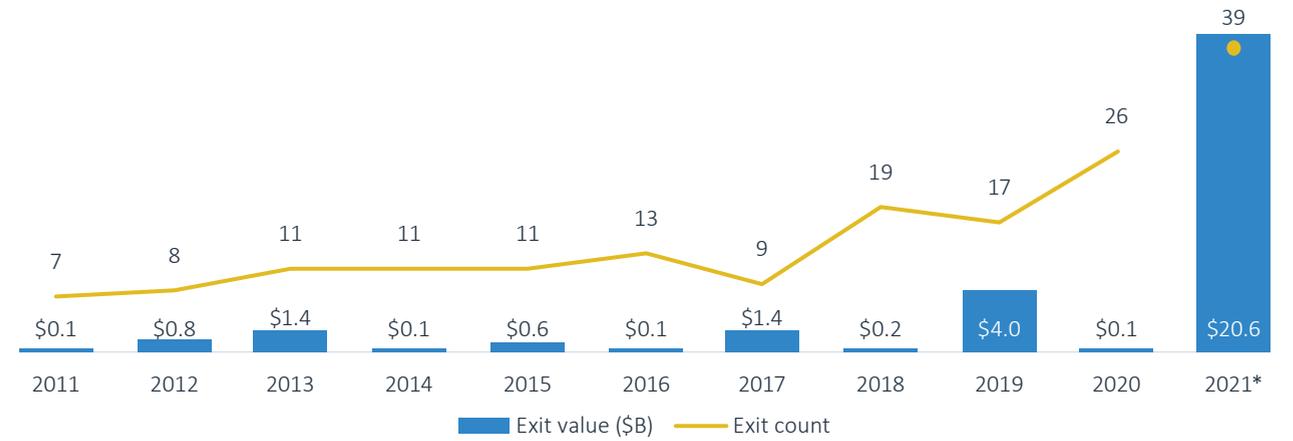
VC ACTIVITY

Figure 5. AGTECH VC DEAL ACTIVITY



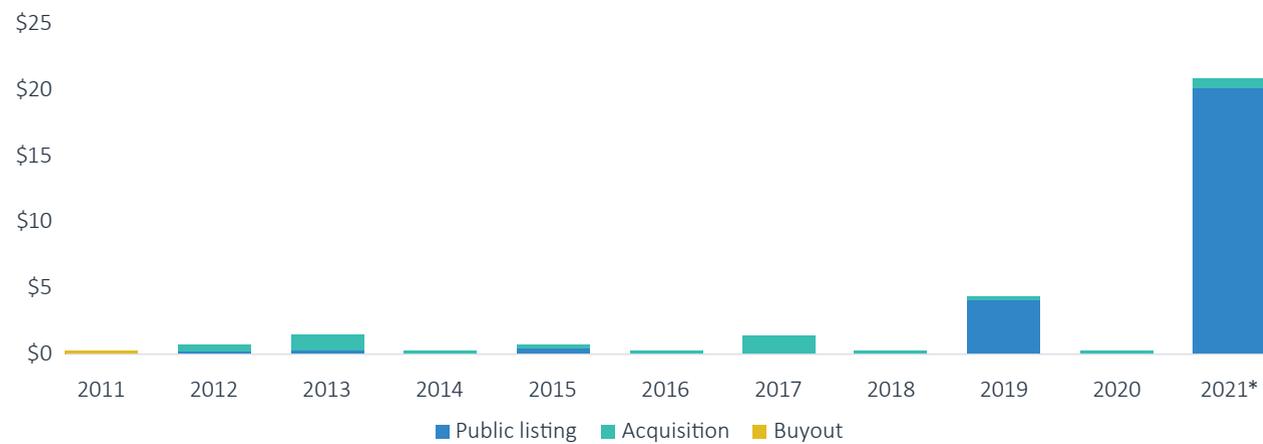
Source: PitchBook | Geography: Global | *As of September 30, 2021

Figure 6. AGTECH VC EXIT ACTIVITY



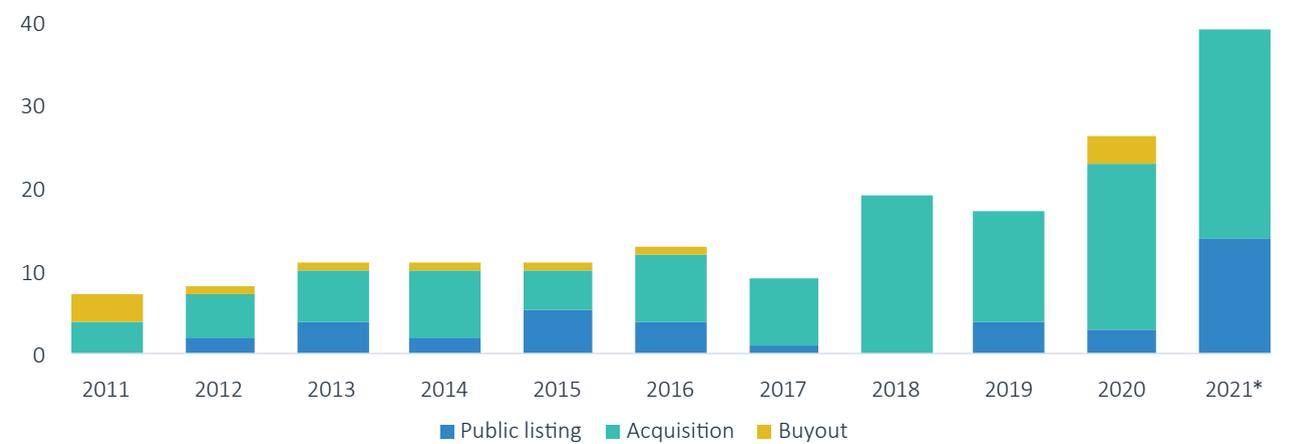
Source: PitchBook | Geography: Global | *As of September 30, 2021

Figure 7. AGTECH VC EXIT VALUE (\$B) BY TYPE



Source: PitchBook | Geography: Global | *As of September 30, 2021

Figure 8. AGTECH VC EXIT COUNT BY TYPE

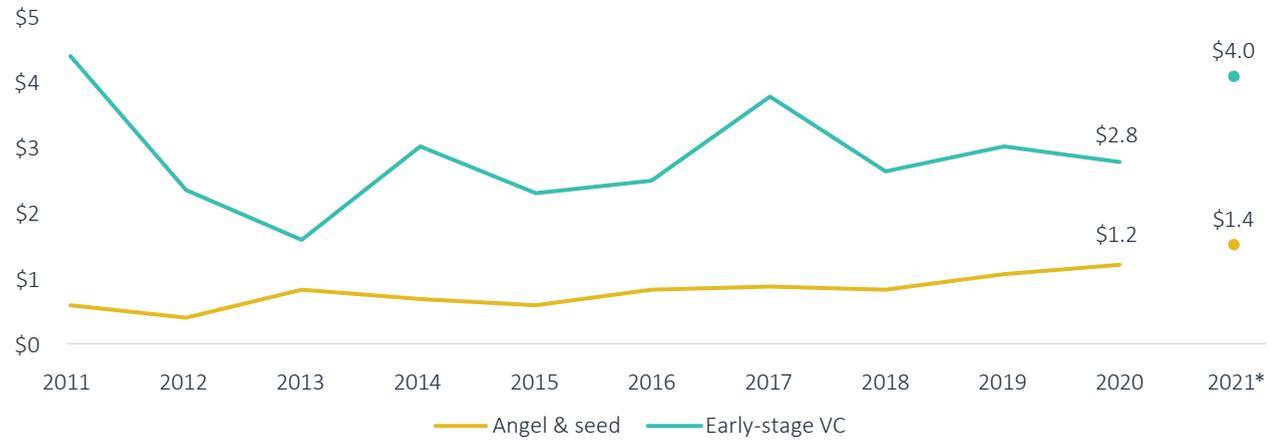


Source: PitchBook | Geography: Global | *As of September 30, 2021



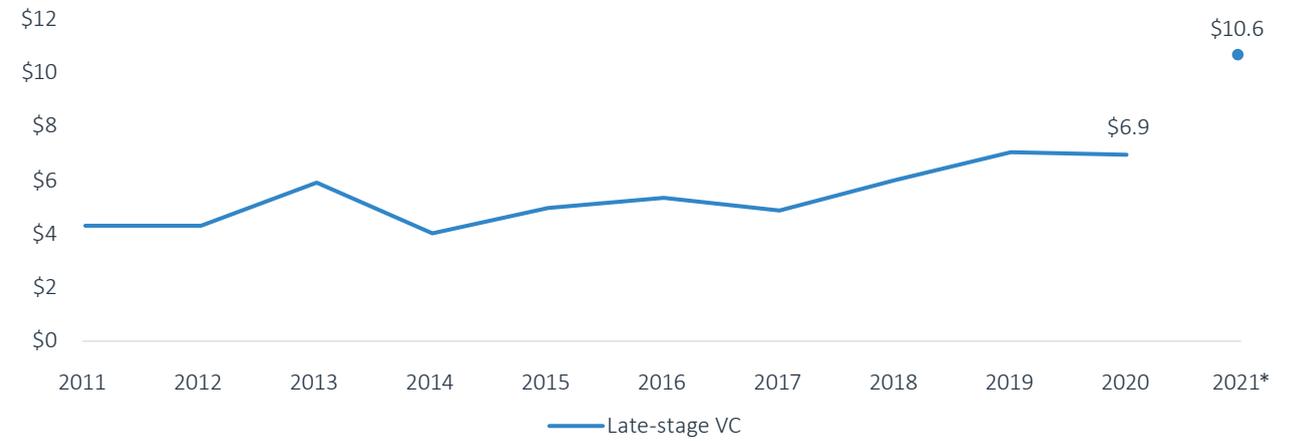
VC ACTIVITY

Figure 9. MEDIAN AGTECH ANGEL & SEED AND EARLY-STAGE VC DEAL SIZES (\$M)



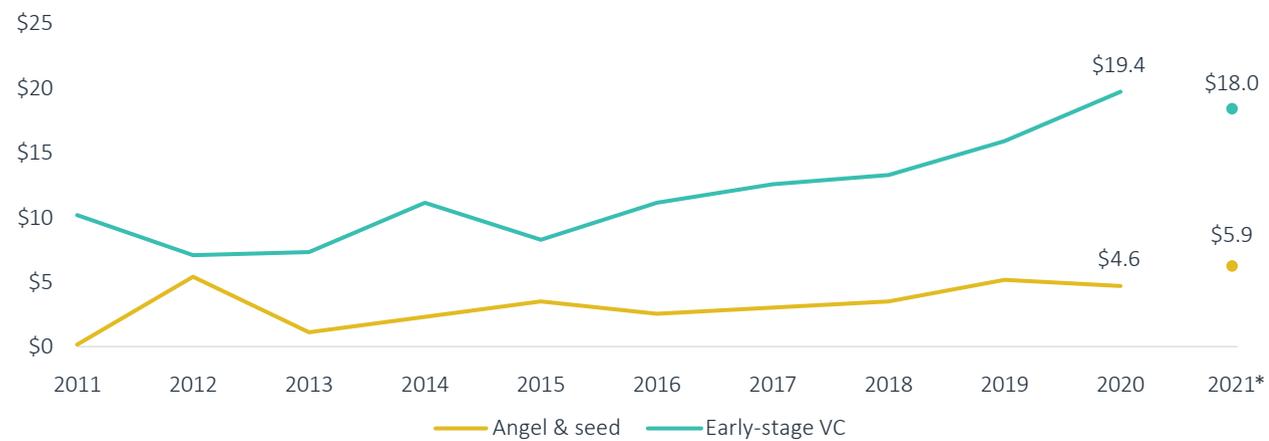
Source: PitchBook | Geography: Global | *As of September 30, 2021

Figure 10. MEDIAN LATE-STAGE VC DEAL SIZES (\$M)



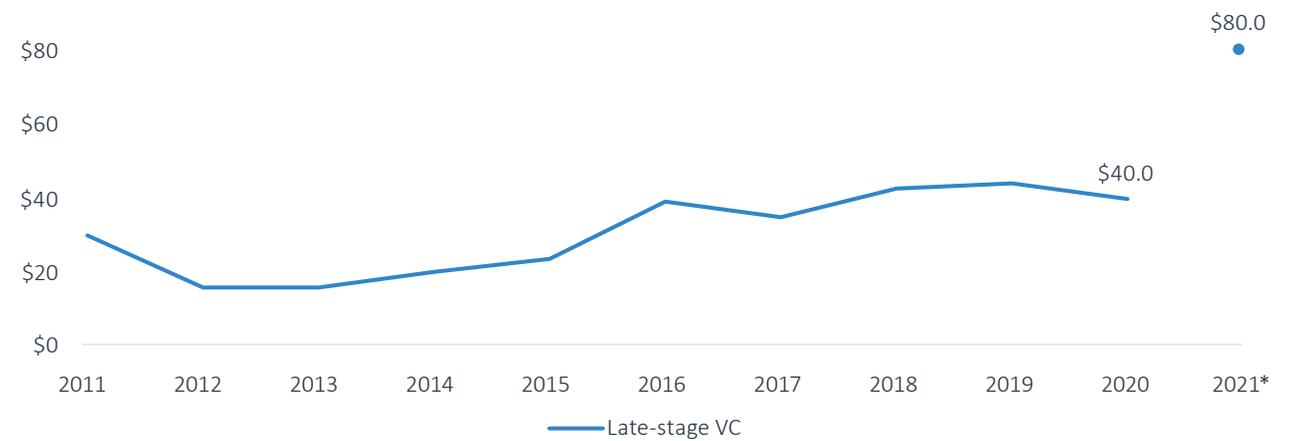
Source: PitchBook | Geography: Global | *As of September 30, 2021

Figure 11. MEDIAN AGTECH ANGEL & SEED AND EARLY-STAGE VC PRE-MONEY VALUATIONS (\$M)



Source: PitchBook | Geography: Global | *As of September 30, 2021

Figure 12. MEDIAN LATE-STAGE VC PRE-MONEY VALUATIONS (\$M)



Source: PitchBook | Geography: Global | *As of September 30, 2021



VC ACTIVITY

Figure 13.

Key agtech angel & seed deals

COMPANY	CLOSE DATE	CATEGORY	DEAL SIZE (\$M)*	DEAL TYPE	LEAD INVESTOR(S)
Red Sea Farms	August 15, 2021	Indoor farming systems	\$16.0	Seed round	AppHarvest, Bonaventure Capital, Future Investment Initiative, Global Ventures (Dubai), KAUST Innovation Fund, Wa'ed Ventures
NovoNutrients	July 14, 2021	Animal biotech	\$9.3	Series 1	N/A
Aqgromalin	September 23, 2021	Farm management software	\$5.2	Series 1	N/A
Dream Harvest Farming Company	August 15, 2021	Indoor growers	\$4.0	Angel (individual)	N/A
Agtonomy	September 23, 2021	Robotics & smart field equipment	\$4.0	Seed round	N/A
StockGuard	August 3, 2021	Livestock & land animal technology	\$3.8	Seed round	N/A
Vertical Oceans	September 20, 2021	Aquaculture	\$3.5	Seed round	Khosla Ventures
Hamama	September 15, 2021	Indoor farming systems	\$3.2	Seed round	N/A
Releaf	September 15, 2021	Robotics & smart field equipment	\$2.7	Seed round	Consonance Investment Managers, Future Africa, Samurai Incubate Africa
CattleEye	September 14, 2021	Livestock & land animal technology	\$2.5	Seed round	Techstart Ventures

Source: PitchBook | Geography: Global | *As of September 30, 2021



VC ACTIVITY

Figure 14.

Key agtech early-stage deals

COMPANY	CLOSE DATE	CATEGORY	DEAL SIZE (\$M)*	DEAL TYPE	LEAD INVESTOR(S)	VALUATION STEP-UP (POST TO PRE)
E-ctare	September 21, 2021	Finance & insurance	\$600.0	Early-stage VC	N/A	N/A
AmplifiedAg	August 9, 2021	Indoor farming systems	\$40.0	Early-stage VC	N/A	N/A
Monarch Tractor	August 30, 2021	Robotics & smart field equipment	\$30.7	Series B	N/A	2.86x
Carbon Robotics	August 27, 2021	Robotics & smart field equipment	\$27.0	Series B	Anthos Capital	1.72x
Smallhold	August 20, 2021	Indoor growers	\$25.0	Series A	N/A	3.89x
Advanced Farm Technologies	September 21, 2021	Robotics & smart field equipment	\$24.7	Series B	Catapult Ventures	2.00x
AcreTrader	July 26, 2021	Finance & insurance	\$22.3	Series A	Jump Capital	3.97x
Agricorp International	September 2, 2021	Agribusiness marketplaces	\$17.5	Series A	Vami Nigeria	N/A
Maui Greens	September 3, 2021	Indoor growers	\$16.7	Early-stage VC	N/A	N/A
Vytelle	August 18, 2021	Animal biotech	\$15.3	Series A	Ag-tech VC, Fulcrum Global Capital, Open Prairie Ventures	N/A

Source: PitchBook | Geography: Global | *As of September 30, 2021



VC ACTIVITY

Figure 15.

Key agtech late-stage deals

COMPANY	CLOSE DATE	CATEGORY	DEAL SIZE (\$M)*	DEAL TYPE	LEAD INVESTOR(S)	VALUATION STEP-UP (POST TO PRE)
Pivot Bio	July 19, 2021	Plant biotech	\$430.0	Series D	Temasek Holdings	3.10x
Bowery	August 13, 2021	Indoor growers	\$320.7	Series C	Fidelity Management & Research	4.00x
Agronutris	September 30, 2021	Insect farming	\$117.8	Late-stage VC	N/A	N/A
AgBiome	September 14, 2021	Plant biotech	\$116.0	Series D	Blue Horizon Corporation, Novalis LifeSciences	N/A
Semios	September 29, 2021	Field IoT	\$79.0	Late-stage VC	Morningside Group	N/A
Embark	July 26, 2021	Animal biotech	\$75.0	Series B	SoftBank Group	11.39x
Tridge	July 12, 2021	Agribusiness marketplaces	\$60.0	Series C	N/A	3.14x
Jupiter Intelligence	September 14, 2021	Finance & insurance	\$54.0	Series C	Clearvision Ventures, MPower Partners Fund	N/A
Iron Ox	September 22, 2021	Indoor growers	\$53.0	Series C	Breakthrough Energy Ventures	2.03x
Sunday	July 16, 2021	Plant biotech	\$52.0	Series C	Bond Capital	3.17x

Source: PitchBook | Geography: Global | *As of September 30, 2021



VC ACTIVITY

Figure 16.

Key agtech VC exits

COMPANY	CLOSE DATE	SEGMENT	EXIT SIZE (\$M)*	EXIT TYPE	ACQUIRER(S)/INDEX
Ginkgo Bioworks Holdings	September 17, 2021	Animal biotech	\$14,225.0	SPAC	Soaring Eagle Acquisition /NYSE: DNA
Benson Hill	September 30, 2021	Plant data & analysis	\$722.0	SPAC	Star Peak Corp II / NYSE: BHIL
Caribou Biosciences	July 23, 2021	Plant biotech	\$603.3	IPO	NASDAQ: CRBU
Bear Flag Robotics	August 5, 2021	Robotics & smart field equipment	\$250.0	M&A	Deere
Biotalys	July 2, 2021	Plant biotech	\$213.5	IPO	BNP Paribas Fortis Private Equity / BRU:BTLS
American Robotics	August 5, 2021	Drones & imagery analytics	\$70.6	M&A	Ondas Networks
Voyage81	August 12, 2021	Drones & imagery analytics	\$40.0	M&A	IL Makiage
AgriFORCE	July 8, 2021	Indoor farming components	\$0.0	IPO	NASDAQ: AGRI
TetraGenetics	September 13, 2021	Animal biotech	\$0.0	M&A	AbCellera
i2LResearch	July 2, 2021	Plant biotech	\$0.0	M&A	Cawood Scientific

Source: PitchBook | Geography: Global | *As of September 30, 2021



VC ACTIVITY

Figure 17.

Key agtech incumbents

COMPANY	SEGMENT	HOLDING STATUS	KEY PRODUCTS	EV/NTM REVENUE*	EV/NTM EBITDA*
Caterpillar	Robotics & smart field equipment	NYSE: CAT	Farm machinery	3.1x	16.4x
Deere	Robotics & smart field equipment	NYSE: DE	Farm machinery	3.9x	18.4x
Zoetis	Animal biotech	NYSE: ZTS	Medicine and vaccinations for livestock	1.1x	8.2x
Merck	Animal biotech	ETR: MRK	Medicine for livestock	2.0x	N/A
BASF	Plant biotech	ETR: BAS	Fungicides, insecticides, herbicides, seed treatments	57.3x	N/A
Bayer	Plant biotech	ETR: BAYN	Seeds and traits, digital farming tools, chemical crop protection	N/A	N/A
Dow	Plant biotech	NYSE: DOW	Agrichemical additives, pesticides, greenhouse films, animal feed additives	14.3x	N/A
Corteva Agriscience	Plant data & analysis	NYSE: CTVA	Seeds and traits, pasture and land management, pest management	6.2x	N/A
10x Genomics	Plant data & analysis	NASDAQ: TXG	Gene sequencing platform	40.4x	N/A
Hydrofarm	Indoor farming components	NAS: HYFM	Lighting, atmospheric control, hydroponics components	N/A	N/A

Source: PitchBook | Geography: Global | *As of September 30, 2021



VC ACTIVITY

Figure 18.
Key VC-backed agtech companies

COMPANY	SEGMENT	SUBSEGMENT	LATEST VC RAISED TO DATE (\$M)	POST VALUE (\$M)*
Indigo Agriculture	Ag biotech, agrifinance & e-commerce	Plant biotech, agribusiness marketplaces	\$1,151.6	\$2,755.0
Plant-Ag	Agrifinance & e-commerce	Agribusiness marketplaces	\$800.0	N/A
Farmer's Business Network	Agrifinance & e-commerce, precision ag	Agribusiness marketplaces, farm management software	\$619.3	\$1,800.0
Pivot Bio	Ag biotech	Plant biotech	\$616.7	\$1,700.0
E-ctare	Agrifinance & e-commerce	Finance & insurance	\$600.0	N/A
Botanical Solutions	Ag biotech	Plant biotech	\$555.3	N/A
Bowery	Indoor farming	Indoor growers	\$508.2	\$2,320.7
Inscripta	Ag biotech	Plant biotech	\$459.5	\$1,300.0
Infarm	Indoor farming	Indoor growers	\$429.4	\$577.6
Ynsect	Animal ag	Insect farming	\$408.4	N/A

Source: PitchBook | Geography: Global | *As of September 30, 2021



League tables

Figure 19.

Most active agtech VC investors in 2021*

INVESTOR NAME	DEAL COUNT	ANGEL & SEED	EARLY-STAGE VC	LATE-STAGE VC	INVESTOR TYPE
SOSV	15	9	4	2	VC
S2G Ventures	10	1	3	6	VC
Leaps by Bayer	9	2	5	2	Corporate VC
Omnivore.	9	3	3	3	VC
AgFunder	7	2	1	4	VC
Cavallo Ventures	7	1	3	3	Corporate VC
Gaingels	6	2	1	3	VC
Innova Memphis	5	0	2	3	VC
Novo Holdings	5	0	2	3	VC
CGC Ventures	5	1	1	3	VC

Source: PitchBook | Geography: Global | *As of September 30, 2021



LEAGUE TABLES

Figure 20.

Most active agtech PE investors 2019-2021*

INVESTOR NAME	DEAL COUNT	PRIMARY INVESTOR TYPE
Cibus Fund	2	Growth/expansion
APES Ventures	2	PE/buyout
Skyline Global Partners	2	PE/buyout
L Capital	2	PE/buyout
Farol Asset Management	2	PE/buyout
Virgo Investment Group	2	PE/buyout
Ally Bridge Group	2	PE/buyout
AEA Investors	2	PE/buyout
Aqua Capital	2	PE/buyout
Banneker Partners	2	PE/buyout

Source: PitchBook | Geography: Global | *As of September 30, 2021

Figure 21.

Most active agtech strategic acquirers since 2017*

INVESTOR NAME	DEAL COUNT	INVESTOR TYPE
Farmer's Business Network	9	VC-Backed Company
Nutrien	7	Corporation
Deere	6	Corporation
BASF	5	Corporation
Syngenta	5	Corporation
GrowGeneration	5	Corporation
Zoetis	5	Corporation
DTN	4	PE-Backed Company
Telus	4	Corporation
Danish Agro	4	Corporation

Source: PitchBook | Geography: Global | *As of September 30, 2021

Emerging opportunities

Biochemicals

New biochemicals aim to reduce reliance on synthetic chemicals.

Soil measurement and carbon farming

Soil measurement tools play a critical role in restoring soil health.



Biochemicals

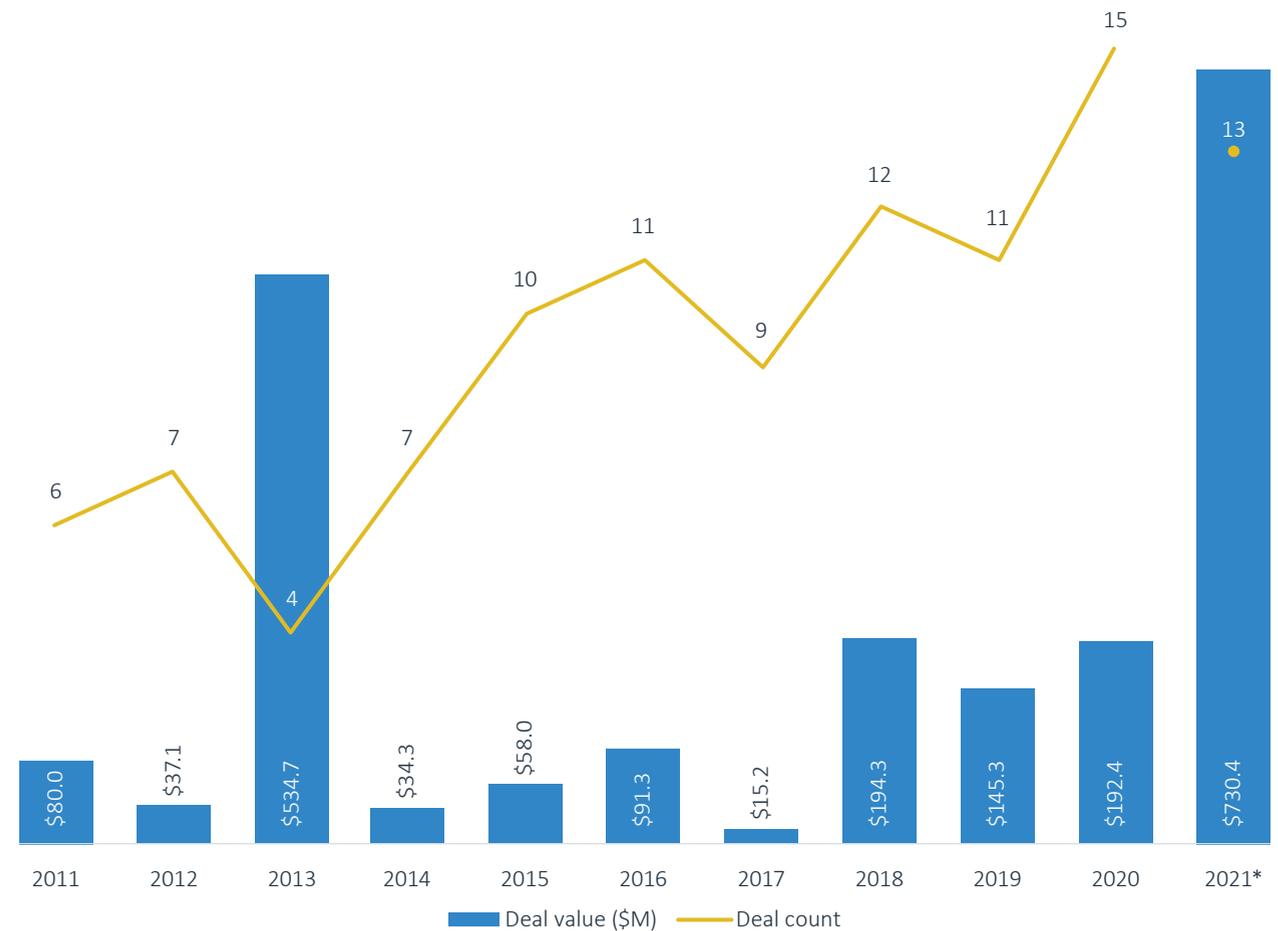
Biochemicals are the new crop protection

Synthetic nitrogen fertilizer is one of the most significant inventions of the 20th century. It has significantly improved crop productivity and has been credited for the rapid rise in the global population. However, synthetic chemicals have also been known to damage soil health and cause soil acidification. This harms the soil microbiome, decreasing fertility and productivity in a way that requires increasing amounts nitrogen. Poor soil health also reduces its ability to act as a carbon sink by absorbing atmospheric carbon. Other synthetic ag chemicals, such as pesticides, can threaten the health of humans and other species, such as pollinators. They can also cause pest and disease resistance. Overapplication of chemicals can lead to runoff into waterways and aquifers, causing eutrophication and poisoning of human and aquatic life.

Sensors and ag data have the potential to inform more precise applications of chemicals, thereby reducing the negative outcomes of overuse. In addition to these positive environmental impacts, precision ag tools can also reduce chemical expenses for farmers.

Ag biologicals are crop productivity and protection products developed from living organisms or natural materials and have the potential to replace synthetic chemicals entirely. While biologicals are thought to be safer, healthier, and more environmentally friendly than synthetic chemicals, they are often considered less effective and provide a lower spectrum of control than synthetic chemicals. For this reason, they are often used in conjunction with synthetic chemicals and not as a full replacement.

Figure 22. BIOLOGICALS VC DEAL ACTIVITY



Source: PitchBook | Geography: Global | *As of September 30, 2021



BIOCHEMICALS

Ag biologicals are produced by incumbent ag chemical companies, such as **Bayer**, and an increasing number of startups. VC-backed ag biological startups have raised \$730.4 million across 13 deals in 2021 through Q3. The quarter's largest deal was a \$430.0 million Series D for **Pivot Bio** led by Temasek Holdings. The deal valued the company at \$1.3 billion pre-money. **Pivot Bio** produces a biochemical nitrogen fertilizer using a microbial technology.

Several startups are developing new ways to pursue the growing opportunity for ag biologics. In February 2021, the Bill & Melinda Gates Foundation invested \$10.0 million in startup **Provivi**, which is developing biological insecticides based on pheromones. **Provivi** agreed to develop products for smallholder farmers in countries such as Kenya, Bangladesh, and India as part of the investment.

AgBiome has developed a microbial screening platform that can search for microbes that provide pest control and crop protection. It has commercialized one fungicide and has a product pipeline of 11 fungicides, insecticides, and herbicides that are targeted to hit the market by 2025. **AgBiome** claims its products have the same efficacy as synthetic chemicals.

Ag biochemicals are produced from pathogens as well. **AgBiTech** has developed bio-insecticides that use a technique called nuclear polyhedrosis virus (NPV) to target pests such as cotton bollworms. The treatment suppresses pests without affecting other insect populations. Unlike some providers, **AgBiTech** recommends that its bio-insecticides be used as part of a broader pest-control regime, including synthetic insecticides.



BIOCHEMICALS

Figure 23.

Top biologicals VC-backed companies by total VC raised to date (\$M)

COMPANY	VC RAISED TO DATE (\$M)**	MOST RECENT POST VALUE (\$M)*	MOST RECENT DEAL TYPE	HQ LOCATION
Pivot Bio	\$616.7	\$1,700.0	Series D	Berkeley, US
Botanical Solutions	\$555.3	N/A	Late-stage VC	Vitacura, Chile
AgBiome	\$235.0	N/A	Series D	Durham, US
Provivi	\$192.2	\$256.5	Series C	Santa Monica, US
Vestaron	\$107.3	\$111.0	Series B1	Durham, US
Terramera	\$72.3	N/A	Late-stage VC	Vancouver, Canada
Enko	\$65.7	\$99.1	Late-stage VC	Woburn, US
Grower's Secret	\$30.1	\$104.6	Series B	Antioch, US
N2 Applied	\$20.2	N/A	Late-stage VC	Asker, Norway
Gaiago	\$16.1	\$2.8	Series A	Saint-Malo, France

Source: PitchBook | Geography: Global | *As of September 30, 2021

**Note: "VC raised to date" is from known values and includes accelerator/incubator deal types



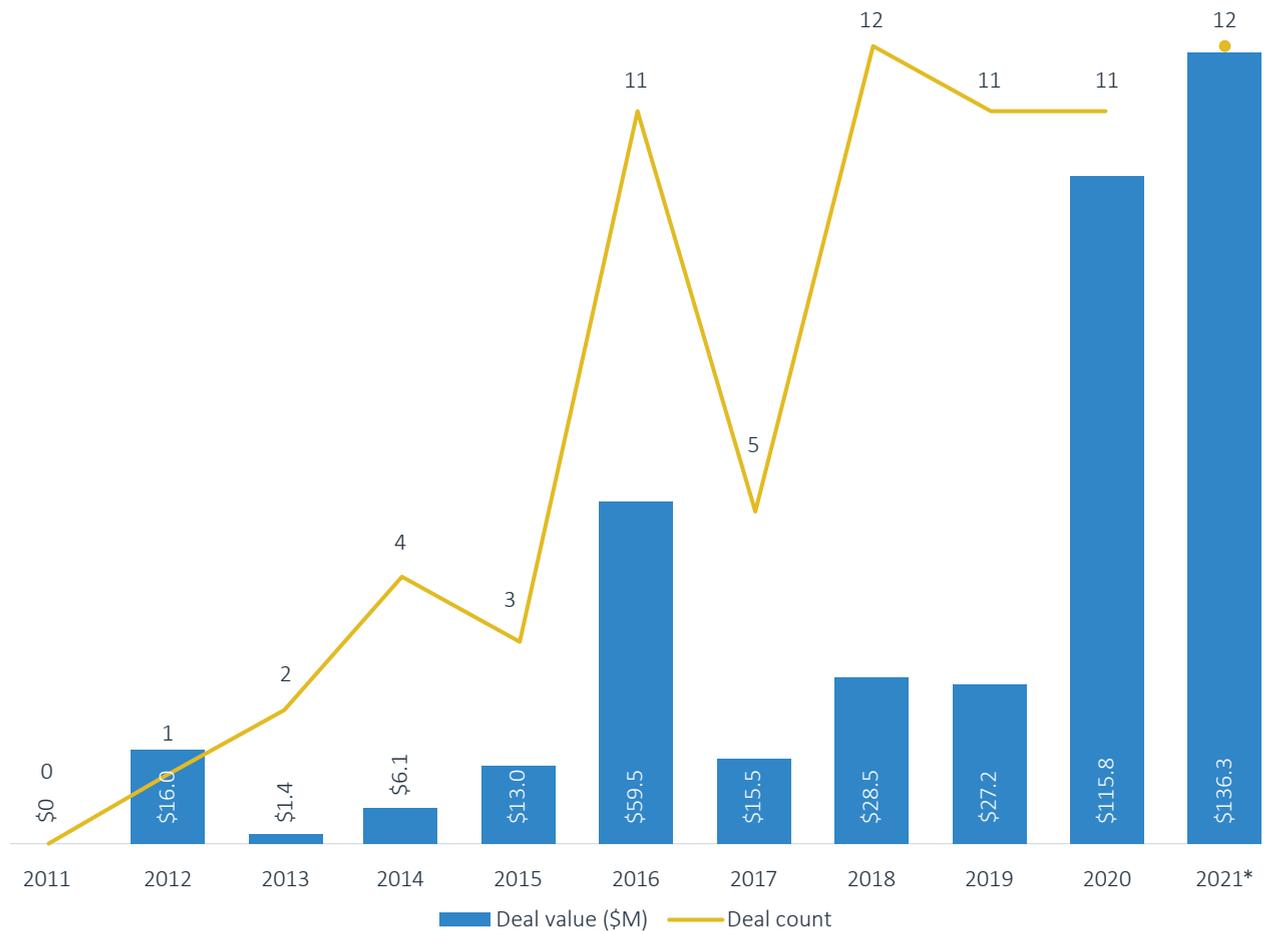
Soil measurement and carbon farming

Overview

Traditional soil measurement has focused primarily on improving crop productivity and yield. Tracking data points, such as soil moisture and nutrient profile, helps farmers improve resource efficiency related to water use and chemical application activities. However, emerging soil health measurement trends are providing much deeper levels of soil analysis and helping usher in the era of “carbon farming” or the practice of harnessing atmospheric carbon in soil and crop roots. Carbon farming can help mitigate climate change while providing monetization opportunities via carbon credit markets, and the technology represents a new way to incentivize farmers to adopt sustainable farming practices such as regenerative farming.

There are many ways to obtain soil samples, including physical samples, in-ground sensors, or remote imagery sensing, which entails hyperspectral sensors attached to aerial platforms such as drones, planes, and satellites. Precision ag companies that offer soil analysis tend to have limited functionality and may only focus on one aspect of soil health, such as moisture. Pure-play soil health providers offer a much broader set of analysis tools and give more detailed information on factors such as microbial diversity, nitrogen fixation, and soil nutrient profiles.

Figure 24. SOIL VC DEAL ACTIVITY



Source: PitchBook | Geography: Global | *As of September 30, 2021



SOIL MEASUREMENT AND CARBON FARMING

Pure-play soil analysis company **Pattern Ag**, which has raised \$27.5 million in VC funding, performs soil testing that includes microbial and DNA analysis to help screen for diseases and pests. In addition to genome analysis, Pattern Ag's soil nutrient profiles include phosphorus solubilization, nitrogen fixation, and denitrification, among others. The analysis helps farmers make decisions regarding crop traits and input recipes to maximize yield and minimize loss.

Startup **Biome Makers** exclusively focuses on measuring and improving the soil microbiome and applying artificial intelligence and data science tools to analyze soil samples. **Biome Makers'** BeCrop platform helps farmers improve yields, improve crop quality, and assess disease risks. The company also provides a suite of tools for specific growers—for example, winemakers interested in analyzing terroir. The company has raised \$23.3 million in funding to date.



SOIL MEASUREMENT AND CARBON FARMING

Figure 25.

Top soil analysis VC-backed companies by total VC raised to date (\$M)

COMPANY	VC RAISED TO DATE (\$M)**	MOST RECENT POST VALUE (\$M)*	MOST RECENT VC DEAL TYPE	HQ LOCATION
Semios	\$180.5	N/A	Late-stage VC	Vancouver, Canada
Pattern Ag	\$27.5	\$65.8	Late-stage VC	Emeryville, US
Farm(x)	\$25.5	\$42.8	Series A	Mountain View, US
Biome Makers	\$21.2	\$55.0	Series B	West Sacramento, US
SupPlant	\$21.0	N/A	Late-stage VC	Afula, Israel
EarthOptics	\$11.8	\$30.3	Series A	Raleigh, US
AquaSpy	\$10.8	N/A	Late-stage VC	San Diego, US
Teralytic	\$9.0	\$8.7	Series A	New York, US
GroGuru	\$7.8	\$15.7	Late-stage VC	Las Vegas, US
Agrosmart	\$7.7	N/A	Series A	Sao Paulo, Brazil

Source: PitchBook | Geography: Global | *As of September 30, 2021

**Note: "VC raised to date" is from known values and includes accelerator/incubator deal types

Select company highlights



SELECT COMPANY HIGHLIGHT | DEHAAT



Founded
2012

850+ employees

Total VC raised:
\$165.0M over 4 deals

Based in Patna, India

Last completed financing:
\$115.0M of Series D venture funding in a deal led by GV and Wearsheaf Group

Last financing valuation:
Undisclosed

First institutional round:
\$4.3M (March 2019)

Overview

DeHaat is a comprehensive agriculture platform that includes a suite of digital tools for farmers, a marketplace that connects farmers with stakeholders including input vendors, distributors, agronomists, and financing providers. Additionally, the marketplace assists farms with first- and last-mile delivery by hosting delivery agents, which it calls “micro-entrepreneurs.” Delivery agents can be hired to deliver inputs to farmers and transport produce from farmers to customers.

The company’s digital platform includes a growing suite of farm management tools such as yield forecasting, education and advisory services, weather-based decision analytics, and soil testing services. It has bolstered its product offering through M&A. In February 2021, the company acquired imagery analytics provider **FarmGuide**, and it acquired ag marketplace VezaMart in 2019.

Leadership

Co-founder & CEO: Shashank Kumar

Co-founder & Executive Director: Shyam Singh

Co-founder & Director: Amrendra Singh

Competitors

DeHaat focuses its services on northeastern India. There are no competitors that offer the same suite of tools and services, but the company faces competition from providers with more targeted solutions, such as Rival **Jai Kisan**, which provides financial services to smallholder farmers in India. **Jai Kisan** works with input and equipment suppliers to offer financing options when making purchases. DeHaat also competes against ag marketplaces, such as **Ninjacart**, that connect farmers with produce buyers. Rival Agstack Technologies (DBA **Gramophone**) is the most comparable competitor, offering farm advisory services, marketing support, and a retail offering where farmers can buy inputs, seeds, and ag hardware.



SELECT COMPANY HIGHLIGHT | DEHAAT

Figure 26.

Financing history

ANGEL	ANGEL	SEED	SERIES A	SERIES C	SERIES D
January 7, 2014	January 1, 2015	March 17, 2019	April 7, 2020	January 19, 2021	October 26, 2021
Total raised (\$M): \$0.4	Total raised (\$M): \$0.3	Total raised (\$M): \$4.3	Total raised (\$M): \$12.0	Total raised (\$M): \$30.0	Total raised (\$M): \$115.0
Lead investor: Javed Farooqui	Lead investor: Undisclosed	Lead investor: Omnivore (Jinesh Shah)	Lead investor: Sequoia Capital India (Abhishek Mohan)	Lead investor: Prosus Ventures (Ashutosh Sharma)	Lead investors: Lightrock (Bangalore) (Vaidhehi Ravindran), Sofina (BRU: SOF) (Yana Kachurina)



SELECT COMPANY HIGHLIGHT | IRON OX



Founded
2015

81+ employees

Total VC raised:
\$99.3 M over 6 deals

Based in San Carlos, CA

Last completed financing:
\$53.0M of series C venture funding in a deal led by Breakthrough Energy Ventures

First institutional round:
\$6.0M (December 2017)
\$296.0M post-money valuation

Overview

Iron Ox is a controlled environment agriculture (CEA) grower with two farming facilities located in San Carlos and Gilroy, California, and a third under construction in Lockhart, Texas. The company uses robots to automate labor-intensive tasks such as planting, transporting, and harvesting produce. Machine learning, artificial intelligence, and computer vision are used to collect plant growth and health data which can be used to improve crop quality and yield.

Iron Ox uses hydroponic growing methods to produce leafy greens, herbs, and berries which are available for purchase at select grocery stores in northern California. The hydroponic grow method is highly resource efficient. **Iron Ox** claims its methods consume 90% less water, 75% less energy, and 15x less land than outdoor growing.

Leadership

Co-founder & CEO: Brandon Alexander

CFO: Tom Constantino

VP of Operations: Greg Zanghi

Head of product: Jamie Young

Competitors

CEA funding has been concentrated on a subset of companies including **Bowery**, **Plenty**, and **Infarm**. These companies have amassed sizable war chests to develop sprawling tech-enabled grow facilities. Providers have limited geographic reach surrounding facilities. **Iron Ox** serves markets in northern California and will begin to serve Texas markets after the construction of its newest facility. Rival **Plenty** has facilities in Los Angeles and San Francisco Bay areas and serves markets in those regions. Other leading providers such as **AppHarvest**, **Bowery**, and **AeroFarms** are located on the east coast of the US and are initially focused on serving markets in that region.

In the long term, we will likely see saturation in the space as competitors expand into new markets. One of the key considerations of the CEA model is the limited number of crop varieties that grow well and generate enough revenue to compensate for high startup and operation costs of tech-heavy and power-hungry grow facilities. The lack of crop variety between providers will likely limit competition in each market and lead to aggressive competitive tactics.



SELECT COMPANY HIGHLIGHT | IRON OX

Figure 27.

Financing history

SEED	SERIES A	SERIES A1	SERIES B	SERIES C
December 17, 2017	June 20, 2019	December 30, 2019	August 17, 2020	September 22, 2021
Total raised (\$M): \$6.0	Total raised (\$M): \$13.2	Total raised (\$M): \$7	Total raised (\$M): \$20.0	Total raised (\$M): \$53.0
Post Valuation (\$M): \$11.2	Post Valuation (\$M): \$32.4	Post Valuation (\$M): \$62.0	Post Valuation (\$M): \$120.0	Post Valuation (\$M): \$296.0
Lead investor: Eniac Ventures	Lead investor: Undisclosed	Lead investor: Undisclosed	Lead investor: Pathbreaker Ventures (Ryan Gembala)	Lead investor: Breakthrough Energy Ventures (Carmichael Roberts)



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As the private markets continue to grow in complexity and competition, it's essential for investors to understand the industries, sectors and companies driving the asset class.

Our Emerging Tech Research provides detailed analysis of nascent tech sectors so you can better navigate the changing markets you operate in—and pursue new opportunities with confidence.

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