



EMERGING TECH RESEARCH

# Foodtech

Q3 2021 VC update





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This report serves as a quarterly snapshot of the foodtech vertical in Q3 2021. For a comprehensive, detailed analysis of the foodtech industry by segment, please see our [latest annual edition](#).



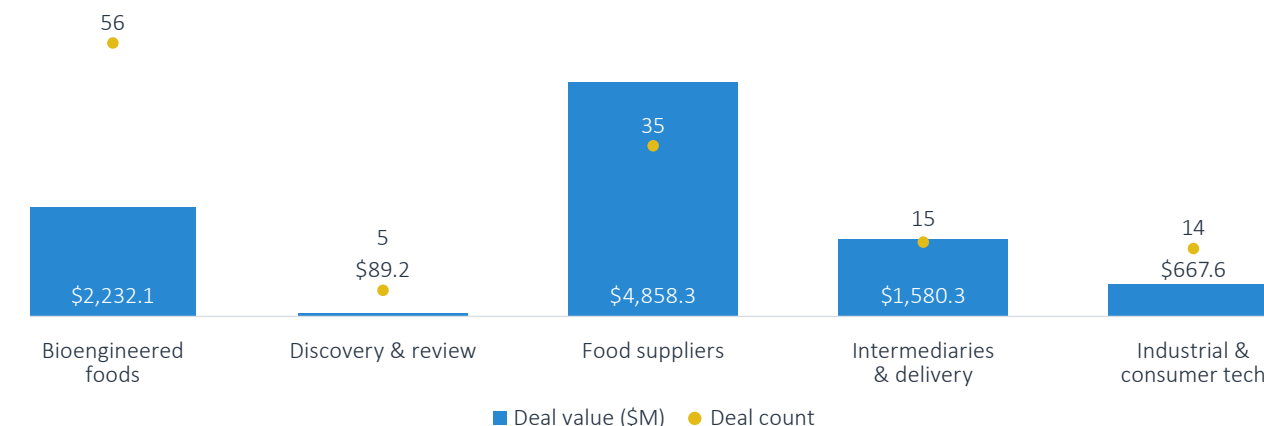
# Vertical overview

The foodtech sector includes technology-driven startups developing products and services that are changing the ways food has traditionally been discovered, purchased, delivered, prepared, and consumed. PitchBook's broad food technology ecosystem encompasses bioengineered foods such as **Eat Just**'s cultivated chicken, as well as emerging e-commerce solutions such as **Gorillas**' ultrafast grocery services. The foodtech industry continues to grow with remarkable speed fueled by record funding, which we attribute to two key macro trends:

**Digitization of shopping activities and a continued push for on-demand everything.** This trend is visible in the rise of online grocery, which has become table stakes for most grocers that have developed proprietary e-commerce offerings or turned to third-party providers such as **Instacart** and **Farmstead**. We logged \$14.0 billion in venture capital (VC) funding YTD for online grocers—an increase of 2.7x over 2020 totals.

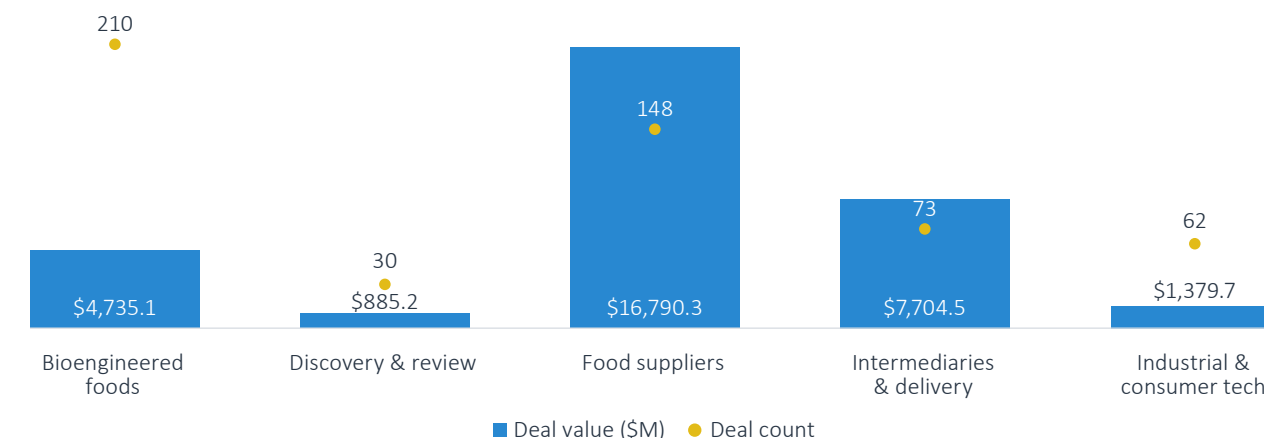
**Increasing sustainability, reducing waste, and addressing climate change.** The food system is a leading source of food and packaging waste. As a result, investors are backing innovative solutions that promise achievable reduction in waste, substitution with sustainable alternatives, or a means to upcycle waste into new products. The food waste category has captured \$1.1 billion in VC funding YTD, up 86.4% from 2020. Alt-proteins, such as plant-based or cultivated meat, are also attracting significant investment as disruptors of the traditional meat and animal proteins industry, which is increasingly tied to unsustainable agricultural practices and methane emissions. The cultivated protein category alone logged \$1.2 billion in venture funding YTD, up 171.2% from 2020. Over the past several years, alt-protein providers have been incubating new technologies and products, and many are nearing or have already achieved commercialization. We expect that funding of these categories will continue to grow as companies shift from product development to market launch and expansion.

Figure 1. Q3 2021 FOODTECH VC DEAL ACTIVITY BY SEGMENT\*



Source: PitchBook | Geography: Global | \*As of September 30, 2021  
Note: We have excluded multi-vertical super apps from our analysis and charts. These companies include Gojek, Rappi, Uber, Amazon, and Grab.

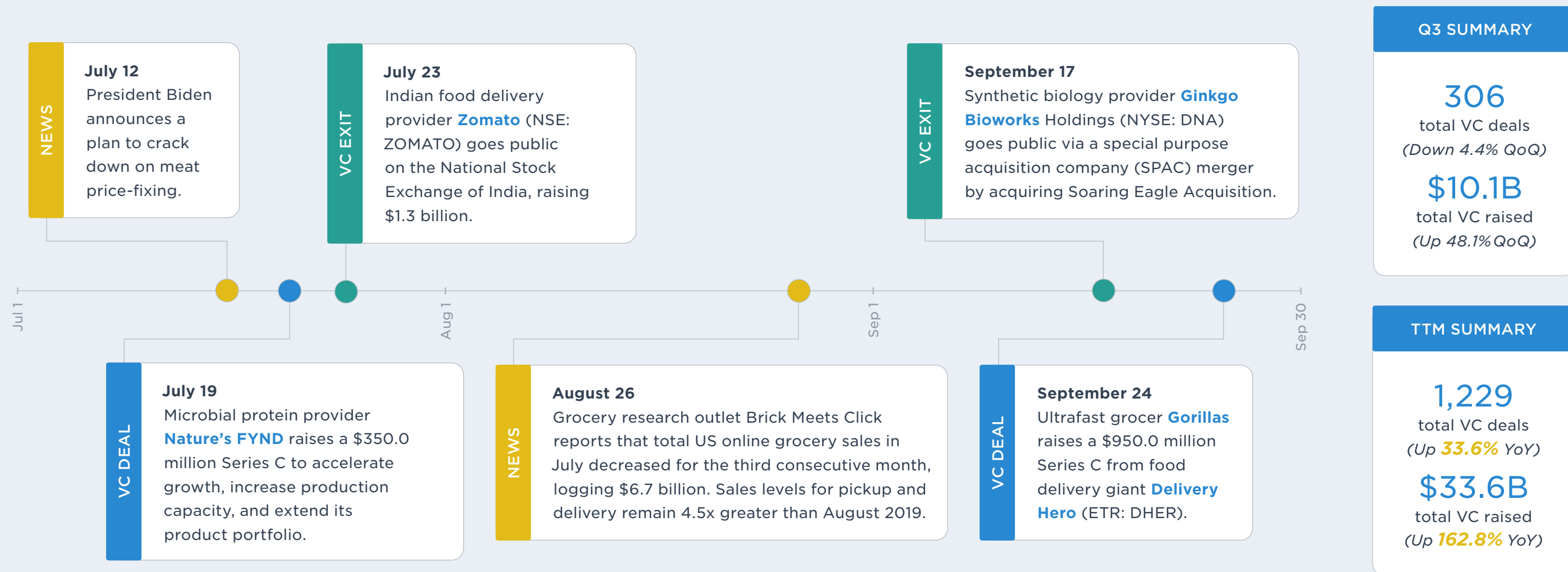
Figure 2. FOODTECH TRAILING 12-MONTH (TTM) VC DEAL ACTIVITY BY SEGMENT\*



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



# Q3 2021 timeline





# Foodtech 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.

## Bioengineered foods

### Meal replacements

kate farms<sup>®</sup> soylent

### Novel ingredients

GELTOR MILE HIGH LABS MANUS BIO INTEGRATED CBD DEMETRIX

TEBRIQ

### Plant-based protein

IMPOSSIBLE<sup>™</sup> NotCo ripple BOLT THREADS v2 food<sup>™</sup>  
nobell MEATLESS FARM<sup>™</sup> daring<sup>™</sup> HARMLESS HARVEST<sup>™</sup> Terviva  
green monday kitehill Gathered Foods MIYOKO<sup>™</sup> URBAN REMEDY  
SIMULATE<sup>®</sup> planted.

### Fermented protein

Perfect Day. Fynd NOBLEGEN motif MYCO TECHNOLOGY  
CALYSTA<sup>™</sup> culture MEATI<sup>™</sup> ECOVATIVE DESIGN Clara Foods  
ENOUGH Formo BIOTORK Arzeda. Atlast<sup>™</sup>

### Cultivated protein

BlueNalu MEATABLE UPSIDE<sup>™</sup> ALEPH FARMS MOSA MEAT TurtleTree  
FUTURE MEAT GOURMEY

## Food suppliers

### Meal kits

gousto sunbasket D H HUNGRYROOT liv UP  
allplants cook unity simple feast

### Online grocers

兴盛优选 goPuff GORILLAS 十荟团 Zapp  
PIC NIC getir Flink<sup>™</sup> grofers oda  
Kierly Weee! 本来生活 benlai.com BOXED good eggs  
THRIVE - MARKET - goldbelly 每日一淘 provi frubana  
Josto 呆萝卜 MATSMART MERQUEO

### Catering

revolution foods Thriver

### Business products & services suppliers

GrubMarket ninjacart CHOCO Getatah REKKI  
مكسب maxob

### Ghost kitchens

CLOUD KITCHENS ITOPI REBEL FOODS all day 鹿角菜園



# Foodtech 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.

## Intermediaries & delivery

### Delivery robots

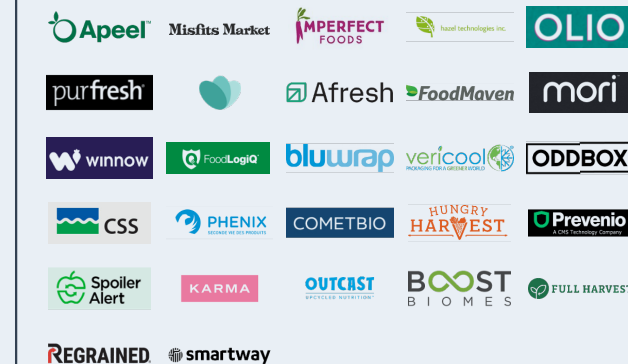


### Apps & marketplaces



## Industrial & consumer tech

### Food waste & traceability



### Kitchentech & robotics

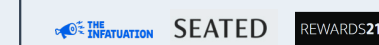


### Advanced vending



## Discovery & review

### Restaurant recommendation & review



### Food & beverage discovery



### Personalized nutrition



### Kitchen enablement & software





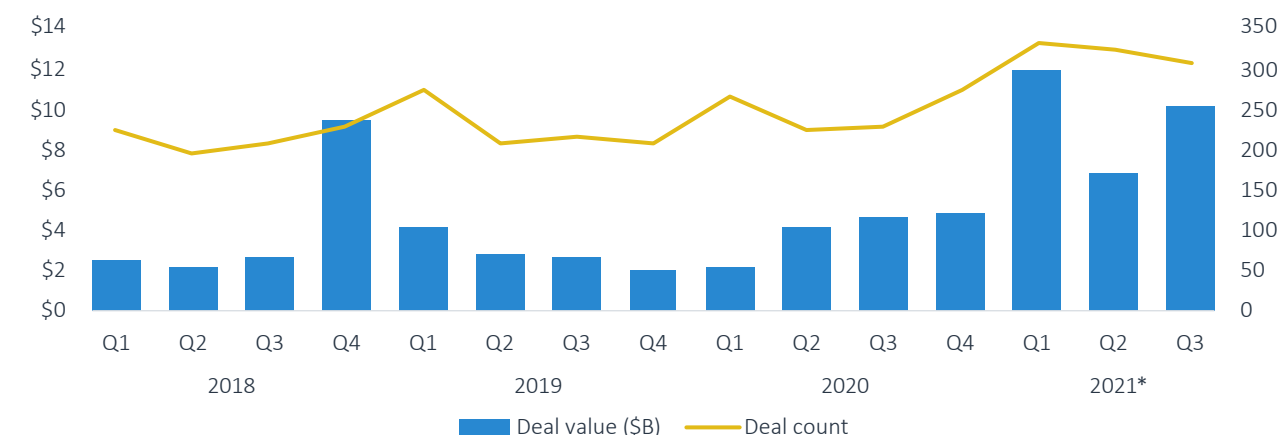
# VC activity

Unremitting VC investment activity into foodtech companies continued in Q3 2021, with \$10.1 billion invested across 306 deals. Deal values were up 48.1% QoQ, and this was the second strongest quarter on record in terms of deal values and counts. Total VC deal activity for 2021 now stands at \$28.8 billion YTD, up 85.0% from 2020 totals. Deal count sits at 956 deals YTD, just 3.1% shy of 2020 totals and likely to be exceeded by year's end. We expect that investor exuberance for food technologies will continue well into 2022.

One of the segments attracting an influx in capital, bioengineered foods drew \$2.2 billion in venture funding in Q3 alone, which is 3x Q2 deal values of \$752.6 million. Alt-proteins, and particularly fermented proteins, were the primary draw within this segment. Fermented protein provider **Nature's FYND** closed a \$350.0 Series C in July in a deal led by SoftBank Investment Advisers. The company plans to use the funding to fuel global expansion and grow its product offerings. Additionally, **Perfect Day**, a fermented protein provider focused on transforming microbes into animal-free dairy proteins, closed a \$350.0 million Series D1 in September in a deal co-led by Temasek and Canada Pension Plan Investment Board, with plans to expand service offerings in biological engineering, ingredient innovation, and consumer goods.

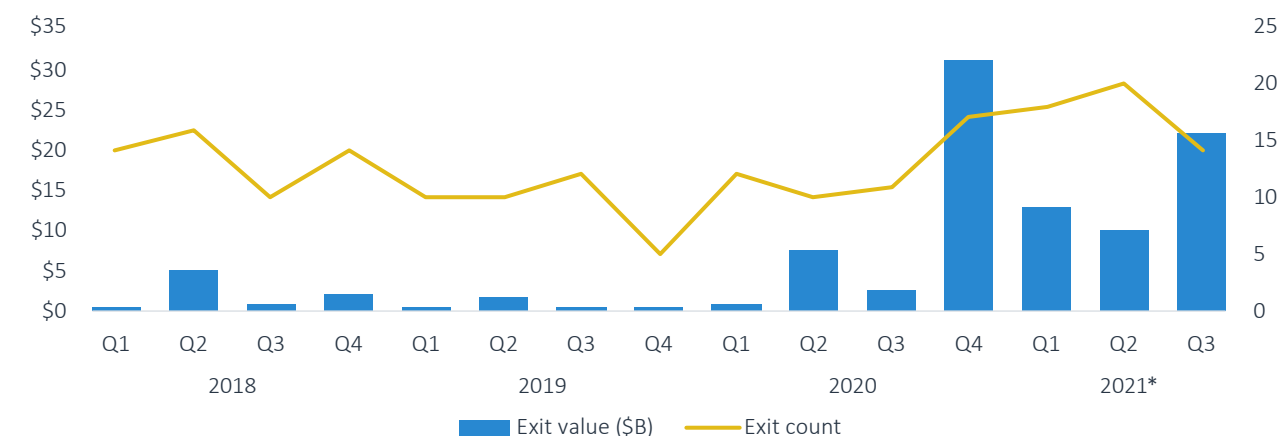
The continued flood of capital into foodtech has placed upward pressure on the size and cost of deals. Median early- and late-stage VC deal sizes rose to record highs YTD. The median late-stage deal size rose to \$17.0 million YTD, up 86.9% from 2020's median. The median early-stage deal size climbed 53.3% over the same timeframe, while the median angel & seed stage VC deal size has remained flat.

Figure 3. FOODTECH VC DEAL ACTIVITY BY QUARTER



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

Figure 4. FOODTECH VC EXIT ACTIVITY BY QUARTER



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



## VC ACTIVITY

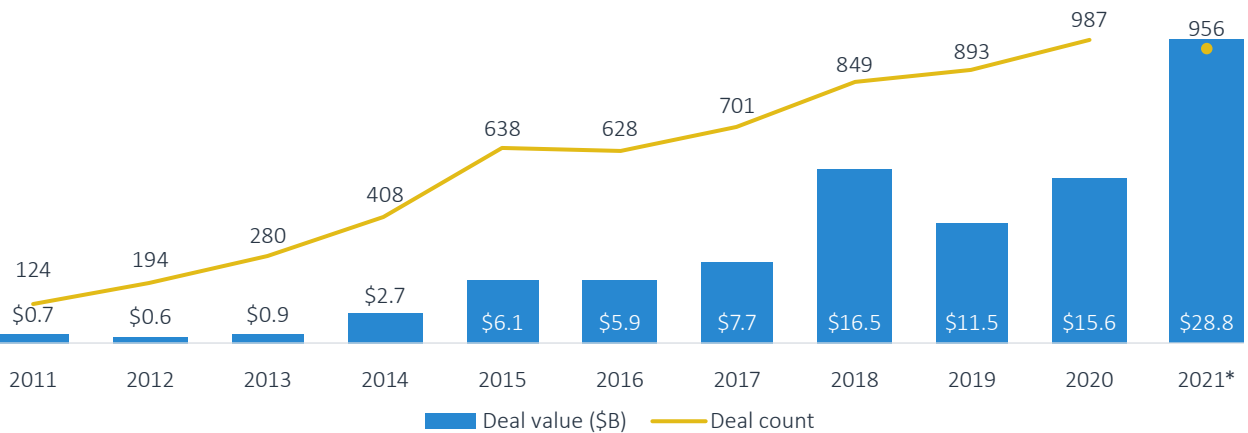
Valuations also have experienced upward pressure, reaching record highs across all VC stages. The greatest growth in valuations came at the early stage, which rose 133.3% over 2020 to reach \$35.0 million. The median valuation at the late stage reached \$140.0 million, up 65.9% YoY. The growth in deal sizes and valuations can be attributed to drivers that extend across the entire VC asset class: Record levels of dry powder and an influx of nontraditional investors have continued to build pressure to deploy capital. And the accelerated investment pace made prominent by Tiger Global Management has heightened competition among VCs, thus fueling a trend of rapid, generous dealmaking.





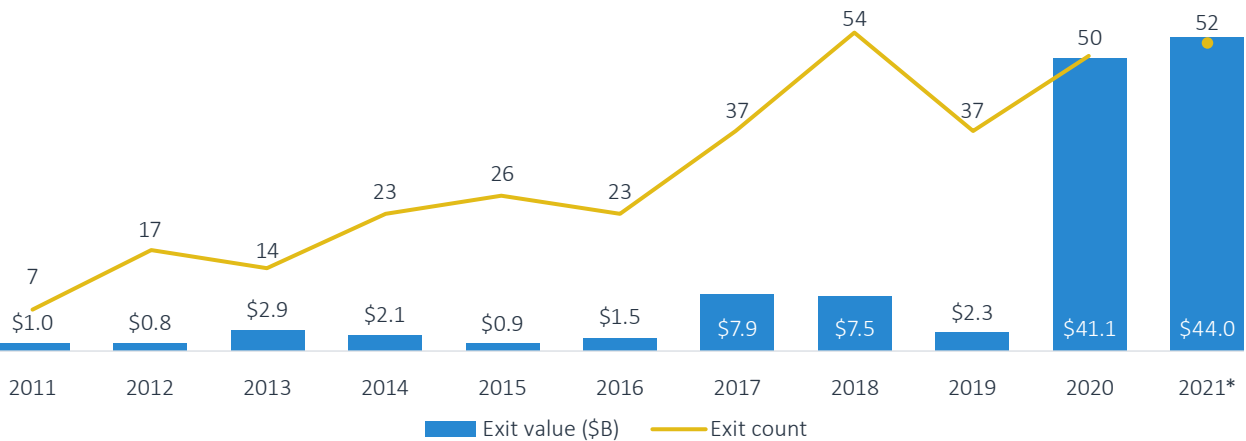
# VC ACTIVITY

Figure 5. FOODTECH VC DEAL ACTIVITY



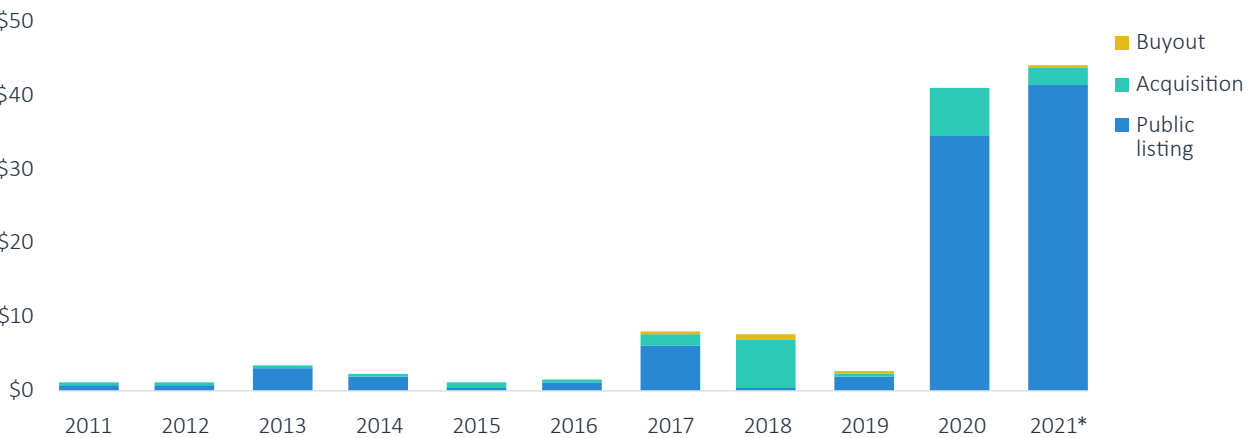
Source: PitchBook | Geography: Global | \*As of September 30, 2021

Figure 6. FOODTECH VC EXIT ACTIVITY



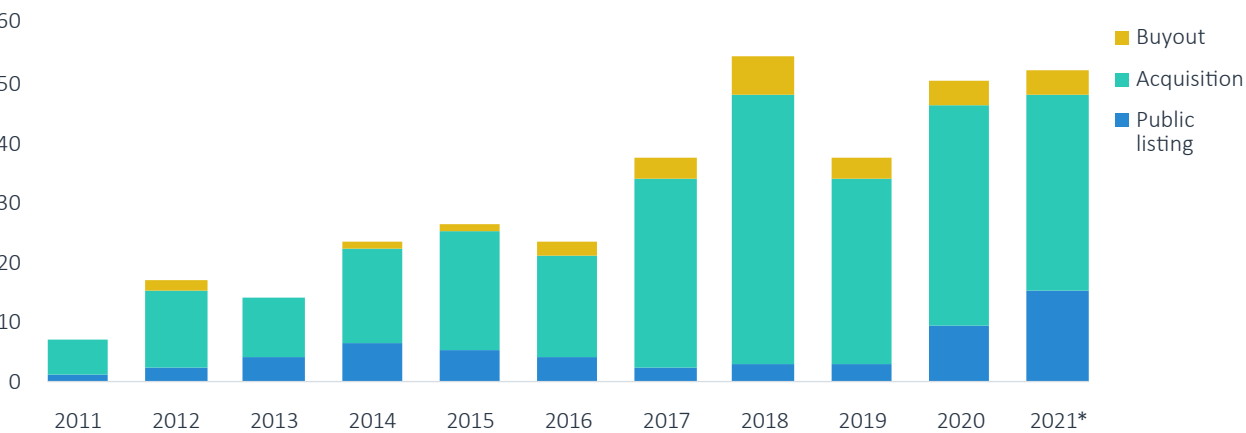
Source: PitchBook | Geography: Global | \*As of September 30, 2021

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



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

Figure 8. FOODTECH VC EXIT COUNT BY TYPE

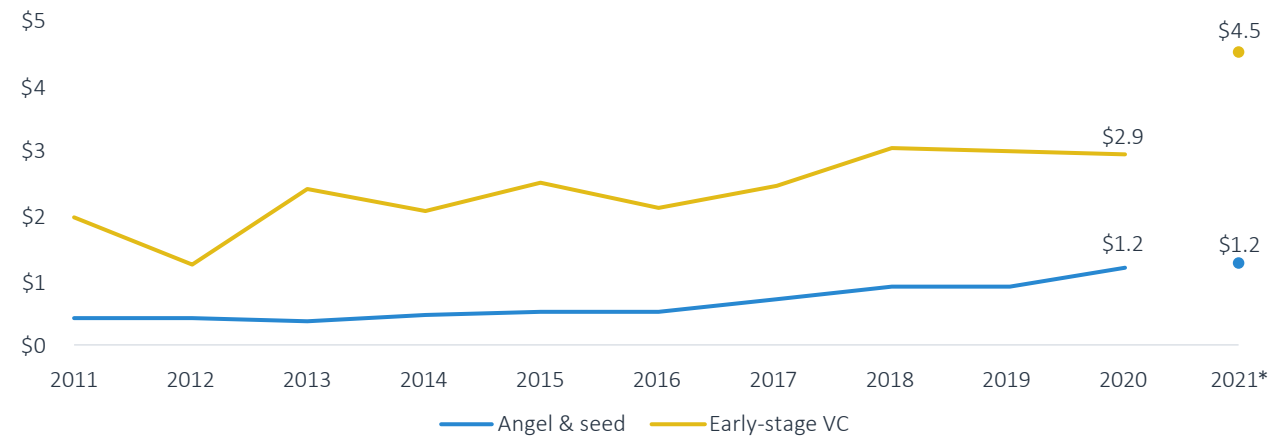


Source: PitchBook | Geography: Global | \*As of September 30, 2021



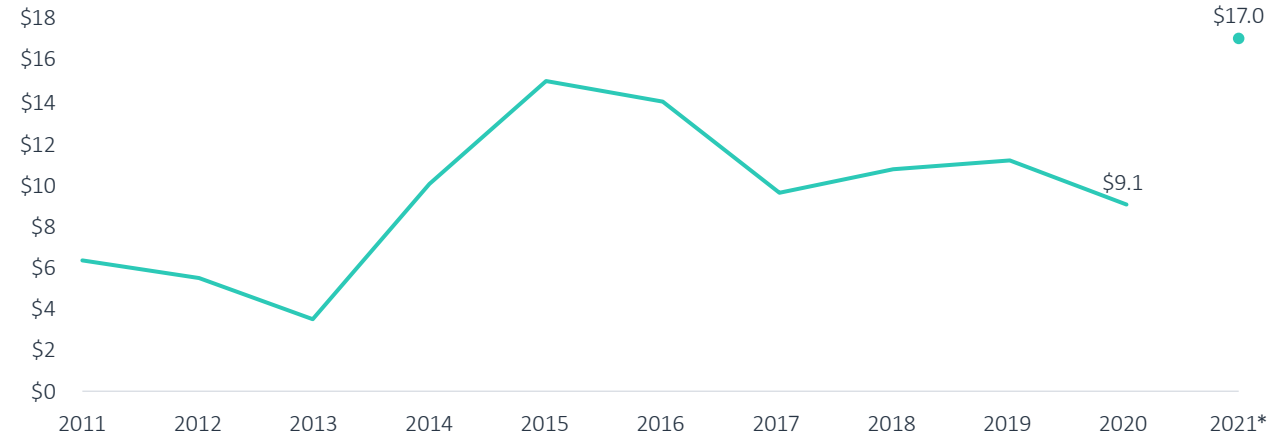
# VC ACTIVITY

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



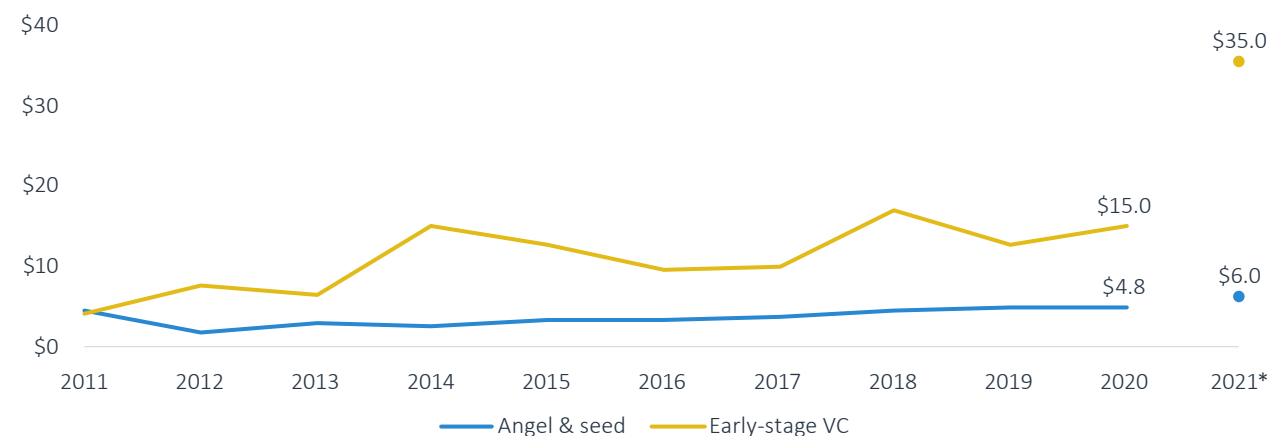
Source: PitchBook | Geography: Global | \*As of September 30, 2021

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



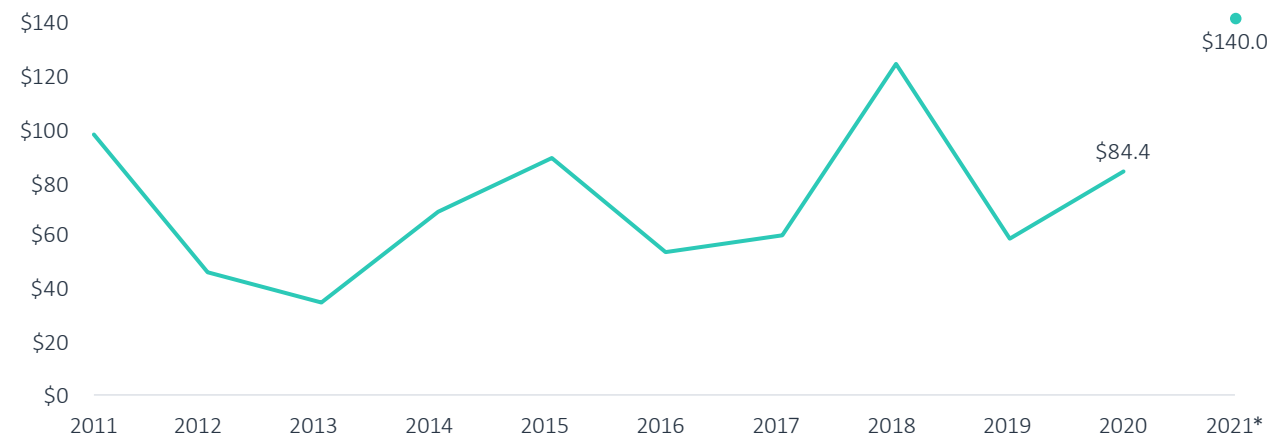
Source: PitchBook | Geography: Global | \*As of September 30, 2021

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



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

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



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



## VC ACTIVITY

Figure 13.

### Key foodtech angel & seed VC deals

COMPANY	CLOSE DATE	SUBSEGMENT	STAGE	DEAL SIZE (\$M)*	LEAD INVESTOR(S)
<b>Next Gen Foods</b>	July 14, 2021	Plant-based protein	Seed	\$30.0	Temasek Holdings
<b>Wild Earth</b>	September 10, 2021	Cultivated protein, fermented protein	Angel	\$23.0	N/A
<b>All G Foods</b>	September 6, 2021	Plant-based protein	Seed	\$16.0	Clean Energy Finance
<b>Gourmey</b>	July 14, 2021	Cultivated protein	Seed	\$10.0	Air Street Capital, Point Nine Capital
<b>NovoNutrients</b>	July 14, 2021	Cultivated protein	Seed	\$9.3	N/A
<b>Kavall</b>	August 9, 2021	Online grocers	Seed	\$5.8	VNV Global
<b>Fable Food</b>	August 12, 2021	Plant-based protein	Seed	\$4.8	Blackbird Ventures
<b>Better Nature</b>	July 15, 2021	Fermented protein, plant-based protein	Angel	\$2.2	N/A
<b>Multus Media</b>	July 19, 2021	Cultivated protein	Seed	\$2.2	N/A
<b>Goodmylk</b>	September 6, 2021	Plant-based protein	Seed	\$1.0	N/A

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



# VC ACTIVITY

Figure 14.  
Key foodtech early-stage VC deals

COMPANY	CLOSE DATE	SUBSEGMENT	STAGE	DEAL SIZE (\$M)*	LEAD INVESTOR(S)	VALUATION STEP-UP
JOKR	July 20, 2021	Online grocers	Series A	\$170.0	Balderton Capital, Tiger Global Management, GGV Capital	N/A
v2food	August 5, 2021	Plant-based protein	Series B	\$110.2	Astanor Ventures	N/A
Aleph Farms	July 7, 2021	Cultivated protein	Series B	\$105.0	DisruptAD, L Catterton	N/A
Choco	July 20, 2021	Business products & services suppliers	Series B	\$100.0	Left Lane Capital	2.4x
Creating Culinary Communities	July 6, 2021	Ghost kitchens	Series B	\$80.0	N/A	N/A
TurtleTree	July 6, 2021	Cultivated protein	Series A	\$80.0	VERSO Capital	N/A
MaxAB	August 25, 2021	Business products & services suppliers	Series A	\$55.0	Riyada Managers	N/A
Formo	September 13, 2021	Fermented protein	Series A	\$50.0	EQT Ventures, Lowercarbon Capital, Elevat3 Capital	N/A
Cajoo	September 2, 2021	Online grocers	Series A	\$40.0	Carrefour	N/A
Coco	August 25, 2021	Delivery robots	Series A	\$36.0	Sam Altman, Silicon Valley Bank, Founders Fund	4.9x

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



# VC ACTIVITY

Figure 15.  
Key foodtech late-stage VC deals

COMPANY	CLOSE DATE	SUBSEGMENT	STAGE	DEAL SIZE (\$M)*	LEAD INVESTOR(S)	VALUATION STEP-UP
goPuff	July 30, 2021	Online grocers	Series H	\$1,000.0	Hedosophia	1.6x
Gorillas	September 24, 2021	Online grocers	Series C	\$950.0	Delivery Hero	1.3x
Bolt	August 2, 2021	Apps & marketplaces	Late-stage VC	\$709.6	Sequoia Capital	N/A
Picnic	September 16, 2021	Online grocers	Series D	\$707.5	Bill & Melinda Gates Foundation	N/A
Kitopi	July 1, 2021	Ghost kitchens	Series C	\$415.0	SoftBank Investment Advisers	N/A
OPay	August 23, 2021	Apps & marketplaces	Series C	\$400.0	SoftBank Investment Advisers	N/A
Perfect Day	September 29, 2021	Fermented protein	Series D1	\$350.0	Canada Pension Plan Investment Board, Temasek Holdings	1.5x
Nature's FYND	July 19, 2021	Fermented protein	Series C	\$350.0	SoftBank Investment Advisers	3.7x
Xingsheng Selected	July 16, 2021	Online grocers	Late-stage VC	\$300.0	Ontario Teachers' Pension Plan	1.5x
Apeel	August 18, 2021	Food waste & traceability	Series E	\$280.0	N/A	2.0x

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



# VC ACTIVITY

Figure 16.  
Key foodtech VC exits

COMPANY	CLOSE DATE	SUBSEGMENT	EXIT SIZE	EXIT TYPE	ACQUIRER(S)/INDEX
Ginkgo Bioworks Holdings	September 17, 2021	Novel ingredients	\$14,225.0	Reverse merger	Soaring Eagle Acquisition
Zomato	July 23, 2021	Apps & marketplaces	\$6,792.6	IPO	NSE: ZOMATO
OrderYOYO	July 2, 2021	Apps & marketplaces	\$105.6	IPO	CSE: YOYO
Helbiz	August 13, 2021	Ghost kitchens	Undisclosed	Reverse merger	GreenVision Acquisition
Bugfoundation	September 22, 2021	Novel ingredients	Undisclosed	M&A	Hans Kupfer & Sohn
Epicery	September 16, 2021	Apps & marketplaces	Undisclosed	M&A	Dynamic Parcel Distribution
Farmigo	September 14, 2021	Online grocers	Undisclosed	M&A	GrubMarket
Spyce	August 24, 2021	Kitchen tech & robotics	Undisclosed	M&A	Sweetgreen
Gaia Foods	August 9, 2021	Cultivated protein	Undisclosed	M&A	Shiok Meats
Zoglo's Incredible Food	July 26, 2021	Plant-based protein	Undisclosed	IPO	CNQ: ZOG

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



VC ACTIVITY

Figure 17.  
Key foodtech incumbents

COMPANY	SUBSEGMENT	KEY PRODUCTS	EV/NTM REVENUE*	EV/NTM EBITDA*
DoorDash	Apps & marketplaces	Restaurant delivery	11.8x	150.3x
De’Longhi	Kitchentech & robotics	Smart appliances	1.5x	9.5x
Beyond Meat	Plant-based protein	Plant-based meat	8.4x	N/A
Blue Apron	Meal kits	Meal kits	0.4x	59.6x
Just Eat Takeaway.com	Apps & marketplaces	Restaurant delivery	2.2x	N/A
Yelp	Restaurant recommendation & review	Restaurant reviews & ordering	2.1x	9.8x
Amazon	Online grocers	Online grocery, e-commerce	3.1x	19.0x
Nestlé	Plant-based protein	Alt-proteins, consumer packaged goods	0.9x	N/A
Dingdong Maicai	Online grocers	Online grocery	1.6x	N/A
HelloFresh	Meal kits	Meal kits	N/A	N/A

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



# VC ACTIVITY

Figure 18.  
Key VC-backed foodtech companies

COMPANY	SUBSEGMENT	VC RAISED (\$B)*	POST-MONEY VALUATION (\$M)	MOST RECENT VC STAGE
Ele.me	Apps & marketplaces	\$7.3	N/A	Series A
Xingsheng Selected	Online grocers	\$5.4	\$8,000.0	Late-stage VC
goPuff	Online grocers	\$3.4	\$16.5	Series A
Swiggy	Apps & marketplaces	\$2.9	N/A	Series A
Instacart	Online grocers, apps & marketplaces	\$2.7	\$25.4	Series A
Nuro	Delivery robots	\$1.5	\$250.0	Series A
Impossible Foods	Plant-based protein	\$1.4	\$147.3	Series B
Glovo	Apps & marketplaces	\$1.3	N/A	Early-stage VC
Gorillas	Apps & marketplaces	\$1.3	\$130.4	Series A
Nice Tuan	Apps & marketplaces	\$1.2	N/A	Series A

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





# League tables

Figure 19.  
Most active foodtech VC investors in 2021

INVESTOR	DEAL COUNT*	ANGEL & SEED	EARLY STAGE	LATE STAGE
SOSV	23	10	3	10
Gaingels	20	6	5	9
Siddhi Capital	14	5	8	1
Tiger Global Management	14	0	2	12
CPT Capital	13	2	7	4
10X Capital	11	4	3	4
Global Founders Capital	11	3	8	0
FJ Labs	10	2	5	3
SoftBank Investment Advisers	10	0	0	10

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



LEAGUE TABLES

Figure 20.  
Most active foodtech private equity investors since 2019

INVESTOR	DEAL COUNT*	PRIMARY INVESTOR TYPE
Providence Strategic Growth	3	Growth/expansion
The CapStreet Group	2	PE/buyout
Butterfly Equity	2	PE/buyout
Warburg Pincus	2	PE/buyout
Virgo Investment Group	2	PE/buyout
General Atlantic	2	Growth/expansion
InvestEco Capital	2	Growth/expansion
Verdane	2	PE/buyout
PAI Partners	2	PE/buyout

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

# Emerging opportunities

## Alt-proteins: Fungi

Fungi is the next wonder ingredient, promising to improve taste, texture, and the nutritional profile of alt-proteins.

## Sustainable online grocery

Online grocers appeal to consumers through sustainability improvements.



# Alt-proteins: Fungi

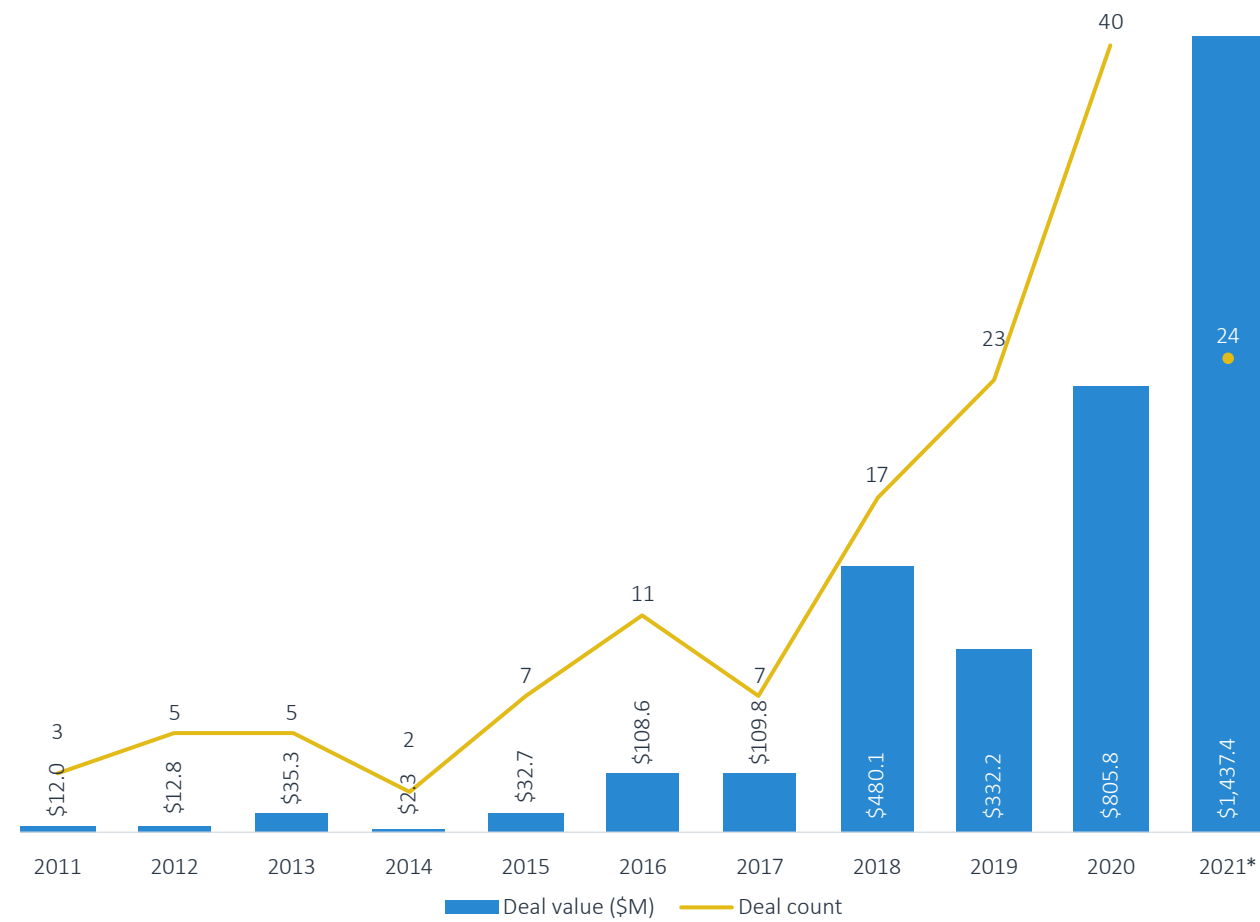
## Overview

**Fungi gaining attention as an alt-protein ingredient.** Fungus is one of a variety of materials—such as microalgae, microbes, and plant proteins—that can be fermented to produce alternative protein ingredients with improved taste, texture, and nutritional profiles. Fermentation can also speed the growth time of the source ingredients, which will be beneficial as production scales to industrial levels. While not the only material to be fermented for use as an alt-protein, fungus is one of the most popular due to its inherent benefits.

The type of fungi typically used for alt-proteins is called mycelium. Similar to roots in a plant, mycelium are the structural fibers of fungi responsible for absorbing nutrients from the surrounding environment. As food, fungi provide nutritional value and a meat-like texture and are more resource efficient to produce than animal protein. Fungi are used in a variety of alt-protein products to mimic pork, chicken, beef, and other meats. It can be the core ingredient in fermented proteins, or it can be used to enhance cultivated or plant-based food products to achieve desired attributes.

Fungi will likely play a key role in achieving whole cuts of meat, such as steak—a top goal for alt-protein providers. Provider **Emergy Foods** has produced a mycelium-based steak product that convincingly mimics animal muscle. However, it will take further innovation to combine synthetic animal fat.

Figure 21. FERMENTED PROTEIN VC DEAL ACTIVITY



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



## ALT-PROTEINS: FUNGI

### Corporate food partnerships validate the opportunity.

- The venture arm of **Hormel Foods** (NYSE: HRL) entered into a partnership agreement with **Better Meat** to commercialize fungi-based mycoprotein and plant-based meat products. **Better Meat** is a supplier of mycoprotein and plant-based ingredients for use in alt-meats. The company also supplies Perdue Foods with plant-based ingredients for use in its hybrid chicken nugget product that contains both plant-based and animal meats.
- **Unilever** (LON: ULVR) recently partnered with startup **Enough** to develop mycoprotein-based products for its alt-protein brand **The Vegetarian Butcher**.
- **MycoTechnology** partnered with **JBS** (BVMF: JBSS3) subsidiary **Planterra** to commercialize mycoprotein. **Planterra** produces plant-based meats. The partnership will help **Planterra** take advantage of the functional benefits of mycoprotein, such as the improved digestibility and texture over existing plant-based proteins.

### Market direction

**Fungi-based seafood.** Some companies are exploring using fermentation to produce other types of proteins such as seafood and eggs. Startup **AquaCultured Foods** develops a variety of fermentation-based alt-seafoods such as shrimp, white fish, and calamari. Other providers that are developing fermented seafood products include **Prime Roots**, **Quorn**, and **Meati**. Providers developing fermented egg proteins include **BiosciencZ** and **The Protein Brewery**.

In recent years, funding for fermented protein startups has increased significantly. In 2020, deal count nearly doubled YoY, with 40 deals closed compared with 23 in 2019. As of Q3 2021,

deal values totaled \$1.4 billion, up 78.4% from 2020 year-end totals. Funding in fermented proteins is highly concentrated. Since 2020, three fermented protein companies—**Perfect Day**, **Nature's FYND**, and **Motif**—captured 60.1% of VC funding. **MycoTechnology** is one of the most well-funded VC-backed providers, with \$198.2 million raised to date. **MycoTechnology** has received venture investments from various multinational food companies, including **Syngenta**, **Tyson** (NYSE: TSN), **Ajinomoto** (TKS: 2802), **Kellogg's** (NYSE: K), and **Rich Products**.

### Notable deals

- One of the largest foodtech deals of Q3 involved Colorado-based mycoprotein producer **Meati Foods** (established as Emergy Inc.). The company raised a \$50.0 million Series B to build a production facility outside of Denver. **Meati** produces whole cuts of alt-meat, including mycelium-based steak, which was commercialized for a limited time at a Colorado restaurant in 2020.
- **Nature's FYND** has attracted major VC funding for its novel fungi protein. The company's fungi microbes were discovered in geothermal springs at Yellowstone National Park as part of a 2009 NASA-funded research project, which led to the commercialization of two products: meatless breakfast patties and alt-protein cream cheese. Founded in 2012, the company launched its first products in 2021, 12 years after the fungi was discovered. **Nature's FYND** has raised \$508.0 million to date, with backing from Softbank, **ADM** (NYSE: ADM), **Danone** (PAR: BN), and a variety of other VCs.
- Other leading fermented fungi startups include **Prime Roots**, which produces alt-meats such as pork and beef; **Atlast**, which produces mycelium-based bacon; and **Terramino Foods**, which develops mycelium-based meat and seafood.



# ALT-PROTEINS: FUNGI

Figure 22.  
Key fermented fungi companies by VC raised to date

COMPANY	VC RAISED (\$M)*	POST-MONEY VALUATION (\$M)	MOST RECENT VC DEAL TYPE	HQ LOCATION
Nature’s FYND	\$463.0	\$1,750.0	Series C	Chicago, Illinois, US
MycoTechnology	\$130.9	\$521.8	Series E	Aurora, Colorado, US
Ecovative Design	\$97.4	N/A	Series D	Troy, New York, US
Meati Foods	\$83.0	\$325.0	Series B	Boulder, Colorado, US
Enough	\$60.2	\$17.3	Series B	Glasgow, Scotland
Atlast Food	\$47.0	\$130.0	Series A	New York, New York, US
The Protein Brewery	\$25.9	N/A	Series B	Breda, Netherlands
Prime Roots	\$18.3	\$46.0	Series A	Berkeley, California, US
Mushlabs	\$11.9	\$23.2	Series A	Berlin, Germany
Mycorena	\$11.0	N/A	Series A	Gothenburg, Sweden

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



# Sustainable online grocery

## Overview

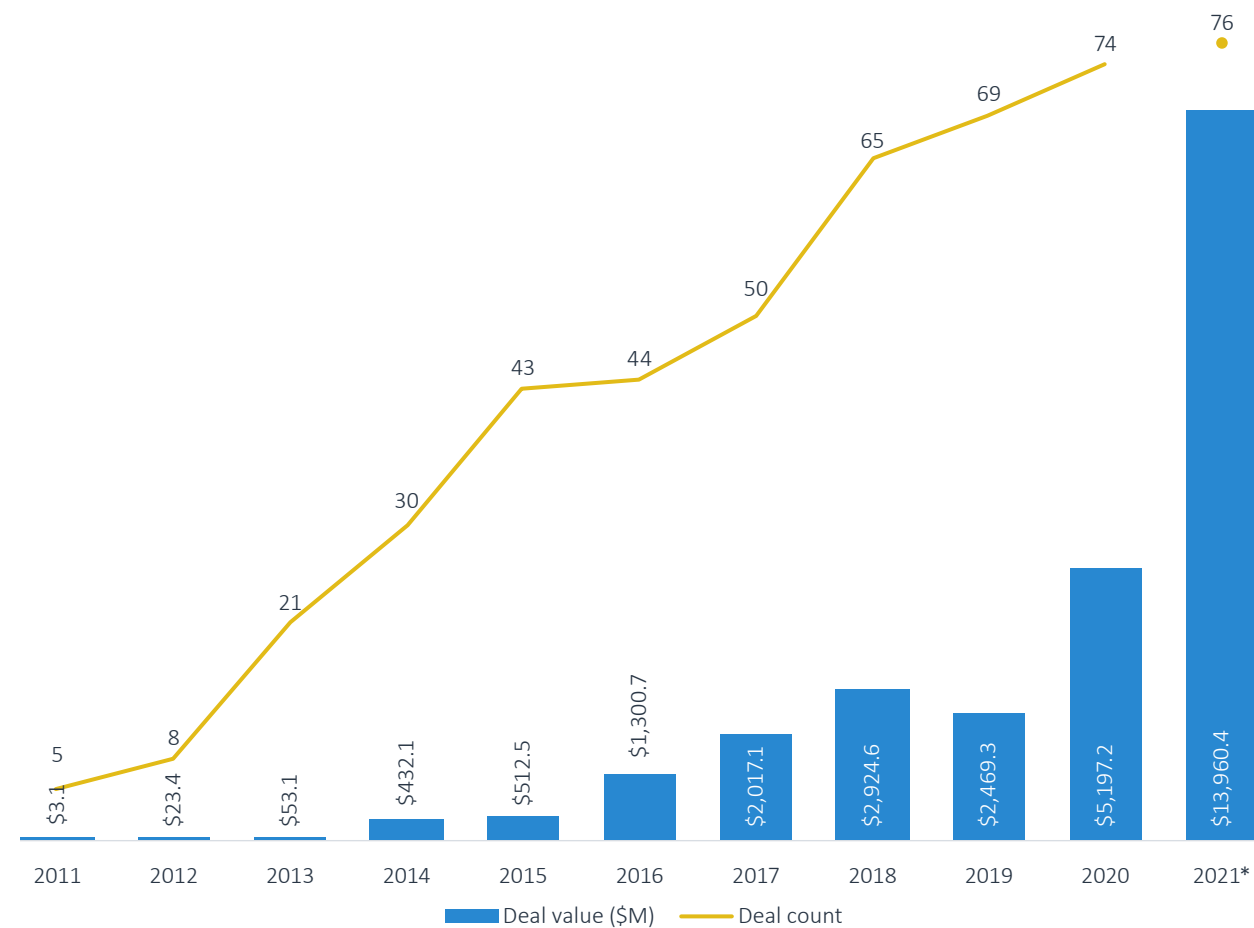
Between August 2019 and August 2020, monthly US online grocery sales exploded to \$8 billion from only \$2 billion before the pandemic began.<sup>1</sup> Grocers were largely unprepared for the rise in demand, which led to website crashes, widespread errors, and poor customer experiences. As a result, many e-commerce providers invested heavily in software and supply chain infrastructure focused on the grocery opportunity. Similarly, VC funding for online grocers reached \$14.0 billion in 2021 as of September 30, up from \$2.5 billion in 2019.

Netherlands-based online grocer **Picnic** has been a major recipient of funding in this sector. The startup raised a \$707.5 million Series D on September 16, with impact investor Bill & Melinda Gates Foundation leading the latest round. **Picnic** focuses on sustainable operations by relying on technology to minimize food waste and electric delivery vehicles to keep carbon emissions low. **Picnic** will direct its funding toward building out automated fulfillment centers and growing its electric vehicle (EV) delivery fleet, as well as software improvements.

With grocers establishing online infrastructure, we expect the next wave of innovation will focus on sustainability opportunities. Traditional supermarkets face significant challenges keeping items stocked and forecasting demand, with supply imbalances often leading to food waste. Online ordering can improve demand forecasting by increasing visibility into demand trends and refining grocers’ abilities to control which items get shipped, such as those nearest

1: “Sept 2021: U.S. Online Grocery Sales total \$8.0 Billion,” Brick Meets Click, October 13, 2021.

Figure 23. ONLINE GROCERY VC DEAL ACTIVITY



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



# SUSTAINABLE ONLINE GROCERY

expiration. Online grocery also has the potential to reduce carbon emissions, as centralized grocery supply in large regional fulfillment centers can lower transportation costs and waste associated with keeping neighborhood grocery stores stocked. In addition, batch order delivery from these fulfillment centers can result in shorter drive times relative to consumers driving to stores, while electric fleets further reduce carbon exhaust.

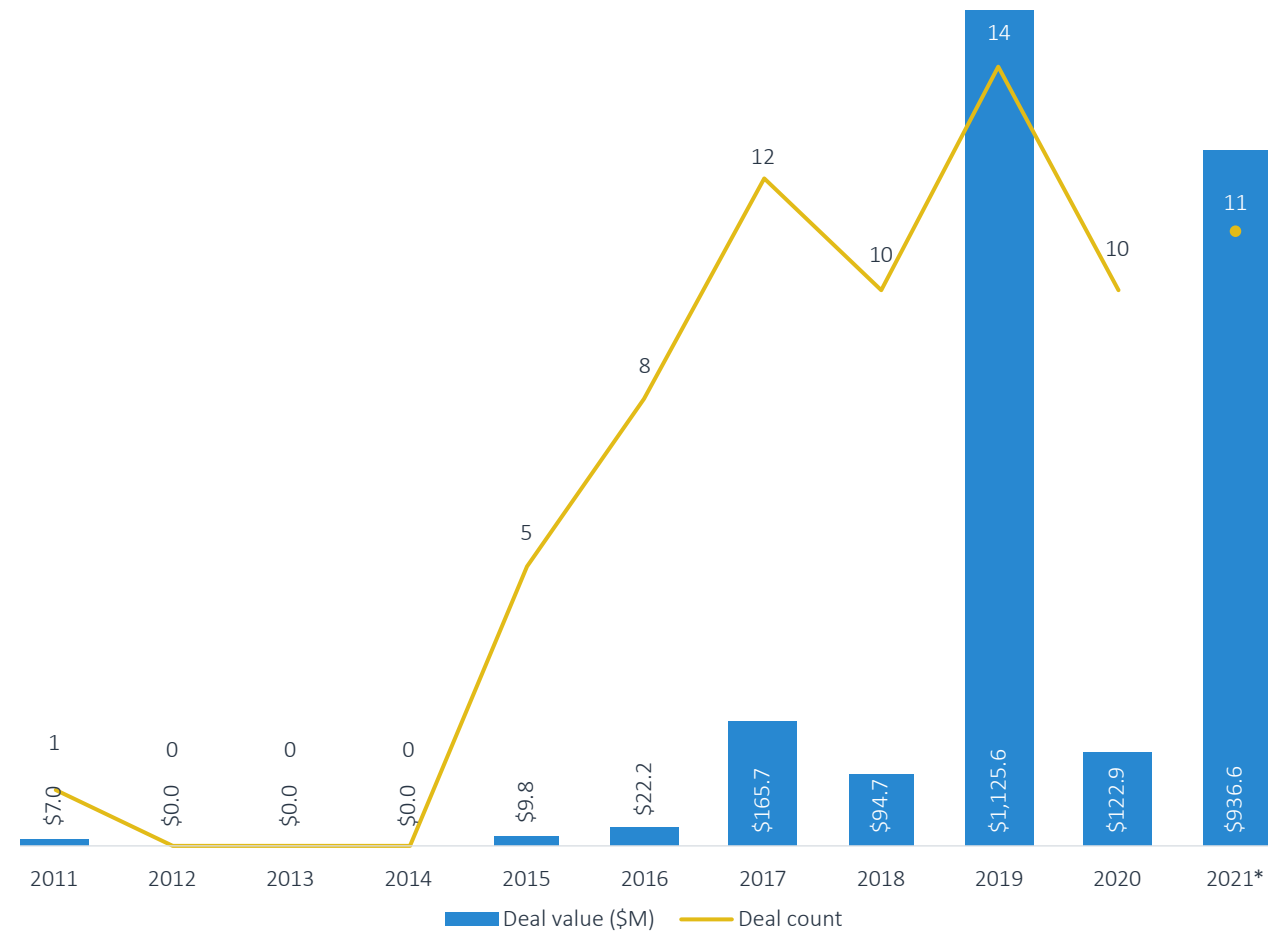
## Market direction

**Automated & robotized fulfillment centers.** Automated fulfillment centers can increase order fulfillment efficiency and reduce costs for online grocers. Benefits include: decreased handling of produce, which can cause bruising and lead to food waste; temperature monitoring sensors, which ensure temperatures are maintained to maximize freshness and shelf life of perishables; and intelligent order packing, which protects fragile goods while minimizing bag use. **Ocado** (LON: OCDO) is a leader in automated fulfillment centers and uses the technology at **Kroger** (NYSE: KR) fulfillment centers.

**Delivery robots.** Globally, there are over 20 startups focused on the opportunity to develop electric delivery robots. These include several form factors—from small, single-compartment robots that move slowly on sidewalks, to large, street-legal autonomous vehicles that deliver multiple orders at a time. Key VC-backed providers include **Coco**, **Tortoise**, and **Nuro**.

**Circular packaging.** Online grocery delivery fleets can increase the use of reusable and returnable food packaging by creating a courier infrastructure capable of returning used packaging to central facilities. To address plastic waste, Loop by **TerraCycle** has partnered with **Kroger**, **Walgreens** (NASDAQ: WBA), **Tesco** (LON: TSCO), and other retailers, and a growing list of consumer brands to launch returnable packaging.

Figure 24. DELIVERY ROBOTS VC DEAL ACTIVITY



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





# SUSTAINABLE ONLINE GROCERY

Figure 25.  
Key online grocery companies by VC raised to date

COMPANY	VC RAISED (\$M)*	POST-MONEY VALUATION (\$B)	MOST RECENT VC DEAL TYPE	HQ LOCATION
Xingsheng Selected	\$5,440.0	\$12.0	Late-stage VC	Changsha, China
goPuff	\$3,434.7	\$15.0	Series H	Philadelphia, Pennsylvania, US
Instacart	\$2,734.8	\$45.0	M&A	San Francisco, California, US
Gorillas	\$1,289.8	\$3.0	Series C	Berlin, Germany
Nice Tuan	\$1,227.5	N/A	Series D	Beijing, China
Picnic	\$1,093.2	N/A	Series D	Amsterdam, Netherlands
Getir	\$1,026.0	\$7.5	Series D	Istanbul, Turkey
Grofers	\$641.0	\$1.1	Late-stage VC	Gurugram, India
Oda	\$579.9	\$1.2	Late-stage VC	Lørenskog, Norway
Misfits Market	\$526.5	\$2.0	Series C1	Delanco, New Jersey, US

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

**Select company highlights**



SELECT COMPANY HIGHLIGHT | REVOLUTION FOODS



Founded  
**2006**  
  
**1,500** employees

Total VC raised  
**\$256.7M**

Last known valuation  
**\$340.4M post-money**

Last financing  
Raised **\$59.8M** in late-stage VC

Lead investors  
Oak Investment Partners,  
Nuveen Investments,  
Revolution

Overview

Oakland, California-based **Revolution Foods** is a provider of nutritious and culturally relevant meals for children, older adults, low-income populations, and other at-risk groups. The company began with a healthful school lunch program subsidized by federal meal assistance initiatives such as the National School Lunch Program. Leveraging federal funding from the COVID-19 relief bill, it has since expanded, partnering with city governments to offer community meals to other groups. Despite its social mission, the company is a registered B-Corp and recently became a Delaware Public Benefit Corporation (PBC), meaning it is a for-profit enterprise committed to “operating sustainably and generating social impact through its ongoing operations.”<sup>2</sup> Since March 2020, **Revolution Foods** has delivered more than 60 million meals to communities across 23 US states.

**Revolution Foods** drives revenue through private-public partnerships such as city-funded meal campaigns, federal funding, and retail sales. Costs are controlled through centralized meal prep and supply chain operations, with meal prep facilities located near target markets to minimize transportation costs.

Leadership

**Revolution Foods** was co-founded by Kirsten Tobey and Kristen Richmond. Tobey has a background in education, while Richmond’s experience lies in the investment banking realm. The business emerged from a business plan developed by both Tobey and Richmond for a social innovation course while the two were pursuing MBAs at UC Berkeley.

Competitors

**Revolution Foods** competes with food service providers such as **Aramark** (NYSE: ARMK) and **National Food Group** that cater to schools, offices, healthcare facilities, and various other industries. These companies benefit from size and scale. However, they do not have the same focus on nutrition, sustainability, or cultural relevance. **Revolution Foods’** largest VC-backed competitor is **Little Spoon**, which produces baby food and offers meals for toddlers and children. Other VC-backed providers include **Red Rabbit**, **Yumble**, and **The New Luncher**.

2: “MoFo Advises Revolution Foods on Financing and Conversion to Public Benefit Corporation,” Morrison & Foerster, September 10, 2021.



# SELECT COMPANY HIGHLIGHT | REVOLUTION FOODS

## Outlook

**Revolution Foods** offers distinct advantages over competitors, including locally sourced ingredients and a nimble supply chain capable of controlling costs and quickly adapting to consumer demands. In the long term, we are concerned about the model’s reliance on federal funding. Investors focused purely on financial returns may be a poor fit for the company’s emphasis on social impact and its B-Corp and PBC status.

Figure 26.  
Financing history

SERIES A	SERIES B	SERIES C	SERIES D	SERIES E	SERIES F
<b>June 30, 2006</b>	<b>May 10, 2007</b>	<b>May 23, 2008</b>	<b>August 4, 2009</b>	<b>December 17, 2010</b>	<b>February 27, 2012</b>
<b>Total raised:</b> \$600,000	<b>Total raised (\$M):</b> \$3.2	<b>Total raised (\$M):</b> \$6.5	<b>Total raised (\$M):</b> \$6.8	<b>Total raised (\$M):</b> \$20.0	<b>Total raised (\$M):</b> \$12.8
<b>Pre-money valuation (\$M):</b> \$1.3	<b>Pre-money valuation (\$M):</b> \$11.0	<b>Pre-money valuation (\$M):</b> \$28.0	<b>Pre-money valuation (\$M):</b> \$40.0	<b>Pre-money valuation (\$M):</b> \$50.0	<b>Pre-money valuation (\$M):</b> \$85.0
<b>Lead investor:</b> Physic Ventures	<b>Investors:</b> Catamount Ventures, DBL Partners, The Westly Group	<b>Investors:</b> Catamount Ventures, DBL Partners, The Westly Group	<b>Investors:</b> Catamount Ventures, DBL Partners, The Westly Group	<b>Investors:</b> Catamount Ventures, DBL Partners, Oak Investment Partners, The Westly Group, W. K. Kellogg Foundation	<b>Investors:</b> Catamount Ventures, DBL Partners, NewSchools Venture Fund, Oak Investment Partners, The Westly Group



## SELECT COMPANY HIGHLIGHT | REVOLUTION FOODS

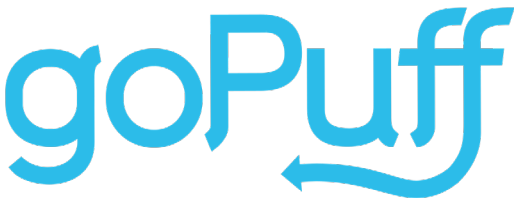
Figure 26.

### Financing history (cont.)

<b>SERIES G</b>  <b>December 6, 2012</b>  <b>Total raised (\$M):</b> \$15.2 <b>Pre-money valuation (\$M):</b> \$123.0 <b>Investors:</b> ATEL Capital Group, Catamount Ventures, DBL Partners, Oak Investment Partners, The Westly Group	<b>SERIES G</b>  <b>July 31, 2013</b>  <b>Total raised (\$M):</b> \$4.0 <b>Pre-money valuation (\$M):</b> \$120.0 <b>Investors:</b> NGEN Partners, The TCW Group, The Westly Group, Unilever Ventures	<b>SERIES H</b>  <b>June 18, 2014</b>  <b>Total raised (\$M):</b> \$32.1 <b>Pre-money valuation (\$M):</b> \$171.3 <b>Lead investor:</b> Revolution	<b>LATE-STAGE VC</b>  <b>November 19, 2015</b>  <b>Total raised (\$M):</b> N/A <b>Pre-money valuation (\$M):</b> N/A <b>Lead investor:</b> Revolution	<b>SERIES I</b>  <b>February 16, 2018</b>  <b>Total raised (\$M):</b> \$46.0 <b>Pre-money valuation (\$M):</b> \$260.0 <b>Investors:</b> ARB, Collaborative Fund, Revolution, Tao Capital Partners	<b>LATE-STAGE VC</b>  <b>February 20, 2019</b>  <b>Total raised (\$M):</b> \$10.0 <b>Pre-money valuation (\$M):</b> N/A <b>Lead investor:</b> Nuveen Investments
<b>SERIES J</b>  <b>March 25, 2019</b>  <b>Total raised (\$M):</b> \$30.4 <b>Pre-money valuation (\$M):</b> \$310.0 <b>Investors:</b> Diverse Communities Impact Fund, Revolution	<b>SERIES K</b>  <b>March 20, 2020</b>  <b>Total raised (\$M):</b> \$9.5 <b>Pre-money valuation (\$M):</b> N/A <b>Lead investor:</b> Oak Investment Partners	<b>LATE-STAGE VC</b>  <b>September 3, 2021</b>  <b>Total raised (\$M):</b> \$59.8 <b>Pre-money valuation (\$M):</b> N/A <b>Investors:</b> N/A			



SELECT COMPANY HIGHLIGHT | GOPUFF



**Founded**  
**2013**

**2,663+ employees**

**Total VC raised**  
**\$3.4B**

**Last known valuation**  
**\$15.0B post-money**

**Last financing**  
Raised **\$1.0B** in a Series H

**Lead investors**  
Hedosophia, Accel, D1 Capital Partners, SoftBank Group, Anthos Capital

Overview

**goPuff** was founded in 2013 by college students who sought to deliver convenience goods such as snack foods and sodas within 30 minutes. Today, the company has expanded on that vision to become one of the largest global convenience delivery providers—operating in over 1,000 cities in the US and Europe through a combination of dark stores and partnerships with convenience chains such as **7-Eleven**. **goPuff** makes money through consumer sales, delivery fees, and brand partnerships and is rapidly expanding its product offerings and availability. In the past year, **goPuff** acquired two alcoholic beverage retailers, **BevMo!** and **Liquor Barn**, as liquor delivery is a growing, competitive segment among third-party delivery providers. **goPuff** also entered European markets this year through acquisitions of **Fancy** and **Dija**. Both providers are a part of the ultrafast grocery trend that promises delivery within 15 minutes. These acquisitions may give **goPuff** a competitive advantage as it builds out its own ultrafast capabilities. The next steps for the company involve opening brick-and-mortar convenience stores, starting in San Francisco, that allow in-person shopping and are used by **goPuff** couriers to fulfill online orders.

Leadership

**goPuff** was co-founded by Yakir Gola and Rafael Ilishayev. The two met at Drexel University before dropping out to pursue the venture. The founders have strengthened the leadership

team by bringing on experienced hires such as former **Beyond Meat** (NASDAQ: BYND) COO, Sanjay Shah, to head North America fulfillment and former VP of **Sweetgreen**, Dan Beranek, to serve as VP of Product for fresh food.

Competitors

**goPuff** competes with brick-and-mortar convenience stores and third-party delivery providers. The company was formed to disrupt the convenience store model. However, large chains have been partnering with third-party delivery providers and/or developing proprietary online delivery offerings, such as **7-Eleven**’s 7Now, which could present significant headwinds in the near term.

Many of the largest third-party food and grocery delivery providers have expanded into convenience. **Instacart**, **Uber** (NYSE: UBER), and **DoorDash** (NYSE: DASH) all offer convenience items. Most recently, **goPuff** has faced new competition from the growing ultrafast grocery category. Providers such as **Getir**, **Gorillas**, and **Flink** offer delivery of convenience and grocery items in as little as 10 minutes by using a hyperlocal dark store model. Many of these providers shave off vital delivery minutes by operating in densely populated urban environments and employing couriers instead of relying on gig workers, as in the case of **goPuff**. The rise of this category may pressure **goPuff** to revise its operational model to remain competitive.



# SELECT COMPANY HIGHLIGHT | GOPUFF

## Outlook

**goPuff** is one of the highest valued and most well-funded VC-backed delivery companies in the world. It has expanded rapidly over the past eight years and is competing aggressively for market share in key categories such as alcohol and ultrafast delivery. Long term, we are optimistic about its growth prospects but cautious about encroaching competition from rival third-party delivery providers. Delivery is a high-volume, low-margin business that likely has room for only one or two providers. The sprawling competitive landscape can largely be attributed to VC funding, which is subsidizing operations. Long term, **goPuff**'s deep pockets may provide it with the endurance needed to outlast its rivals.

Figure 27.  
Financing history

SERIES A	SERIES B	SERIES C	LATE-STAGE VC	SERIES E1	SERIES F
June 1, 2016	December 12, 2016	November 20, 2017	November 1, 2018	August 1, 2019	September 17, 2020
Total raised (\$M): \$8.3	Total raised (\$M): \$13.0 (estimated)	Total raised (\$M): \$25.0 (estimated)	Total raised (\$M): \$108.5	Total raised (\$M): \$750.0	Total raised (\$M): \$380.0
Pre-money valuation (\$M): \$8.3	Pre-money valuation (\$M): \$50.0	Pre-money valuation (\$M): \$165.0	Pre-money valuation (\$M): \$900.0	Pre-money valuation (\$B): \$1.5	Pre-money valuation (\$B): \$3.5
Lead investor: Anthos Capital	Investors: N/A	Investors: N/A	Investors: 3L Capital, Accel	Lead investor: SoftBank Group	Lead investor: Accel, D1 Capital Partners



SELECT COMPANY HIGHLIGHT | GOPUFF

Figure 27.  
Financing history (cont.)

SERIES G	SERIES H
<p>March 23, 2021</p> <p>Total raised (\$B): \$1.2</p> <p>Pre-money valuation (\$B): \$7.8</p> <p>Investors: Baillie Gifford, D1 Capital Partners, Eldridge, Fidelity Management &amp; Research, Luxor Capital, SoftBank Group</p>	<p>July 30, 2021</p> <p>Total raised (\$B): \$1.0</p> <p>Pre-money valuation (\$B): \$14.0</p> <p>Lead investor: Hedosophia</p>





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