



Insect-Based Protein Snacks: Sector Analysis

Q3 2017

Radicle Coverage

The following are some of the sectors Radicle has produced reports on to-date. Radicle is building a library with the goal of covering every startup sector. If you're interested in sector research that isn't listed below, email us at info@rad.report.

Alcohol Discovery Services
 Audio Speech Recognition
 AV Mapping Technology
 Bar Inventory Management
 Beauty DTC
 Bloomberg Killers
 Camping Gear Rental
 Chronic and Ongoing Care Management
 Commercial and Residential Painting
 Concierge Medicine
 Construction Equipment Rental Marketplace
 Contact Lenses
 Cross-Device TV Ad Retargeting
 D2C Bedding/ Linens
 D2C Furniture
 D2C Home Goods
 D2C Mattress
 D2C Office Furniture
 Digital Stock Content
 Email Marketing Services
 Email Signature Marketing
 Emerging Market Grocery Delivery
 Fine Art Discovery & E-commerce
 Furniture + AR
 Furniture + Technology
 Furniture Rental
 Future of Play (Robotic Toys)
 Grocery Delivery (Ex US-LatAM)
 Grocery Delivery (General Delivery)
 Grocery Delivery (Latin American / Same Day)
 Grocery Delivery (US / Same-Day)
 Healthy Subsc. Foods
 House Calls

Image Recognition
 Image Recognition (Products and Marketing)
 Influencer Discovery Analytics
 Influencer Marketplaces
 Influencer Talent Agencies
 Influencer Campaign Management Software
 Insect-Based Protein Snacks
 Latin American E-Commerce Companies
 Latin American Grocery Delivery
 Latin American On-Demand Food Delivery
 Latin American On-Demand Transportation
 Marijuana Delivery
 Meal Delivery Services
 Meat and Fish Replication
 Media Monitoring
 Medical Marijuana Delivery
 Medication Adherence
 Mental Health
 Mobile Location-Based Marketing
 Multi-brand Furniture / Home Decor E-commerce
 Natural and Organic Snack Box
 Non-Profit Donation
 Object Recognition: Marketing, Products and Brands
 Office Services
 Online B2B Alcohol Retailers
 Online Cloud Computing Training Platforms
 Onsite Care
 Optical Character Recognition / Document Search
 Organic and Natural Food E-Commerce
 Organic Product Manufacturer
 Organic/Natural Food Vertical Brands
 Over-the-top (OTT) Television Entertainment (U.S.)

Peer-to-Peer Rental Marketplaces (Cars)
 Peer-to-Peer Rental Marketplaces (General)
 Photography Marketing
 Plus-Size Women's Clothing
 Renters and Home Insurance
 Reservation Management
 Restaurant POS
 ROW Alcohol Delivery
 Rx Delivery
 Secondhand Furniture Marketplace
 Senior Care Report
 Social Media Marketing
 Social Video Messaging
 Software for Influencers
 Software providers for pharmacies, physicians and health plans
 Specialty Foods E-Commerce
 Storage
 Telemedicine for receiving prescriptions from doctors
 Telemedicine/ Medication Delivery
 US Dog Walking and Sitting
 US Food Delivery
 US Meal Kits
 US Meal Replacement Drinks
 US Office Services
 US Over-the-top (OTT) Video News
 US Retail Alcohol Delivery
 US Same-Day Grocery Delivery
 US Tele dermatology
 Video Recognition: Surveillance
 Video Search
 Video Telemedicine
 WiFi CRM

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Table of Contents

Insect-Based Protein Snacks: Sector Analysis	0
Sector Positioning	5
Sector Definition and Adjacent Landscape	6
Why Now?	7
Comparison of Selected Startups	8
Selected Companies	9
Feature Benchmarking	10
Capital Traction & Concentration™	11
Radicle 2x2 Matrix	12
Market Sizing Considerations	13
Market Size & Growth	14
Customer Research	15
Respondent Demographics	17
Sector Potential & Valuation Perspectives	18
Relevant Exits, Public Comps, and Company Closings	19
Sector Valuation Potential	21
Indicative Revenue Multiple Analysis	22
SAM Penetration Analysis	23
Startup Profiles	25
Exo Protein Bars Essentials	26
Bitty Foods Essentials	28
Eat Grub Essentials	30
BugEater Labs Essentials	32
Chirps Chips Essentials	34
BSF Productions (Crowbar Protein) Essentials	36
Chapul Essentials	38

Tiny Farms Essentials	40
Appendix	42
Additional Companies	43
Further Reading	44
Investor Cluster Score™ Definition	45

Sector Positioning

As of Q3 2017, \$7.2m in venture capital funding has been invested across seven leading startups (one does not have disclosed financing).

Exo Protein has disclosed the most funding (\$5.2m in venture financing).

	Adjacent Sectors				
Insect-based protein snacks	Non-snack insect protein products	Insect-based feed or pet food	In-home insect growing kits	Food-grade insect farming companies	Other food alternatives
LEADING COMPANIES	REPRESENTATIVE COMPANIES	REPRESENTATIVE COMPANIES	REPRESENTATIVE COMPANIES	REPRESENTATIVE COMPANIES	REPRESENTATIVE COMPANIES
Exo Protein Bitty Eat Grub BugEater Labs Chirps Chips BSF Productions Chapul Tiny Farms	Aldento Biteback Insect	Wilder & Harrier ENTOFOOD	LIVIN Farms	Aspire Food Group Hargol FoodTech	Soylent Ripple Foods

Incumbents			
Protein bar companies	Other snack companies	Health food brands	Protein powder companies
REPRESENTATIVE COMPANIES	REPRESENTATIVE COMPANIES	REPRESENTATIVE COMPANIES	REPRESENTATIVE COMPANIES
General Mills (Ticker: GIS) — owns Nature Valley and Larabar Glanbia (Ticker: GLB.L) — owns ThinkThin Kind Snacks Clif Bar	PepsiCo (Ticker: PEP) Nestle (Ticker: NESN.VX) Kraft Heinz (Ticker: KHC) Dole	Danone (Ticker: BN.PA) — owns WhiteWave Foods Hain Celestial (Ticker: HAIN) Newman's Own	Various

Sector Definition and Adjacent Landscape

Selected startups

Companies in this sector sell their own brand of insect-based snacks online. We defer to the [BBC](#) list of insects when assessing whether a species is technically an insect. These companies sell products for human, rather than animal, consumption. Companies in this sector all meet the following criteria:

- They must sell ready-to-eat insect-based snacks. Snacks include chips and similar items, as well as protein powders and bars. These categories *do not* include food products that are not ready-to-eat snacks, such as pastas, oils, and baking flours.
- They have their own brand of products and sell through online channels.
- They sell products for human, rather than animal, consumption.
- They have received at least one round of financing according to either Crunchbase *OR* AngelList.
- They surfaced either through Radicle’s natural language processing (NLP) search or through Radicle’s top-down research.^{1 2}

Adjacent startups

In addition to the selected startups, there are numerous companies that are *adjacent* competitors. They have been classified as adjacent because they fail to meet some or all of the above criteria but still showed a significant similarity to our selected startups through our NLP search or top-down research. Below is a description of the adjacent sectors:

Non-snack insect protein products	Companies in this adjacent sector sell insect protein products that we deem outside of the “protein snack” category. These include but are not limited to uncooked pasta, palm oil alternatives, and bitters.
Insect-based feed or pet food	Companies in this adjacent sector sell insect-based animal food or animal feed. They therefore fail the criterion of selling products for human consumption.
In-home insect growing kits	Companies in this adjacent sector sell kits that enable customers to grow food-grade insects in their homes. This does not constitute a ready-to-eat “protein snack” item.
Food-grade insect farming companies	Companies in this adjacent sector farm and sell food-grade insects for cooking. They do not sell ready-to-eat snacks to consumers online and likely sell directly to retailers or food companies seeking to incorporate insects into their products.
Other food alternatives	Companies in this adjacent sector sell other food alternatives, such as dairy or meal replacement products. They do not use insect protein.

¹ Selected startups have not exited, through either acquisition or IPO.








² Selected startups are operational. Signs that companies are not operational include but are not limited to: company website does not work, copyright on website has not been updated in the past year, and company employees do not work at the company full-time according to LinkedIn.

Why Now?

Pain Points with the status quo		Has something changed to give startups an ability to disrupt incumbents?	
Pain Point	Explanation	New Ability/Theme	Consequences
Rising demand for protein	The world population continues to soar. There are ~7.5 billion people on earth today, and that number is expected to balloon to 9 billion by 2050. Feeding this number of people sustainably presents serious challenges, particularly due to the rising demand for protein. By 2050, global demand for protein is expected to grow 80% . Moreover, Americans eat an average of nine ounces of meat daily.	High supply of insects	According to Quartz, there are more than 1,900 edible insect species across the globe, indicating that insects are a potential solution to rising demand in protein.
		Insects are a good source of protein	According to the Food and Agriculture Organization (FAO), adult locusts and grasshoppers have similar levels of protein to raw beef, demonstrating that they may be an effective protein substitute.
Unsustainable protein sourcing	Current methods for sourcing protein can be unsustainable and have environmental consequences. Rearing traditional livestock accounts for nearly 20% of greenhouse gas emissions. This issue is particularly acute given rising demand for protein.	Insects are eco-friendly and sustainable	<p>Insects contribute less to global warming and use less energy and land than more traditional sources of protein do. Crickets in particular produce 80x less methane than cows. They also require 12x less food than cattle and half as much as pigs for the same amount of protein.</p> <p>Overall, insects are a more sustainable source of protein that use less land than other protein sources do.</p>

Comparison of Selected Startups

Selected Companies









Company	Description	HQ	Founded	Disclosed Funding (\$m) ³	Last Fundraising	Months Since Last Fundraising	Lead Investors ⁴	Investor Cluster Score™ ⁵
 Exo Protein	Exo Protein Bars (Exo) develops and sells protein snack products made from crickets. The company's first products are protein bars made from milled cricket flours .	New York, NY	2014	\$5.2m	April 2016	16	AccelFoods , Dentsu Ventures , Timothy Ferriss	1.0
 Bitty	Bitty Foods develops and sells snack products made from crickets. The company's first products were cookies before pivoting its focus to selling snack chips.	San Francisco, CA	2013	\$1.2m	N/A	N/A	N/A	N/A
 Eat Grub	Eat Grub sources and sells edible insects to its customers. In addition, Eat Grub also hosts insect food events and develops new insect recipes.	London, England	2011	\$311k	November 2016	9	N/A	N/A
 BugEater Labs	BugEater Labs is a product development lab and company that makes cricket protein-based food products. The company's goal is to get insects into popular foods, while making them taste good.	Lincoln, NE	2014	\$185k	N/A	N/A	NMotion	N/A
 Chirps Chips	Chirps Chips develops and sells snack products made from crickets. Chirps Chips sources its crickets from North American cricket farms — where crickets are organically fed.	Cambridge, MA	2013	\$125k	March 2017	5	N/A	0.3
 BSF Productions	BSF Productions (Crowbar Protein) produces energy bars made from nutritious insects. Its energy bars, called Jungle Bars , are offered in cranberry chocolate flavor.	Reykjavik, Iceland	2014	\$75k	March 2015	29	Technology Development Fund	N/A
 Chapul	Chapul develops and sells protein snack products made from crickets. The company's first products were protein bars. Chapul sources its crickets from cricket farms in California.	Salt Lake City, UT	2012	\$70k	July 2012	61	N/A	0.3
 Tiny Farms	Tiny Farms grows and sells crickets for human consumption. Based in California, it uses data-driven design, automation, and IoT (Internet-of-Things) technology to build sustainable farms.	Oakland, CA	2012	Undisclosed	February 2016	18	N/A	N/A

³ Crunchbase, other sources.

⁴ See [Essentials](#) for full list of company investors.

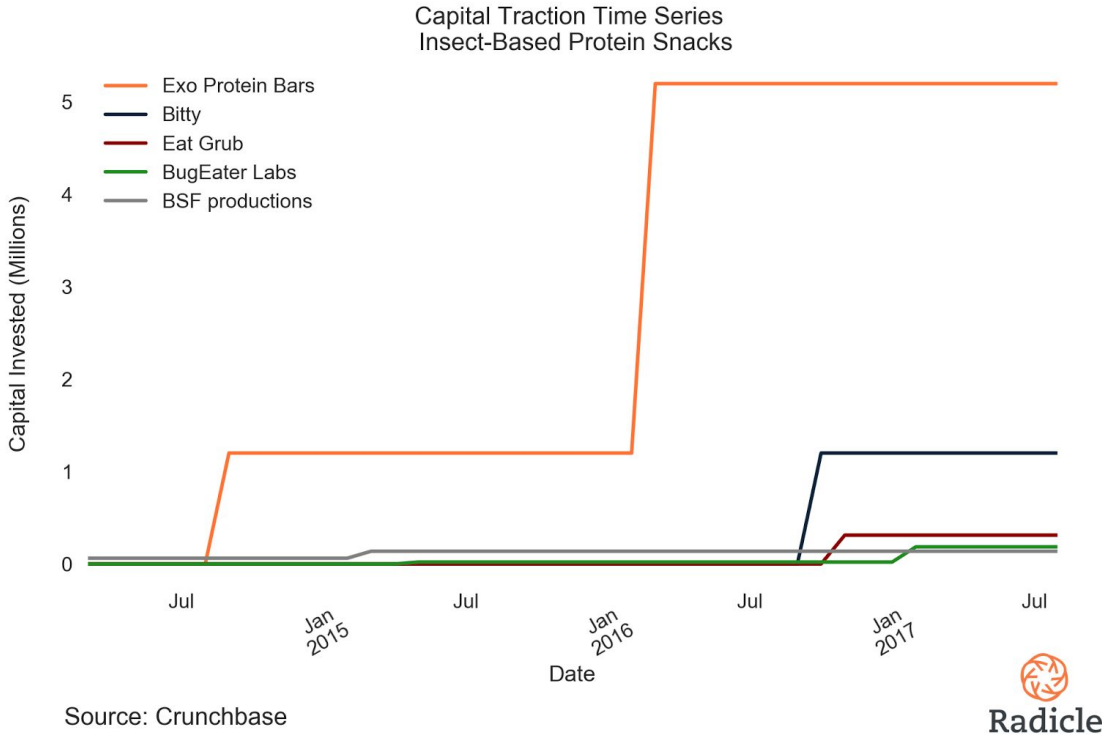
⁵ See definition and further discussion in the [Appendix](#).

Feature Benchmarking

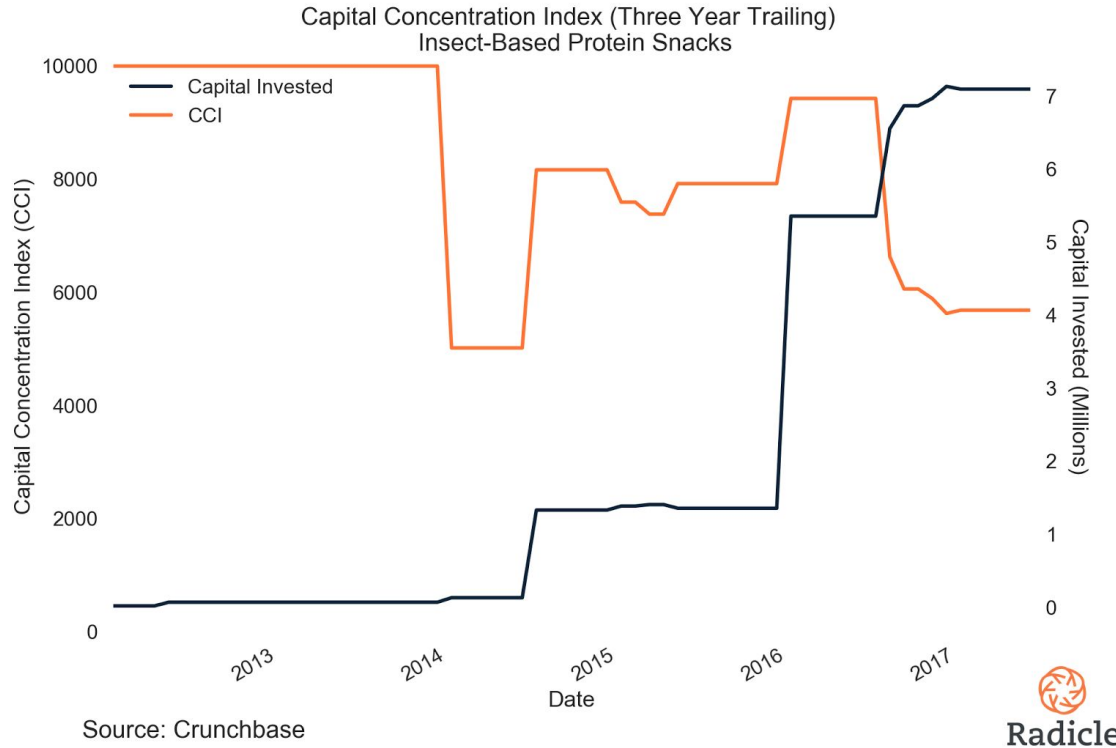
Company	Distribution Model	Subscription Option?	Products Offered	Sourcing Model	Price	Also sells to Corporates?
 Exo Protein	Online (own site, Amazon) and retail	Yes	Protein bars Developing protein powder	Domestic cricket farmers	No subscription — \$3/bar Subscription — \$2.67/bar	No
 Bitty	Online (Amazon) and retail	No	Chiridos (air-puffed chips) All-purpose baking flour	North American cricket farms	\$10/bag	Yes (cricket flour for bakeries and companies)
 Eat Grub	Own online site	No	Energy bars Roasted crickets Insects for cooking	Farms in The Netherlands with plans to start its own farm as of 2015	\$2.14/bar (bulk discounts offered)	No
 BugEater Labs	Online (own site) and select retail	No	“Jump” protein powder Pasta and rice (in development)	In-house lab	\$5/serving	No
 BSF Productions	Own online site and retail	No	“Jungle Bar” protein bars (sold out)	Sustainable farms	\$4.17/bar	No
 Chapul	Online (own site, Amazon) and retail	Yes	Cricket bars Protein powders	A farm in California	No subscription — \$3/bar Subscription — \$2.55/bar	No
 Chirps Chips	Online (own site, Amazon) and retail	Yes	Chirps cricket chips Cricket protein powder Cricket cookie mix	North American cricket farms	No subscription — \$3/serving Subscription — \$2.70/serving	No
 Tiny Farms	Own online site	No	Cricket powder Fried crickets	In-house smart, sustainable farms	\$3/pack	Yes (restaurants and makers of cricket flour)

Capital Traction & Concentration™

Capital traction over time



Sector capital concentration over time⁶



The Capital Traction Time Series plot (left) shows how Exo Protein is clearly a dominant player in the space in terms of capital accumulation. As a result, the Capital Concentration Index (right) for the sector is currently at 5,685 (Clear Leader). Overall, this is a sector where capital is highly concentrated among a few key startups, namely Exo Protein and Bitty.

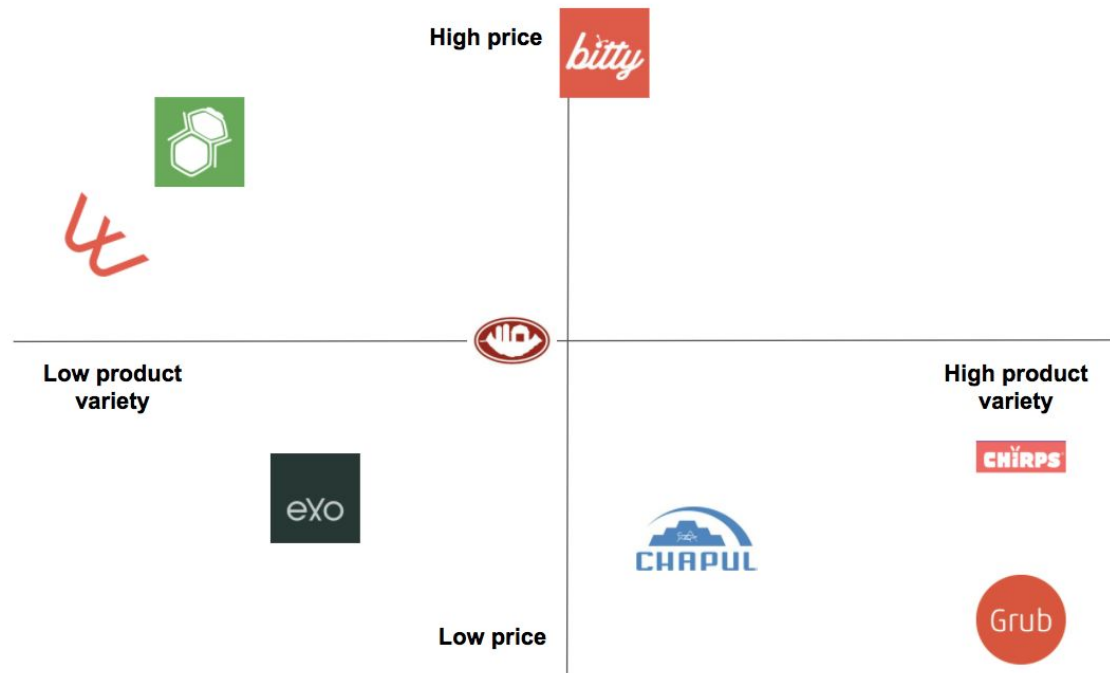
⁶ The Capital Concentration Index™ measures the degree to which venture capital dollars are consolidated among competing startups in a sector.

Radicle 2x2 Matrix

Price vs. Product variety

Price: Companies in this sector vary on price. On the high-end, Bitty sells one bag of chiridos for [\\$10](#). On the low-end, Eat Grub sells energy bars for [\\$2.14](#) and offers bulk discounts.

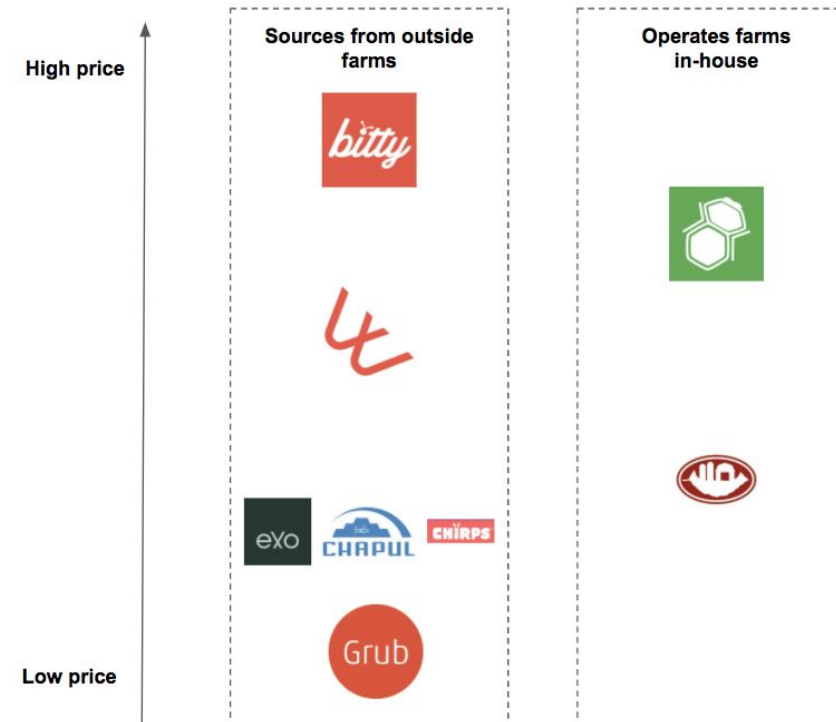
Product variety: Companies in this sector also vary in terms of how many products and flavors they offer. Some (Eat Grub, Chirps Chips) sell three different products, while BSF Productions only sells one product that, as of August 2017, was sold out online.



Price vs. Sourcing model

Price: (see description, left)

Sourcing model: Some companies in this sector (Exo Protein, Bitty) source insects from outside farms and labs, while two companies in this sector (BugEater Labs, Tiny Farms) manage the farming process internally. Although Eat Grub [had plans](#) to start its own farm, we do not have evidence of the company following through with those plans.



Market Sizing Considerations

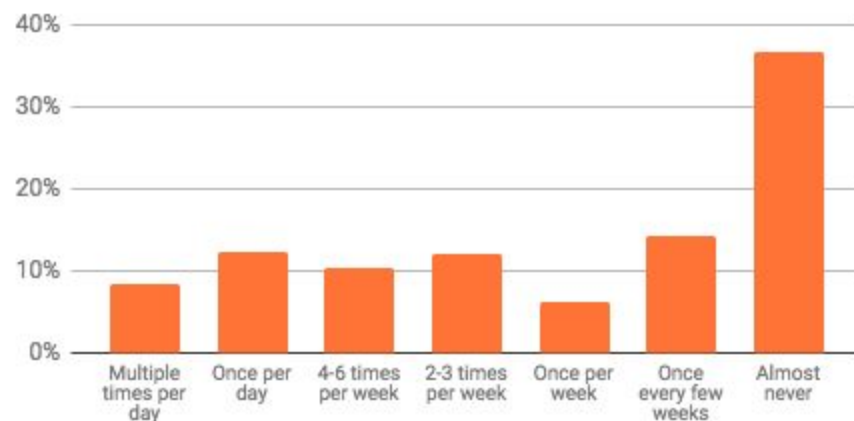
Market Size & Growth

	Statistic	Notes
Market Size	Portable Protein: \$55b Edible Insects: \$33m	Insect protein is commonly consumed by 2 billion people globally. Additionally, the size of the edible insects market was just over \$33m in 2015. However, one projection from 2016 estimated that by 2023, the market will exceed \$520m . Another projection from 2017 estimated that the market would be worth over \$1.5b by 2021. Portable protein more generally is a \$55b market across snack bars, protein powder, and protein ingredients.
Market Growth	65% CAGR	While we know the market for edible insects was \$33m in 2015, forward-looking projections vary widely. A \$520m market in 2023 would imply a ~41% CAGR, while a \$1.5b market in 2021 would imply a ~90% CAGR. To establish a market growth rate for this sector, we take the average of these two growth rates, which is ~65% year-over-year. <i>Calculation: (41.2% + 89.5%) / 2</i>
Total Addressable Market (TAM)	\$62b	As of August 2017, there were ~326 million people living in America. The total European population is ~739 million . Given that companies in this sector are based in the U.S. and Europe and focus on making insects more palatable and common in the Western world, we limit the market size to the U.S. and European customers (~1.1 billion people). Additionally, we focus on the 18+ age demographic, who we believe are most likely to regularly eat protein-heavy snacks. In the U.S., as of 2016, 77.2% of the population was 18 or older. Assuming that rate also applies to Europe, there are ~822 million Americans and Europeans aged 18 and older. Based on a Radicle survey , ~49% of people 18 and older eat protein-based snacks at least once per week. Those people were most likely to eat protein-based snacks once per day, followed by two to three times per week. Using a weighted average of responses, we determine that regular protein eaters consume ~2.9 protein-based snacks per week. We also know that the average price of a snack bar is \$2 . However, referencing Walmart's protein bar selection, the price-per-bar appears closer to \$1 , and per-unit costs of protein shakes can be even lower . We assume the average protein bar costs \$1, giving us a TAM for all protein-based snacks of ~\$62b. <i>Calculation: 822 million * 49% * 2.9 * \$1.50 * 52</i>
Serviceable Addressable Market (SAM)	\$94m	Radicle asked survey respondents to rank on a scale from zero to five how likely they would be to try insect protein (higher indicating more willingness). While most respondents responded with "zero" (not likely), ~46% responded with a one and above, indicating some openness to trying insect protein. However, only 3.1% of respondents surveyed indicated that they had tried insect protein in the past. Thus, we use this figure as a proxy for product adoption. We further assume that insect protein would only capture a small percentage of these people's overall protein-snacking habits (one snack every two weeks). Given that the average consumer eats ~2.9 protein-based snacks per week, then insect snacks would account for one snacking occasion out of every 5.8 protein snacks. Finally, companies in this sector rely heavily on online sales. The online penetration rate for packaged food groceries is 29% , which we also factor into our SAM calculation. <i>Calculation: TAM * 3.1% * (1 / 5.8) * 29%</i>
Projected SAM in 5 years	\$1.2b	<i>Calculation: SAM * (1 + CAGR)^5</i>

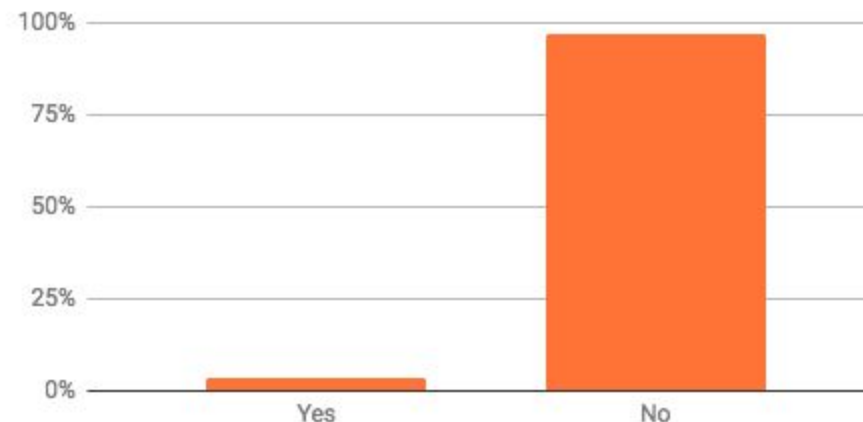
Customer Research

(n = 260)

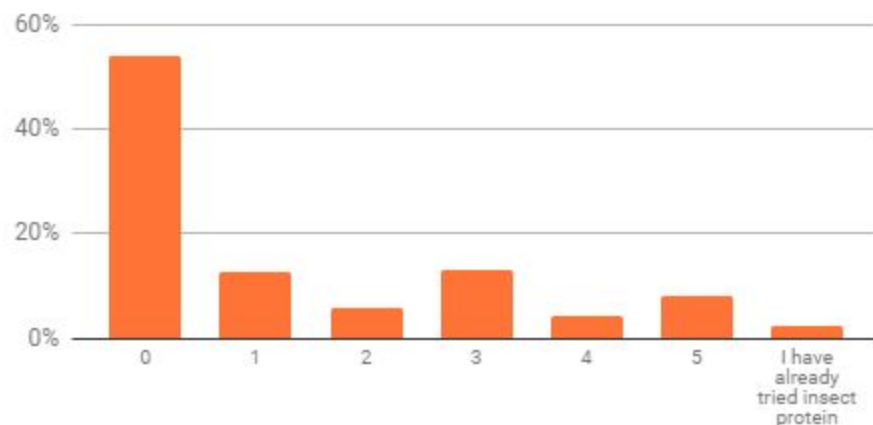
How frequently do you eat protein-based snacks (protein bars, protein shakes)?



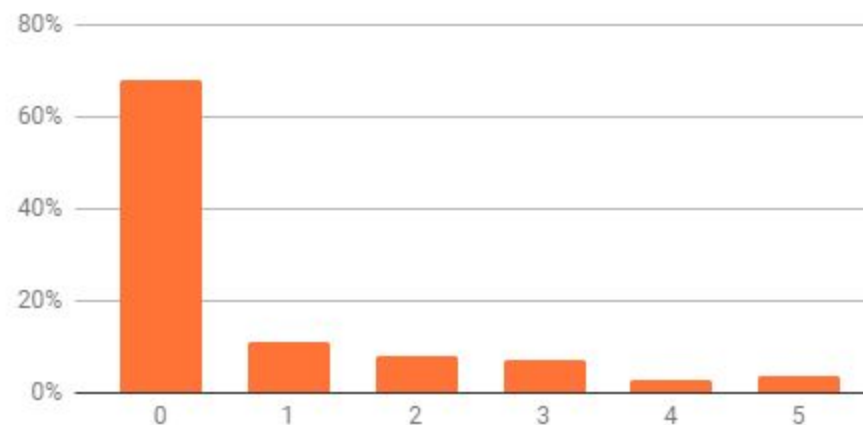
Have you ever tried insect protein before (e.g. a protein bar made from crickets)?



If you have not tried insect protein before, how likely would you be to try it (0 = least likely, 5 = most likely)?

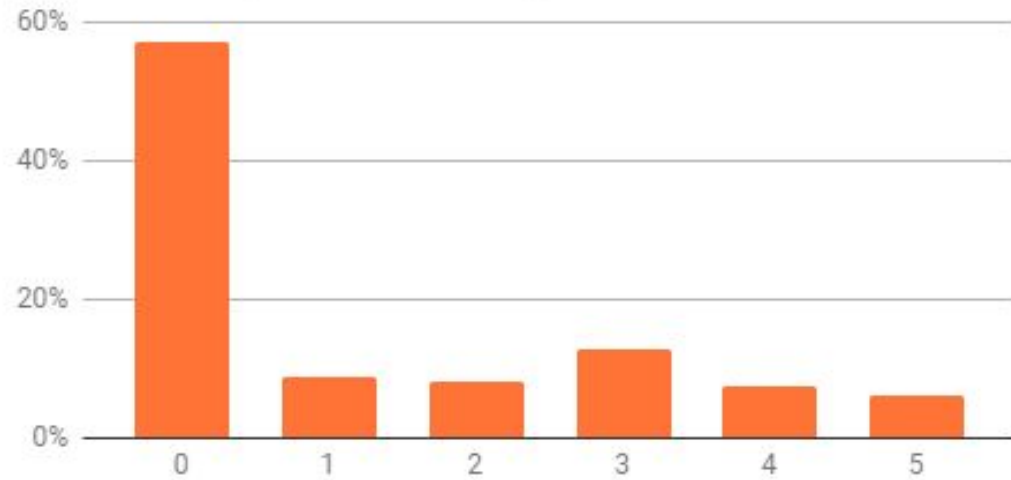


How comfortable are you with eating whole insects (0 = least comfortable, 5 = most comfortable)?



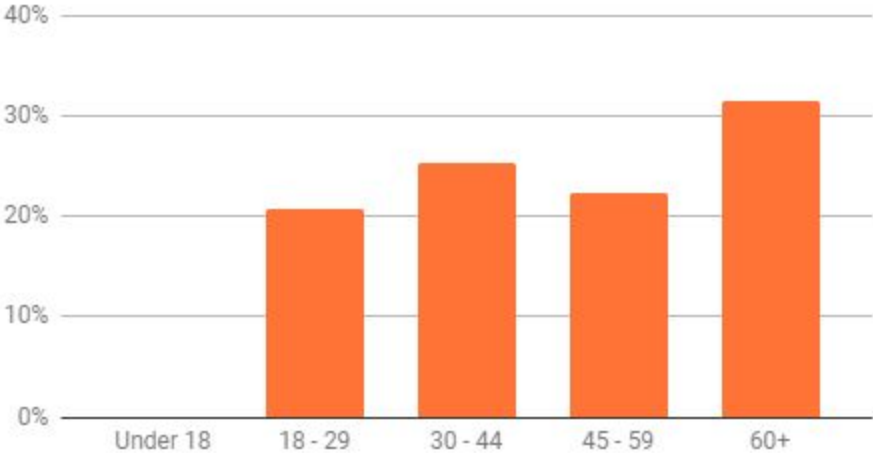
Customer Research (continued)

How comfortable are you with eating insect protein products? Note: you cannot see insects in these products, but they do contain insects as a main ingredient (0 = least comfortable, 5 = most comfortable)

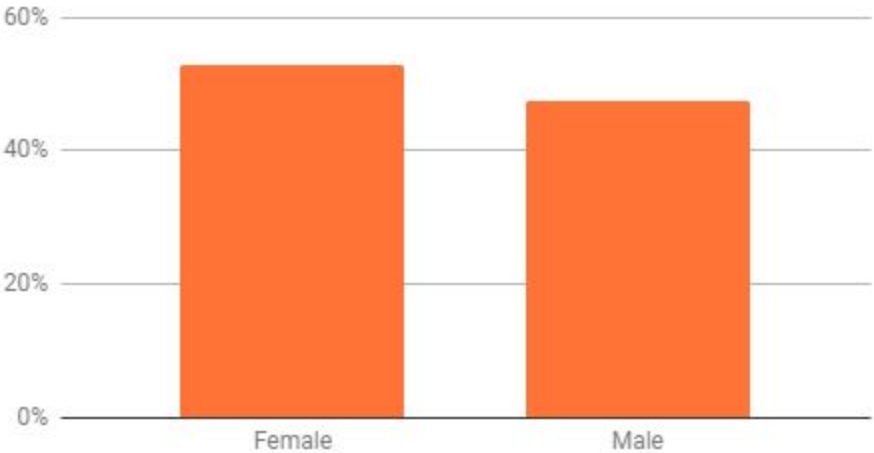


Respondent Demographics

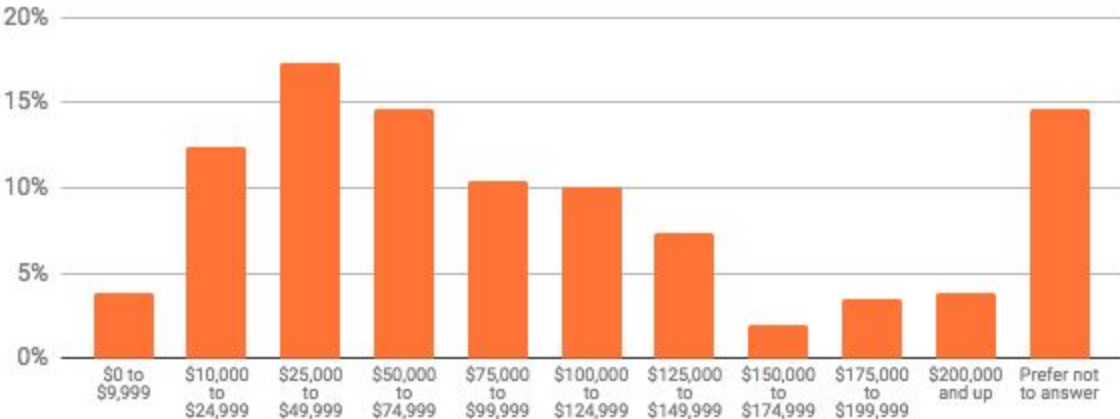
What is your age?



What is your gender?



How much total combined money did all members of your HOUSEHOLD earn last year?



Sector Potential & Valuation Perspectives

Relevant Exits, Public Comps, and Company Closings

Company acquisitions:

Acquirer	Target	Transaction Value	Transaction year	Implied Multiple	Notes
Dane Creek Capital	Midgard Insect Farm	N/A	2017	N/A	In 2017, Dane Creek Capital increased its stake in Midgard Insect Farm from 48% to 65%. Midgard is an insect producer focused on dog and cat food products.
Danone	WhiteWave Foods	\$10b	2016	2.6x 2015 revenue	Whitewave Foods owns several large food brands, including Silk , a plant-based beverage company. WhiteWave generated ~\$3.9b in revenue in 2015.
NuGo Nutrition	Promax	Undisclosed	2016	N/A	Promax makes high-protein sports bars.
Monde Nissin	Quorn	\$832m	2015	4.3x 2014 revenue	Quorn produces meat-substitute mycoprotein products and frozen meals with meat-substitutes. Quorn had \$195.7m (£150m) in sales in 2014.
WhiteWave	Vega	\$550m	2015	4.1x	Vega produces plant-based powder and bars. Vega had \$135m in revenues during the twelve-month trailing period before the acquisition.
Glanbee	thinkThin	\$217m	2015	2.6x	thinkThin is a leading protein bar company. The company generated \$84m in sales in the twelve months prior to October 2015.
Hillshire Brands	Van's Natural Foods	\$165m	2014	2.8x	Van's Natural Foods offers gluten-free and organic breakfast foods. The company was expected to generate \$60m in revenue in 2014.
Hormel	CytoSport	\$450m	2014	1.2x	CytoSport makes Muscle Milk, among other products. Hormel said that CytoSport's expected 2014 sales were around \$370m .
Neogen	Chem-Tech	Undisclosed	2014	N/A	Chem-Tech was a manufacturer of insecticides for the animal and food industries. The company generated over \$14m in revenue in 2013.

Public and private comps:

Type	Company	Enterprise Value / 2017E Revenue	Notes
Snack companies	Kraft Heinz (Ticker: KHC)	5.1x (2016 revenue)	Large food companies that own snack brands trade at ~2.5x - 5x revenue. Importantly, these companies also own brands not related to this sector, making
	Nestle (Ticker: NESN.VX)	3.2x (2016 revenue)	

	PepsiCo (Ticker: PEP)	3.0x	these comps imprecise. In cases where we could not find 2017 revenue projections, we use 2016 revenue, which also likely skews the range upwards.
	Glanbia (Ticker: GLB.L)	2.2x (2016 revenue)	
Health food brands	Danone (Ticker: BN.PA)	3.6x (2016 revenue)	Health food brands seem to trade around roughly the same range as general snack companies. Again, in cases where we could not find 2017 revenue projections, we use 2016 revenue.
	Hain Celestial (Ticker: HAIN)	1.8x	

Sector Valuation Potential

Can a company in this sector be a \$1b business? How about a \$100m business?

	\$1b	\$100m	Notes
Multiple range	1x - 4x	1x - 4x	<p>As a starting point, we look at the range of valuation multiples among our selected comps. On the low-end, CytoSport, which makes Muscle Milk, was acquired at 1.2x revenue. On the high-end, Kraft Heinz, which owns a variety of food brands, trades at 5.1x 2016 revenue.</p> <p>We limit the multiple range for this sector to 1x-4x for several reasons:</p> <ul style="list-style-type: none"> • Kraft Heinz's 5.1x revenue valuation is inflated because it is based on 2016 revenue, rather than forward-looking revenue. • Insect-based products are higher-risk than other, more established protein sources because they are newer and require substantial behavior change from Western consumers.
Implied target revenue for required valuation	\$250m - \$1b	\$25m - \$100m	<i>Calculation: Target valuation / Multiple range</i>
Serviceable Addressable Market (SAM)	\$94m	\$94m	<i>See 'Market Size & Growth' section.</i>
Share of SAM needed to achieve valuation	<i>Requires expansion of market</i>	27% - Not Achievable	<i>Calculation: Target revenue / SAM</i>
5-Year Serviceable Addressable Market (SAM)	\$1.2b	\$1.2b	<i>See 'Market Size & Growth' section.</i>
Share of SAM needed to achieve valuation	22% - 86%	2.2% - 8.6%	<i>Calculation: Target revenue / 5-Year SAM</i>

Indicative Revenue Multiple Analysis⁷

Indicative multiple range 1x - 4x

Midpoint multiple 2.5x

Sector constituents	+ Premium / - Discount	Multiple	Rationale
Exo Protein	+0.5x	3.0x	
Chapul	+0.5x	3.0x	These companies all offer subscription purchasing options, which results in more recurring revenue. This feature merits a 0.5x premium.
Chirps Chips	+0.5x	3.0x	
Bitty	—	2.5x	
Eat Grub	—	2.5x	These companies do not have features that merit a deviation from the midpoint multiple.
BSF Productions	—	2.5x	
BugEater Labs	-0.5x	2.0x	BugEater Labs and Tiny Farms both operate their own in-house farms or labs to grow insects used in their products. Although this enables these companies to control supply and potentially reduce costs, operating an in-house farming operation is also capital intensive and likely riskier than relying on a well-established insect farm. As a result, we ascribe a 0.5x discount to these companies.
Tiny Farms	-0.5x	2.0x	

⁷ Our multiple range and ensuing company-level analysis assume a future steady state for all companies in our sector. As a result, this multiple is based only on intrinsic company features, rather than near-term growth expectations.

SAM Penetration Analysis

Company	Current Traction Level	Required Revenue to Achieve Target Valuations (\$100m to \$1b)	Required 3-Year CAGR to Achieve Target Valuations (\$100m to \$1b)	Implied SAM Share Required to Achieve Target Valuations (\$100m and \$1b)
Exo Protein	<p>In 2015, Exo reportedly sold a 'few hundred thousand' bars and achieved 10% month-over-month growth. If we assume that Exo sold 200,000 bars in 2015, using a price of \$3/bar, the company would have generated \$600,000 in 2015.</p> <p>Additionally, a 10% month-over-month growth rate equals a 314% annual growth rate. As this rate, Exo would have generated ~\$2.5m in revenue in 2016.</p>	<p>\$33m - \$333m</p> <p><i>Assumed multiple: 3x</i></p>	138% - 412%	<p>Today: 35% - 355%</p> <p><i>Assumed SAM: \$94m</i></p> <p>In five years: 2.9% - 29%</p> <p><i>Assumed SAM: \$1.2b</i></p>
Chapul	<p>In February 2016, Chapul predicted that 3,000-4,000 stores would carry its protein bars by the end of 2016. According to SimilarWeb, Chapul receives less than 12,000 visitors to its site per month. As of August 2017, we do not have enough company information to estimate revenues.</p>	<p>\$33m - \$333m</p> <p><i>Assumed multiple: 3x</i></p>	N/A	<p>Today: 35% - 355%</p> <p><i>Assumed SAM: \$94m</i></p> <p>In five years: 2.9% - 29%</p> <p><i>Assumed SAM: \$1.2b</i></p>
Chirps Chips	<p>Chirps Chips' Kickstarter campaign raised over 100% more funds than the company's initial goal of \$30,000 from ~1,300 backers. This hints at an interest among consumers for its product. According Chirp Chips' Shark Tank pitch, the company is on track to generate \$200k in 2017 and plans to generate \$1.5m in 2018. For this analysis, we use the company's projected 2017 revenue figure of \$200k.</p>	<p>\$33m - \$333m</p> <p><i>Assumed multiple: 3x</i></p>	450% - 1,086%	<p>Today: 35% - 355%</p> <p><i>Assumed SAM: \$94m</i></p> <p>In five years: 2.9% - 29%</p> <p><i>Assumed SAM: \$1.2b</i></p>
Bitty	<p>Between the end 2016 and early 2017, Bitty dropped its cookie products to focus on chips. There were no explanations for this product drop, as the cookies appeared to generate interest. As of August 2017, we do not have enough company information to estimate revenues.</p>	<p>\$40m - \$400m</p> <p><i>Assumed multiple: 2.5x</i></p>	N/A	<p>Today: 43% - 426%</p> <p><i>Assumed SAM: \$94m</i></p> <p>In five years: 3.4% - 34%</p> <p><i>Assumed SAM: \$1.2b</i></p>
Eat Grub	<p>Eat Grub organizes pop-up events by partnering with reputable chefs. According to Owler, Eat Grub's annual revenue is less than \$1m. For this analysis, we assume Eat Grub generates \$1m in annual revenue.</p>	<p>\$40m - \$400m</p> <p><i>Assumed multiple: 2.5x</i></p>	242% - 637%	<p>Today: 43% - 426%</p> <p><i>Assumed SAM: \$94m</i></p> <p>In five years: 3.4% - 34%</p> <p><i>Assumed SAM: \$1.2b</i></p>
BSF Productions	<p>BSF Productions (Crowbar Protein) has been featured in Ripley's Believe It or Not. The company's product, Jungle Bars, is included in the 2017 edition of Ripley's <i>Wild &</i></p>	<p>\$40m - \$400m</p> <p><i>Assumed multiple: 2.5x</i></p>	N/A	<p>Today: 43% - 426%</p> <p><i>Assumed SAM: \$94m</i></p> <p>In five years: 3.4% - 34%</p>

	Wacky edition. Jungle Bars were featured on fancy.com in May 2016. As of August 2017, we do not have enough company information to estimate revenues.			<i>Assumed SAM: \$1.2b</i>
BugEater Labs	BugEater's website receives an average of 500 visits per month. Additionally, When the product was first released, BugEater had a hard time keeping up with demand . As of August 2017, we do not have enough company information to estimate revenues.	\$50m - \$500m <i>Assumed multiple: 2x</i>	N/A	Today: 53% - 532% <i>Assumed SAM: \$94m</i> In five years: 4.3% - 43% <i>Assumed SAM: \$1.2b</i>
Tiny Farms	Tiny Farms' website receives an average of 4,000 visitors per month. As of August 2017, we do not have enough company information to estimate revenues.	\$50m - \$500m <i>Assumed multiple: 2x</i>	N/A	Today: 53% - 532% <i>Assumed SAM: \$94m</i> In five years: 4.3% - 43% <i>Assumed SAM: \$1.2b</i>

Startup Profiles

Exo Protein Bars Essentials

Website	http://exoprotein.com/
Headquarters	Brooklyn, New York
Founders	Gregory Sewitz , Gabi Lewis
Founding Date	January 2014
Investors	Venture (undisclosed amount in Apr. 2016): Dentsu Ventures Series A (\$4m in Mar. 2016): AccelFoods (lead), Collaborative Fund , Dentsu Ventures , Wakestream Ventures , Nasir "Nas" Jones , Tim Ferriss Seed (\$1.2m in Sep. 2014): Timothy Ferriss (lead), Collaborative Fund , Hedgewood , Innovative Fund , Marc Bell Ventures , Wakestream Ventures

Snapshot

Exo Protein Bars (Exo) develops and sells protein snack products made from crickets. The company's first products are protein bars made from [milled cricket flours](#). Exo [sources](#) its crickets from domestic cricket farms where crickets are fed organic grain and drink filtered water. While initially focused on its protein bars, the company [plans](#) to develop and sell other cricket flour-based products such as protein powders.

One more thing to read:

<https://www.bloomberg.com/news/articles/2016-03-07/exo-cricket-protein-bars-closes-series-a-with-rapper-nas-top-chef>

A bit more info on the company

Product:

- Exo offers [five](#) flavors of bars that are sold in boxes of 12. The flavors are:
 - Cocoa Nut
 - PB&J
 - Blueberry Vanilla
 - Banana Bread
 - Apple Cinnamon
- All bars contain 270-300 calories, 10g of protein, 13-18g of sugar, 14-20g of fat, and 5-7g of fiber.
- Bars are also soy-, gluten-, dairy-, and grain-free.
- There are approximately [40 crickets](#) in each bar.
- A bars' shelf life is [eight months](#).

Business model:

Exo has three business model.

- The company sells its bars directly to consumers on its website.
 - Bars are sold in packs of 12, priced at \$36 each (\$3 per bar).
 - Exo also sells subscriptions for [\\$32](#) per pack, a \$4 discount for 12 bars.
- The company [sells](#) products on sites hosted by third-parties, such as FreshDirect and Amazon.
- The company [sells](#) products in physical stores, such as Wegmans supermarkets.

Customer:

Exo's customers are likely health conscious people and/or adventurous eaters.

- The company has targeted [CrossFit](#) enthusiasts and [paleo-diet](#) followers as potential customers.

Some facts from our recon

Traction:

- As of August 2017, Exo has not release updated information on its revenue or customer count.
 - In 2015, the company [reportedly](#) sold a ‘few hundred thousand’ bars and achieved 10% month-over-month growth.
- According to SimilarWeb, Exo receives less than [12,000](#) visitors to its site month.

The team

e = Entrepreneurial experience

d = Domain expertise

[Gregory Sewitz](#)

Co-founder

Background: [The College Hill Independent](#) (Science Editor), Moral Psychology Research Lab (Research Assistant)

[Gabi Lewis](#)

Co-founder

Background: [Bridgewater Associates](#) (Management Associate), [Capital Good Fund](#) (Strategy), [Deloitte UK](#) (Scholar)

[Kyle Connaughton](#) - d

Head of R&D

Background: [The Culinary Institute of America](#) (Curriculum Design Consultant), [The Fat Duck Experimental Kitchen](#) (Head Chef of Research & Development), [Michel Bras](#) (Chef Tournant)

[Jessica Tran](#) - d

Head of Communications

Background: [XRC Labs](#) (PR & Communications Advisor), [Astrsk](#) (Account Manager)

[Zac Goldberg](#) - d

Head of Ecommerce

Contact: info@rad.report

Background: [Betaspring](#) (mentor), [Groupon](#) (VP of Online Marketing), [The Point](#) (Online Marketing Manager)

[Kaitlin Holliday](#) - d

Chief of Staff

Background: [juice press](#) (Operations Manager), [Adelaide Club](#) (Fitness Coach)

Further reading:

<http://www.mensfitness.com/nutrition/what-to-eat/best-protein-bars-2016-ranked>

<https://www.wired.com/2016/03/investors-bet-millions-wont-balk-eating-bugs/>

<https://www.digitaltrends.com/cool-tech/future-of-food-could-insects-provide-protein-for-our-booming-population/>

<https://www.entrepreneur.com/article/244611>

<https://www.eater.com/2016/3/7/11171350/exo-cricket-bars-funding-investors-nas>

<http://fortune.com/2016/04/18/eating-bugs-insect-protein/>

<https://www.forbes.com/sites/nataliesportelli/2016/03/07/exo-protein-raises-4m-in-first-ever-series-a-for-an-insect-food-startup/#25098d4277bf>

<https://www.bloomberg.com/news/articles/2016-03-07/exo-cricket-protein-bars-closes-series-a-with-rapper-nas-top-chef>

<https://www.pri.org/stories/2015-08-26/next-big-thing-protein-will-likely-make-you-squirm>

Bitty Foods Essentials

Website	http://bittyfoods.com/
Headquarters	San Francisco, California
Founders	Megan Miller , Leslie Ziegler
Founding Date	2013
Investors	Seed (\$1.2m on an undisclosed date): KF20 Capital , Michael Staton , Arielle Zuckerberg , Morgan Chaney , Jonathan Wolter , Brian Haven

Snapshot

Bitty Foods develops and sells snack products made from crickets. The company's first products were cookies made from [milled cricket flours](#), before pivoting its focus to selling snack chips. Bitty Foods [sources](#) its crickets from North American cricket farms — where crickets are raised exclusively for human consumption.

One more thing to read:

<https://bthechange.com/edible-insect-startup-bitty-foods-hops-toward-the-mainstream-8ccf4f32d222>

A bit more info on the company

Product:

As of August 2017, Bitty Foods sells [two](#) products:

- Chiridos are 'air-puffed' protein chips. The chips come in three flavors:
 - Baja Ranchero
 - Spicy Molé
 - Salsa Verde

- All-Purpose Baking Flour is cricket powder infused flour that can be used to replace traditional flour for baking products.

Business model:

Bitty Foods has [three](#) business models:

- Wholesale cricket flours to bakeries and companies.
- [Selling](#) products in physical [stores](#).
- [Selling](#) products on sites hosted by third-parties such as Amazon.
 - Chiridos are sold in packs of :
 - Three 6 ounces for \$29.99.
 - 12 one ounce for \$25.99.
 - All-Purpose Baking Flour is sold for \$32.00.

Customer:

- Bitty Foods' customers are likely health conscious people and/or adventurous eaters and cooks.

Some facts from our recon

Traction:

- As of August 2017, Bitty Foods has not released information on its revenue or customer count.
- Between the end 2016 and early 2017, Bitty Foods dropped its cookie products to focus on chips. There were no explanations for this product drop, as the cookies [appeared](#) to generate interest.
- The company's Amazon product [page](#) lacks reviews, hinting at a potentially low interest in its product.

The team

e = Entrepreneurial experience

d = Domain expertise

[Megan Miller](#)

Co-founder & CEO

Background: [The Wirecutter](#) (HR Consultant), [Bonnier AB](#) (U.S. Director of Research & Development),

[Leslie Ziegler](#)

Co-founder

Background: [Rock Health](#) (Founder Team/ Chief Evangelist), [Altius Education](#) (Creative Director), [McCann Erickson](#) (Art Director)

[Hans Kunisch](#) - e, d

Acting COO

Background: [Savory Ventures](#) (Principal, Current), MidWest Specialty (Co-founder & Managing Director), [FoodLuxe](#) (Co-founder & Co-Director)

[Melissa Clark](#) - d

Baking Assistant, R&D

Background: [Edible Magazine](#) (Freelance Writer), [31st Union](#) (Line Cook)

Further reading:

<https://bthechange.com/edible-insect-startup-bitty-foods-hops-toward-the-mainstream-8ccf4f32d222>

<https://www.wired.co.uk/article/bitty-insect-bites>

<https://unreasonable.is/crickets-qa-with-bitty/>

<https://unreasonable.is/megan-miller-bitty/>

<http://www.popularmechanics.com/home/food-drink/a26083/eating-cricket-flour/>

Eat Grub Essentials

Website	http://www.eatgrub.co.uk/
Headquarters	London, England
Founder(s)	Neil Whippey, Shami Radia
Founding Date	July 2011
Investors	Angel (£250k in Nov 2016): QVentures

Snapshot

Eat Grub sources and sells edible insects to its customers. In addition, Eat Grub also hosts insect food events and develops new insect recipes. Eat Grub's worms and crickets are fed a combination of cereals and carrots, and its grasshoppers are fed grass and bran. Harvested insects are freeze-dried, unseasoned and ready to cook with, or can be eaten straight from the packet as an on-the-go snack. Eat Grub is [differentiated](#) by its curated selection of edible insects, which are reared specifically for human consumption.

One more thing to read

<http://www.telegraph.co.uk/foodanddrink/11100118/Are-edible-insects-the-future-of-food.html>

A bit more info on the company

Product:

- [Edible insects](#) include crickets, grasshoppers, Mealworms, and Buffalo worms. Packages come in 9g, 20g, or 45g. Available flavorings include chili & lime, salt & vinegar, or English herbs.
- Edible insect starter packs include one packet of each of grasshoppers, crickets, Buffalo worms, and Mealworms.

- [Eat Grub energy bars](#) are made from cricket powders. [Snacks](#) are roasted crickets prepared in three different flavorings.
- Customers can cook the insects using [recipes](#) provided by Eat Grub.

Business Model

Eat Grub develops its own products and operates under a direct-to-consumer model. It sells its products via its [online store](#).

- Snacks are sold at £3.49. Edible insects cost from £4.29 to £10.99.
- Shipping within the UK will be shipped either first class (from £1.57) or second class (from £1.36). Pricing is calculated by weight.
- International shipping is completed via Royal Mail International. Pricing starts from £3.72 and is calculated by weight. International deliveries takes at least 10 working days. International customers are [responsible](#) for their own purchases with respect to customs restriction and clearance.
- No returns are available, but customers can provide feedback for the edible insect deliveries.

Customer:

Customers of Eat Grub are individuals seeking to consume edible insects or snacks made from insects.

Some facts from our recon

Traction:

- According to SimilarWeb, Eat Grub received less than [12 thousand](#) visits.
- Eat Grub organizes [pop-up events](#) that partner with reputable chefs and has catered a few [events](#).
- According to [Owler](#), Eat Grub's annual revenue is less than \$1m.

The team

e = Entrepreneurial experience

d = Domain expertise

[Neil Whippey](#) - d

Co-Founder

Background: [Clear Cut Pictures](#) (Dubbing Mixer), [Splice Post Production](#) (Dubbing Mixer)

[Shami Radia](#) - d

Co-Founder

Background: [Farm Africa](#) (Head of Direct Marketing - Contract), [Greenpeace](#) (Development Manager - Contract), [CARE](#) (New Product Development Manager - Freelance), [WaterAid](#) (Sr. Direct Marketing Officer)

Further reading:

https://motherboard.vice.com/en_us/article/8q8qz4/how-eating-insects-empowers-women

<http://www.wired.co.uk/article/eating-insects-mealworms-grub-recipe-book>

<http://www.telegraph.co.uk/foodanddrink/11100118/Are-edible-insects-the-future-of-food.html>

<https://disrupts.com/eat-grub-dish-the-dirt-on-insects/>

<https://thenudge.com/london-things-to-do/eat-grub-2/>

<http://goodthingsmagazine.com/join-eat-grub-evening-edible-insects/>

BugEater Labs Essentials

Website	https://www.bugeaterfoods.com/
Headquarters	Lincoln, Nebraska
Founders	Alec Wiese , Kelly Sturek , Julianne Kopf
Founding Date	October, 2014
Investors	Grant (\$65k in unknown): Nebraska Department of Economic Development Grant (\$100k in Fall 2016): U.S. Department of Agriculture Seed (\$20k in May 2015): NMotion (lead), Invest Nebraska

Snapshot

BugEater Labs is a product development lab and company that makes cricket protein-based food products. Based in Nebraska, the company's goal is to get insects and their vast nutritional values into popular foods, while making them taste good. Along with its signature protein powder, the company is developing a new pasta product with crickets and hopes to secure more funding to cover manufacturing costs.

Startup accelerator [NMotion](#)'s investment came in exchange for some equity in the company.

One more thing to read:

http://www.omaha.com/money/lincoln-startup-developing-cricket-based-foods-works-to-overcome-the/article_e8a8fe31-32fa-58d9-901a-3576241f7e08.html

A bit more info on the company

Product:

Contact: info@rad.report

- BugEater's feature product, Jump, is a cricket-based protein shake.
- Coming in powder form, it is available in two flavors: [coffee](#) and [chocolate](#).
- Production has started on BugEater's cricket-based [pasta products](#).

Business model:

- Products are sold directly to customers via BugEater's website.
- Full packages of either flavor of Jump are priced at [\\$39.99](#), while a sampler package is available for [\\$19.99](#).
- BugEater secured other distribution methods through a [partnership with Bulu Box](#), a monthly vitamin and supplement sample subscription box, and through a [partnership with Hy-Vee supermarkets](#).

Customer:

- Target customers include a niche group of people who are interested in alternative forms of protein, by way of insects. These may be health-conscious people, or people who are looking to build muscle and bulk up.
- Other wholesale customers include retailers like grocery stores, or brands like Bulu Box that distribute BugEater's products.

Some facts from our recon

Traction:

- BugEater's website receives an average of [500 visits](#) a month.
- When the product was first released, BugEater had a hard time [keeping up with demand](#).
- As of August 2017, BugEater has not released revenue information.

The team

e = Entrepreneurial experience

d = Domain expertise

[Kelly Sturek](#) - e, d

Co-founder & CEO

Background: [NCEE Labs](#) (Business Development Intern), Computer Technical Services (PC/Printer Technician Internship)

[Julianne Kopf](#) - e, d

Co-founder & COO, Research and Development Manager

Background: [NuTek Food Science](#) (R&D Intern), [UNL Food Processing Center](#) (Lab Tech), [Nebraska Department of Education](#) (Site Coordinator for the Summer Food Service Program), [University of Nebraska-Lincoln](#) (Master's degree, Food Science and Technology)

[Alec Wiese](#) - e, d

Co-founder, Design

Background: [Vyril MA](#) (Project Manager), CBA Student Advisory Marketing Resource Team (Graphic Design), TechSpce (Senior Mobile Editor)

Further reading:

<http://www.thefencepost.com/news/nebraskas-bugeater-foods-makes-insect-based-food-products/>

http://www.omaha.com/money/lincoln-startup-developing-cricket-based-foods-works-to-overcome-the/article_e8a8fe31-32fa-58d9-901a-3576241f7e08.html

http://journalstar.com/lifestyles/food-and-cooking/lincoln-s-bugeater-gets-hopping-with-cricket-shake/article_f0560930-80bd-5752-a860-e99fd5bf0a1e.html

<https://www.facebook.com/BugeaterLabs/>

<https://angel.co/bugeater-labs>

<https://twitter.com/bugeaterfoods?lang=en>

Chirps Chips Essentials

Website	https://chirpschips.com/
Headquarters	Cambridge, Massachusetts
Founders	Rose Wang , Laura D'Asaro , Meryl Natow
Founding Date	2013
Investors	Venture (\$100k in Jan. 2017): Mark Cuban Convertible Note (\$25k in Mar. 2017): James Sowers Crowdfunding (\$70.5k in May 2014): Kickstarter

Snapshot

Chirps Chips develops and sells snack products made from crickets. The company's first products are chips made from [milled cricket flours](#). Chirps Chips [sources](#) its crickets from North American cricket farms — where crickets are organically fed.

One more thing to read:

<http://www.sva.edu/features/mark-cubans-new-snack-cricket-chips-lands-deal-on-shark-tank>

A bit more info on the company

Product:

As of August 2017, Chirps Chips offers three core products:

- Cricket Chips are made with a mix of stone-ground corn, beans, chia seeds, and cricket flour. The product comes in three flavors:
 - BBQ
 - Sea Salt
 - Cheddar

- Cricket Cookie Mix are baking mix to bake cricket cookies. The product has two variations:
 - Chocolate chips.
 - Gluten-free Chocolate chips.
- Protein Powders are cricket powder infused flour that can be used to replace traditional flour for baking products.
- Cricket Chips contain one cricket per chip and Cricket Cookies contain 15 crickets per cookie.
- Cricket Chips are Gluten-, Grain-, and Soy-, free.

Business model:

Chirps Chips has three business models:

- [Selling](#) products directly to consumers through its website.
 - Cricket Chips start at \$14.99 for 3-packs.
 - Cricket Cookie Mix start at \$7.99 for per bag.
 - Cricket Protein powder start at \$11.99 per bag.
- [Selling](#) products wholesale to retail stores.
- [Selling](#) products on third-party sizes like Amazon.

Customer:

Chirps Chips' customers are:

- Health conscious people.
- Adventurous eaters and cooks.

Some facts from our recon

Traction:

- According Chirp Chips' Shark Tank [Pitch](#), the company is on track to generating \$200k in 2017 and plans to generate \$1.5m in 2018.

- According to SimilarWeb, Chirps Chips has less than [12k](#) visitors to its site a month.
- Chirps Chips' Kickstarter [campaign](#) raised over 100% more funds than the company's initial goal of \$30,000 from ~1,300 backers. This hints at an interest amongst consumers for its product.

<http://nytlive.nytimes.com/womenintheworld/2015/06/08/women-led-startup-wants-to-make-crickets-your-new-favorite-snack/>
<https://www.kickstarter.com/projects/sixfoods/six-foods-introducing-chirps-cricket-chips/updates>
<http://www.business2community.com/entertainment/shark-tank-chirps-accepts-offer-mark-cuban-100000-01765992#FMLzjfdq3pEirY1F.97>
https://www.youtube.com/watch?v=VGFYm6_SCas

The team

e = Entrepreneurial experience

d = Domain expertise

[Rose Wang](#)

Co-founder & CEO

Background: [Microsoft](#) (Associate Product Management Intern), [Harvard Business School](#) (MBA)

[Laura D'Asaro](#)

Co-founder

Background: [Wema Children's Centre](#) (International Coordinator), [Sseko Designs](#) (Business Development)

[Meryl Natow](#) - d

Co-founder & Creative Director

Background: [Jopwell](#) (Product Designer, Current), [Amino Apps](#) (Senior Culture & Operations Strategist), [AKRE](#) (Designer)

Further reading:

<http://www.sva.edu/features/mark-cubans-new-snack-cricket-chips-lands-deal-on-shark-tank>

http://www.huffingtonpost.com/entry/delicious-cricket-corn-chips-pitched-on-shark-tank_us_588cc853e4b06364bb1e2626

<http://www.popsci.com/rise-incredible-edible-insect#page-2>

BSF Productions (Crowbar Protein) Essentials

Website	https://www.junglebar.co/
Headquarters	Reykjavík, Gullbringusysla, Iceland
Founder(s)	Stefán Thoroddsen , Bui Adalsteinsson , Frosti Gnarr
Founding Date	June 2014
Investors	Crowdfunding (\$28k in 2015): Individual investors Grant (kr10m in Mar 2015): Technology Development Fund Grant (kr7m in Mar 2014): Technology Development Fund

Snapshot

BSF Productions (Crowbar Protein) produces energy bars made from nutritious insects. Its energy bars, called [Jungle Bars](#), are offered in cranberry chocolate flavor. Crowbar Protein's product [differentiates](#) itself through the rich nutritional content offered. Each Jungle Bar is made from 75 crickets, ground into flour.

One more thing to read

<https://www.wired.com/2015/05/good-news-cricket-protein-bars-almost/>

A bit more info on the company

Product:

- Crowbar Protein's first product is the [Jungle Bar](#). In addition to cricket powder, it is free from dairy, soy, gluten and peanuts, and made entirely from non-GMO ingredients, including seeds, fruits, and chocolate. Each Jungle Bar [contains](#) about 200 calories and 8g of protein.

- Jungle Bars are [sold](#) in bundles of 12.

Business Model

Crowbar Protein develops its own products and operates under a direct-to-consumer model. It sells its products online.

- Crowbar Protein currently offers only one product, Jungle Bars. In August 2017, the product was [sold out](#).
- On Kickstarter, a box of six Jungle Bars was sold for [\\$25](#).

Customer:

Customers of Crowbar Protein are individuals seeking to consume energy bars made from insects.

Some facts from our recon

Traction:

- According to SimilarWeb, Crowbar Protein received less than [12 thousand](#) visits.
- Jungle Bars were [featured](#) on fancy.com in May 2016.
- Crowbar Protein is featured in Ripley's [Believe It or Not](#). Crowbar Protein's product, Jungle Bars, is included in the 2017 edition of Ripley's *Wild & Wacky* edition.
- Jungle Bars began shipping in August 2015, and Crowbar Protein [claimed](#) to ship 8500 Jungle Bars.

The team

e = Entrepreneurial experience

d = Domain expertise

[Bui Adalsteinsson](#) – e, d

Co-Founder

Background: [Matis ohf/Icelandic Food and Biotech Company](#) (Intern), [Norðurpóllinn](#) (Co-Founder), Production (Spark Design Space), Brynjar Sigurðarson (Intern)

[Frosti Gnarr](#) – e, d

Co-Founder

Background: [Islenska](#) (Art Director), [Iceland Academy of Arts](#) (Teacher), [Frosti Gnarr Studio](#) (Art Director / Owner)

[Stefan Thoroddsen](#) – e

Co-Founder

Background: None shown on LinkedIn

Further reading:

<https://www.youtube.com/watch?v=iSQEsg97H-A>

<http://www.newsweek.com/2016/02/05/those-incredible-edible-cricket-bars-419973.html>

<https://grapevine.is/mag/articles/2015/10/13/meet-two-icelanders-who-want-you-to-eat-a-bunch-of-cricket-bars/>

https://www.yahoo.com/beauty/the-rise-of-the-insect-bar-118955567772.html?soc_src=mail&soc_trk=mail

<https://www.wired.com/2015/05/good-news-cricket-protein-bars-almost/>

<http://icelandmag.visir.is/tags/jungle-bar>

<http://www.dailymail.co.uk/sciencetech/article-3033344/The-cereal-bar-creepy-crawlie-secret-Jungle-Bar-uses-flour-CRICKETS.html>

<https://www.kickstarter.com/projects/crowbarprotein/jungle-bar-the-insect-powered-protein-bar>

<https://www.dezeen.com/2015/04/09/jungle-bars-bui-bjarmar-adalsteinsson-powdered-cricket-protein-insects-food/>

<http://www.bbc.com/news/blogs-news-from-elsewhere-29033495>

Chapul Essentials

Website	https://chapul.com/
Headquarters	Salt Lake City, Utah
Founders	Patrick Crowley , Daniel O' Neill
Founding Date	2012
Investors	Seed (\$50k in Jul. 2012): Mark Cuban Seed (\$20k in Mar. 2012): Undisclosed Investor

Snapshot

Chapul develops and sells protein snack products made from crickets. The company's first products were protein bars made from [milled cricket flours](#). Chapul [sources](#) its crickets from cricket farms in California, where crickets are [fed](#) vegetarian diets.

One more thing to read:

<http://www.foodnavigator-usa.com/Manufacturers/Chapul-cricket-bars-should-be-in-3-4-000-stores-by-end-of-2016>

A bit more info on the company

Product:

Chapul sells [two](#) core products:

- Protein Bars come in four flavors:
 - Aztec: Dark Chocolate, Coffee & Cayenne.
 - Chaco: Peanut Butter & Chocolate.
 - Matcha Green Tea & Banana.
 - Thai: Coconut & Ginger with Lime.
- Protein Powder come in three flavors:

- Pure Cricket
- Vanilla
- Chocolate
- All bars are gluten-free, non-GMO, high protein, and all natural.
- There are approximately [20-30 crickets](#) in each bar.

Business model:

Chapul has three business models:

- The company [sells](#) its bars directly to consumers on its website.
 - Protein bars are sold in two sizes:
 - Sampler 4-pack (\$13.00).
 - 12 bars (\$36.00).
- The company [sells](#) products on sites hosted by third-parties, such as Amazon.
- The company [sells](#) products in physical stores.

Customer:

- Chapul's' customers are likely health conscious people and/or adventurous eaters.

Some facts from our recon

Traction:

- Chapul has not released updated information on its revenue or customer count.
 - According to [FOOD navigator-usa](#), Chapul predicted that 3,000-4,000 stores will carry its protein bars by the end of 2016.
- According to SimilarWeb, Chapul receives less than [12,000](#) visitors to its site a month.

<https://www.forbes.com/sites/katherinegustafson/2016/09/01/would-you-eat-crickets-some-grocery-stores-are-betting-on-it/#89c18e175929>
<https://www.kickstarter.com/projects/466721916/the-worlds-first-cricket-bar/faqs>

The team

e = Entrepreneurial experience

d = Domain expertise

[Patrick Crowley](#)

Co-founder & CEO

Background: [True Voice](#) (Public Speaker), [National Outdoor Leadership School](#) (Field Instructor)

[Daniel O' Neill](#)

Co-founder

Background: [Boston Consulting Group](#) (Employee), [Intuit](#) (Employee)

[Alexandra Vitale](#) - d

Director of Sales Operations

Background: [National Outdoor Leadership School](#) (Retail Store Manager)

[Drew Braithwaite](#) - d

Bug Ops

Background: [InsideSales.com](#) (Product Manager)

[Vanessa Rivera](#) - d

Social Media Assistant

Background: [Nordstorm](#) (Sales Associate), [Pinterest](#) (Pinterest Partner Solutions)

Further reading:

<http://www.foodnavigator-usa.com/Manufacturers/Chapul-cricket-bars-should-be-in-3-4-000-stores-by-end-of-2016>

<https://www.projectnosh.com/food-wire/2016/chapul-launches-cricket-high-protein-baking-flour-and-protein-powder/>

<https://bassamsalem.com/2016/02/08/entrepreneur-spotlight-pat-crowley-of-chapul/>

Tiny Farms Essentials

Website	http://www.tiny-farms.com/
Headquarters	Oakland, California
Founders	Andrew Brentano , Jena Brentano , Daniel Imrie-Situnayake
Founding Date	2012
Investors	Seed (undisclosed in Feb 2016): Arielle Zuckerberg , Investor's Circle , Drew Fink

Snapshot

Tiny Farms is an innovator in edible insect farming. The company grows and sells crickets for human consumption. Based in California, it uses data-driven design, automation, and IoT ([Internet-of-Things](#)) technology to build sustainable farms. Tiny Farms [aims](#) to make food-grade crickets widely available and affordable by licensing its insect farm technology.

One more thing to read:

<https://www.forbes.com/sites/robindschatz/2017/01/28/lessons-from-the-bug-factory-how-tiny-farms-is-redefining-the-cricket-business/#4b45b1291b4e>

A bit more info on the company

Product:

- Tiny Farms has [two food products](#) available: Cricket Powder and Chili Lime Fried Crickets.
- [Open Bug Farm](#) is an open source platform for insect rearing with a forum, wiki knowledge base, and plans for a DIY mealworm farm.

Business model:

- Tiny Farms' [revenue](#) primarily comes from selling crickets in large quantities to restaurants and makers of cricket "flour".
- Tiny Farms uses e-commerce to sell its cricket products to individual customers online.
- [Cricket Powder](#) is \$16 for a 8oz packet. [Chili Lime Fried Crickets](#) come in a 4 pack for \$12 or a 10 pack for \$27.
- [Open Bug Farm](#) is free to use and access.

Customer:

- [Target customers](#) are restaurants and makers of cricket flour, who need large quantities of farmed crickets.
- Individuals who are open to the idea of eating insects, or looking for alternative sources of protein are another customer base for Tiny Farms.

Some facts from our recon

Traction:

- Tiny Farms' website receives an average of [4k](#) visitors a month.
- There are around [40](#) U.S. companies manufacturing food with insects.
- As of August 2017, Tiny Farms has not released revenue information.

The team

e = Entrepreneurial experience

d = Domain expertise

Co-founder and former CEO [Daniel Imrie-Situnayake](#) brought technical experience to the founding team and currently works at [Google](#).

[Andrew Brentano](#) - e, d

Co-founder & CEO, former COO

Background: Artichoke Jalapeno Design (Owner, Designer, Developer), [Smart Action Company LLC](#) (Project Manager), [University of British Columbia](#) (Teaching Assistant)

[Jena Brentano](#) - e, d

Co-founder & COO

Background: Artichoke Jalapeno Design (Owner, Designer, Developer), Tanya Ragir Studio (Studio Manager)

[Adam Session](#) - d

Chief Scientist

Background: [Joint Genome Institute](#) (Researcher), [UC Berkeley](#) (PhD, Biochemistry and Molecular Biology)

Further reading:

<http://makezine.com/2017/05/25/edible-innovations-insects-smart-farm/>

<http://modernfarmer.com/2016/12/meet-modern-farmer-andrew-jena-brentano/>

<http://www.theepochtimes.com/n3/1999371-will-americans-ever-eat-insects-for-food-start-ups-say-yes-we-will/>

Appendix

Additional Companies

The following are all the companies that were surfaced in Radicle's NLP (natural language processing) search. The majority of these companies were excluded from the sector based on parameters outlined at the beginning of this report.

BSF productions	Ofbug
Gyminie's	Little Nourishments LLC
Chirps Chips	Wilder & Harrier
Bugsolutely	Eat Grub
BugEater Labs	YCERA Limited
Biteback Insect	Essento
ENTOFOOD	Global Consumer Products
Entocycle	Exo Protein Bars
LIVIN farms	Bitty
Aldento	Tiny Farms

Further Reading

- <https://www.wired.com/2016/03/investors-bet-millions-wont-balk-eating-bugs/>
- <https://www.pri.org/stories/2015-08-26/next-big-thing-protein-will-likely-make-you-squirm>
- http://www.huffingtonpost.com/2014/02/10/eating-bugs-food_n_4726371.html
- <https://qz.com/84127/five-reasons-we-should-all-be-eating-insects/>
- <https://www.cbinsights.com/research/food-replacement-startups-meat-dairy-gluten-market-map/>
- <https://www.cbinsights.com/research/11-cricket-insect-protein-startups/>
- <http://www.npr.org/sections/thesalt/2014/08/15/340653853/startups-pitch-cricket-flour-as-the-best-protein-you-could-eat>
- <http://fortune.com/2015/08/25/edible-insects-bug-startups/>
- <https://www.gminsights.com/industry-analysis/edible-insects-market>
- <http://www.prnewswire.com/news-releases/edible-insects-market-size-set-to-exceed-usd-520mn-by-2023-with-over-40-growth-from-2016-to-2023-global-market-insights-inc-585524411.html>
- <http://www.prnewswire.com/news-releases/global-edible-insects-market-to-reach-153-billion-in-2021---analysis-by-segments-types-of-insect--regions---research-and-markets-300411649.html>

Investor Cluster Score™ Definition

The Investor Cluster Score (ICS) is a measure of the signal produced by a startup's capitalization table. It is calculated by an algorithm that evaluates the relative selectivity of venture capital firms and their size, and applies a quantitative score to each unique capitalization table in our database. The ICS was designed to feed our Startup Anomaly Detection™ algorithm, which identifies startups that are currently displaying statistically significant signs of exit potential with 95% accuracy and 92% precision. As a result, the ICS was designed with the understanding that the majority of information available to investors is noise, and is therefore designed to extract objectively meaningful signal for a machine learning algorithm.

ICS scores are presented on a scale from 0 to 100, and interpretation is straightforward—bigger is better. As of August, 2017, the average ICS for all startups in our database is 5.2 with a standard deviation of 9.4. Slack has the highest score in history, and is therefore the benchmark by which all other startups are analyzed.

None of the startups in this sector have statistically differentiated capitalization tables.