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NORTH AMERICAN COALITION FOR INSECT AGRICULTURE

Report – Public Version: Enabling Consumer Adoption of Crickets

Prepared by hartman GROUP for ASPIRE

NACIA wishes to thank Founding Member Aspire Food Group for their generous support of this research report and for making it publicly available.

Learn more about Aspire's work: www.aspirefg.com

The full version of this report is available for NACIA members. Learn more about NACIA and membership: www.nacia.org

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Executive Summary:

Mainstreaming Crickets as Food

How do consumers balance practicalities and aspirations in their food journeys?

Consumers balance constraints of time, budget and household eating needs and desires with broader aspirations to 'eat well' — meaning a healthy natural diet centered on key nutrients and foods that reflect consumers' values beyond food.

What is the optimal positioning of cricket protein for mainstream reach?

Optimal positioning will center on the high-quality nutrition found in cricket products…

- Cricket as the fourth pillar of protein (comparing it to other protein sources to highlight its unique benefits, such as its high protein load)
- Cricket as a superfood with a variety of nutrients

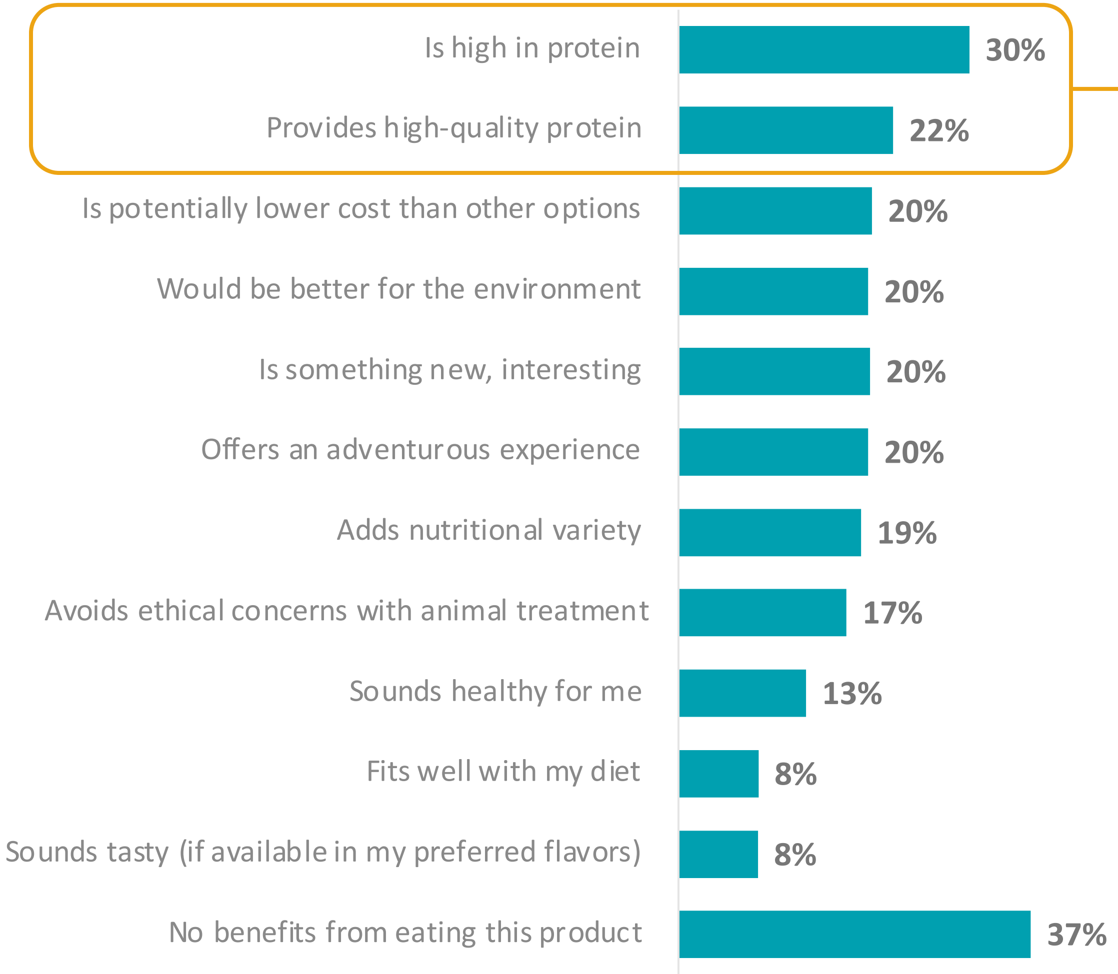
…with high quality cued by growing and production methods

A second-tier positioning can focus on sustainable claims, specifically in juxtaposition to other types of protein

POSITIONING

Protein (amount and quality) is the key benefit consumers see in crickets

Benefits of cricket food consumption



High protein content is the key benefit consumers recognize in cricket foods, along with the quality of the protein.

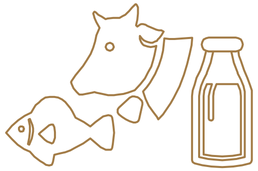
3 out of the 4 most compelling statements about crickets center on protein as well:

- crickets as “superfood” with high protein and other nutrients/vitamins (31% would be a lot more / somewhat more interested)
- high-quality, well-rounded source of protein (30%)
- dried cricket protein content 2-3 times that of common meats (29%)

In order to make the case for cricket, it needs to be compared to its competitive protein set

Consumers will want to understand (at a broad level), how cricket compares to other sources of protein.

Traditional protein source pillars

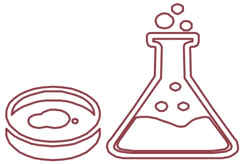


NUTRITIONALLY DENSE AND TASTY, BUT …

…not always healthy, sustainable or ethical

HEALTHIER AND ANIMAL/ECO-FRIENDLY, BUT …

…less protein-dense and less flavorful



ECO-FRIENDLY AND INNOVATIVE, BUT …

…potentially less healthy and less flavorful

New fourth protein source pillar

A LITTLE UNUSUAL, BUT …

…healthy, ethical, nutrient-packed, protein-dense, sustainable and flavorful

Cricket is part of the protein continuum but offers a unique bundle of benefits compared to other protein options

Who should be the initial target audiences for cricket food products?

Products with insect ingredients can best leverage consumers who already are already *engaged*: the one-fifth of adults who claim experience with cricket, who tend to be young males especially motivated to seek protein as a nutrient.

This segment will then help introduce cricket inclusion to a wider mainstream audience with more holistic goals and more mainstream preferences for natural quality. Almost half of adults are either initially engaged, receptive or persuadable.

Most American consumers are not “ready” for cricket, and near-term efforts should focus on those who already express exposure and engagement

CRICKET RECEPTIVITY AMONG AMERICAN ADULTS TODAY

Engaged 19%	Receptive 15%	Initial Rejectors 66%

Almost one-fifth of adults **claim to have tried cricket in the past** and **maintain interest** in further cricket experiences.

Within this group, there is little to distinguish frequent, recent users from those who may be more aspirational. With no larger secondary target waiting immediately in the wings, winning over this Engaged group to specific cricket-based solutions and brands is the best path to near-term success.

Demographics

Millennial Male: 37% (244)
Gen X Male: 22% (171)

Parent: 59% (196)
HH income > $150K: 27% (159)
Latinx: 17% (161)

Middle Atlantic: 21% (159)
Pacific: 21% (134)

First responder or military occupation: 6% (236)

Food Attitudes

Highly engaged in protein and in usage of protein alternatives.

Try range of intentional diets and eating approaches, including those requiring discipline; e.g., vegan, FODMAPS, elimination, paleo, ketogenic, dairy-free, etc.

More receptive than peers to scientific formulation and processed food solutions; include plant-based alt. meats but avoid processed meats.

Lifestyle / Behaviors

Physically active, with affinity for range of outdoors competitive and performative sports; e.g., mountain biking, skateboarding, rock climbing, boxing, rec leagues.

The future target extends to half of Americans, progressing towards those seeking a superfood with fresh, less processed distinctions

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CRICKET RECEPTIVITY AMONG AMERICAN ADULTS

NOW

Engaged	Receptive	Initial Rejectors
19%	15%	66%

INITIAL REJECTORS include: Reluctant | Disgusted | Unmotivated

Reluctant Rejectors (12% of Rejectors)
Interested in protein benefits but disgust gets in the way

Disgusted Rejectors (29% of Rejectors)
Especially averse, but also not very interested in benefits

Unmotivated Rejectors (59% of Rejectors)
Rejection driven by a lack of interest in perceived cricket benefits, not primarily by aversion

NEXT

5% from Reluctant, 3% from Disgusted, 6% from Unmotivated

Engaged	Receptive	Persuadable Rejectors	Persistent Rejectors
19%	15%	14%	52%

The future potential audience for cricket is double what it first appears to be

Aversion to the idea of eating insects is a barrier, but *persistent* rejection is driven primarily by a **simple lack of interest**. Many initial rejectors (especially among the reluctant rejectors) show heightened interest when benefits are communicated and reinforced, doubling the future target from 15% to almost 30% of all adults.

- Best single message: **Crickets are a “superfood”** (Note: Best for both Receptive and Persuadable!)

The Receptive and Persuadable targets represent a natural extension of the Engaged segment (still young, still mid-high income), but are more **skeptical of scientifically formulated**, more **receptive to fresh, less processed distinctions**, and **less disciplined/intentional** in their daily choices.

To extend cricket's reach beyond those already Engaged means addressing young females more concerned with holistic personal wellness and sustainability

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CRICKET RECEPTIVITY AMONG AMERICAN ADULTS TODAY

Engaged 19%	Receptive 15%	Persuadable Rejectors 14%	Persistent Rejectors 52%

NEXT = RECEPTIVE + PERSUADABLE

Approximately one-third of adults say they have never tried crickets but are either initially receptive to the idea OR become more interested after potential benefits are communicated more fully.

Compared to Engaged consumers, the next-phase target are less concerned with highly specific nutrition, more wary of processing and science-positioned foods, and more inward and holistic in their wellness objectives.

Demographics

Gen Z Male: 10% (144)
Gen Z Female: 8% (121)
Millennial Female: 17% (115)

Live alone: 24% (150)

E.N. Central: 16% (114)

Construction: 6% (124)
Medical: 6% (236)
Clerical: 5% (114)
General professional: 22% (114)

Food Attitudes

Seek protein as part of general interest in healthful eating, prefer dietary variety to ensure complete nutrition.

Like most Americans, prefer natural and inherently healthful ingredients, seeking fresh, less processed cues (e.g., purity in sourcing) to assure for quality in packaged foods.

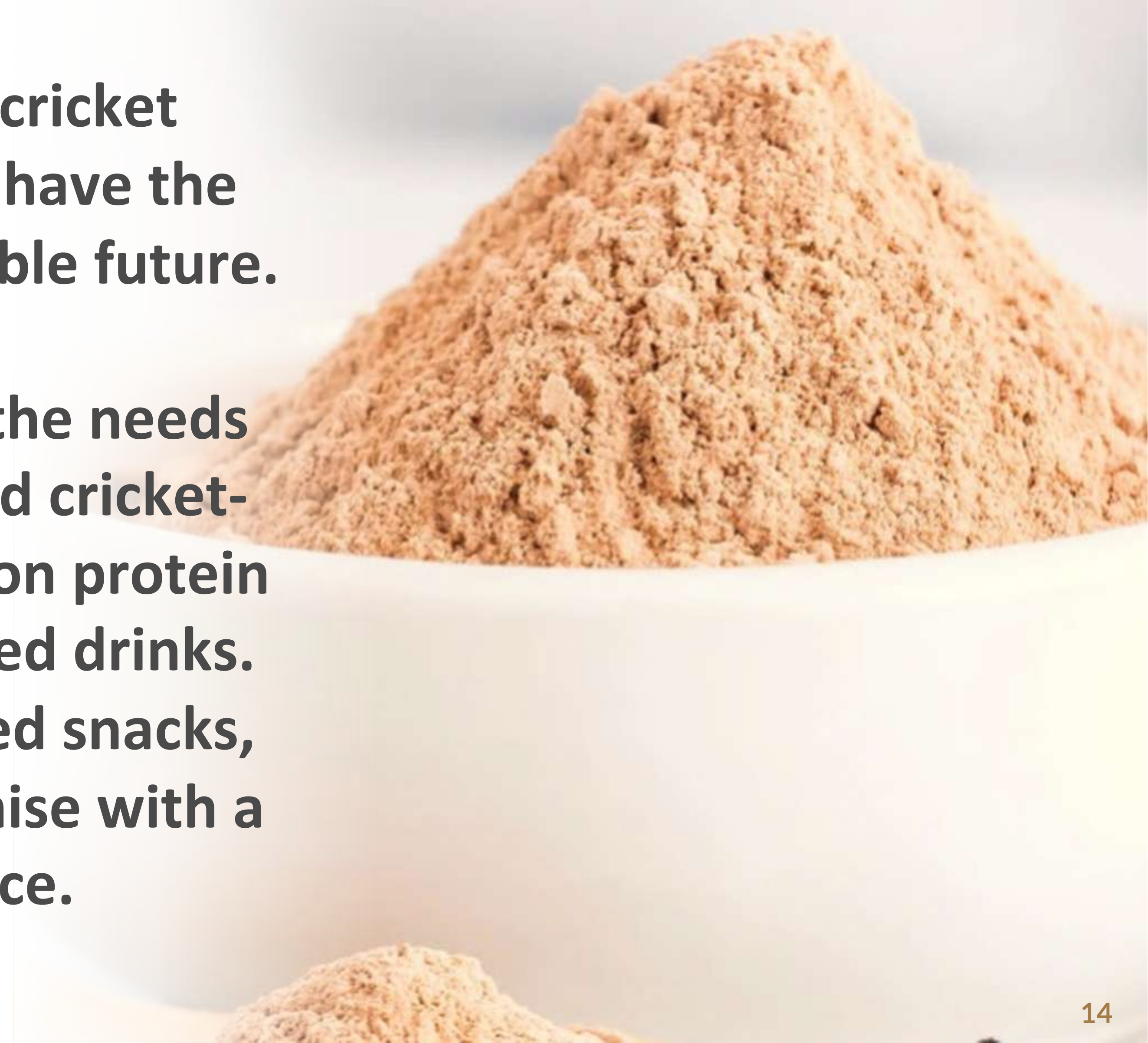
Lifestyle / Behaviors

Physically active, with affinity for sporting activities centered on personal achievement (running, swimming), low-key outdoors activities (e.g., camping, fishing), and other activities that support inner wellness (meditation, yoga, home-based fitness).

Culturally active (festivals, theatre, museums).

FORMATS

What product formats offer the optimal path to mainstream?



Formats that best “hide” the cricket (powder or powder-based) will have the broadest appeal for the foreseeable future.

Initial products should cater to the needs of the most protein-oriented and cricket-receptive audience with a focus on protein powders, flours, bars and selected drinks. For the future, protein-positioned snacks, beverages and mixes show promise with a more mainstream audience.

Category users of nutrition-positioned categories tend to be most receptive to versions that include cricket

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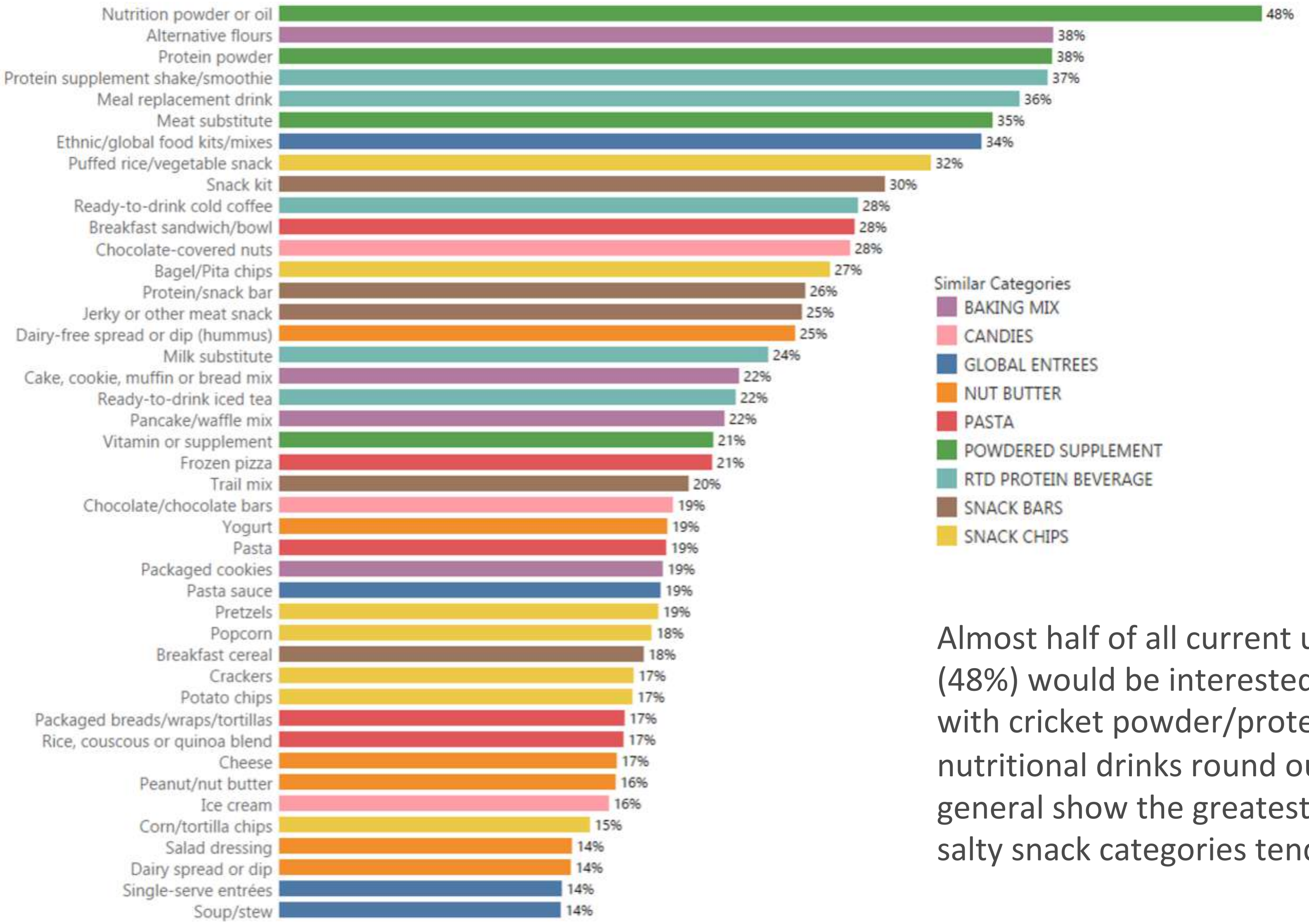
INTEREST IN CRICKET VERSION OF PRODUCT CATEGORY, AS % OF ALL CATEGORY USERS



Almost half of all current users of nutritional powder or oil (48%) would be interested in a version of these products made with cricket powder/protein. Similar powders, supplements or nutritional drinks round out the categories whose users in general show the greatest receptivity. Users of conventional salty snack categories tend to show less receptivity.

Growing the market for cricket will require a shift towards mainstream American food sensibilities, anchored in protein-centric products

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SUMMARY OF RECOMMENDED PATH FOR CRICKET

NOW	NEXT
POSITIONING Exceptional protein+ nutrient profile for optimal performance Cricket = Superfood	**POSITIONING** Nutrient density and protein variety for optimal well being Cricket = Superfood, 4th pillar of protein, sustainably sourced
PEOPLE Young, high-income physically active men seeking best protein alternatives, aligned with scientifically formulated solutions	**PEOPLE** Young single adults seeking nutrient density and protein diversity to support holistic wellness, aligned with fresh quality cues and narratives
PRODUCTS Protein-centric powders, bars, drinks, plus emerging snacks Alternative flours Puffed snack Protein/snack bar Protein shake/smoothie Nutrition powder or oil Protein powder	**PRODUCTS** Extend into the most promising adjacencies Alternative flours Puffed snack Protein/snack bar Protein shake/smoothie Nutrition powder or oil Protein powder + Meat substitute Ready-to-drink cold coffee Jerky or other meat snack Milk substitute Cake, cookie, muffin or bread mix Ready-to-drink iced tea Pancake/waffle mix Vitamin or supplement Trail mix

How big is the total addressable market for crickets?

In the near term, the recommended consumers and categories offer $2.3 billion of annual revenues for insect as food companies to source from.

Extending to receptive and persuadable consumers and a broader set of foods expands the TAM to $11.6 billion to source from.

Counting all interest expressed across 43 food categories, the TAM to source from could be as large as $49.7 billion.

What to highlight on packaging?

Ingredients should include high protein, high fiber, omega-3, B12 and iron callouts as well as "low in" claims (sugar, sodium, carbs and fat). For key desired nutrients, clear and easy comparisons should be drawn to other common protein sources.

Sustainability narratives are a compelling, but secondary, on-pack callout.

What is the appetite for flavors for an "exotic" food?

Both traditional and more unique flavors find resonance and could be offered side by side within a single product line.

Familiar flavors will help mitigate apprehension around cricket as an ingredient and more exotic flavors can help compel more adventuresome taste seekers.

Which channels should be pursued and where should cricket products be merchandized within the store?

Offering crickets in channels where consumers already shop for groceries (grocery, organic/natural, supercenter, club) and in the aisles where they already buy analogous products will best ensure broad exposure and help normalize the idea of crickets. Additionally, online and direct-to-consumer represent a key opportunity, especially given the current climate.

Private label partnerships could further enhance credibility and grow reach.

Which occasions provide the greatest opportunity?

Consumers will look to cricket products to fill the same roles in their eating routines that analogous existing products currently have.

Therefore, each cricket product should target occasions when its particularly strength is most needed: e.g., protein-focused products should target breakfast and post-exercise snacks, portable products should target on-the-go occasions, etc.

The following sections are available for NACIA members in the full version of the report.

Quantitative Survey Findings in Detail

FOOD CULTURE LANDSCAPE:

VALUES, HABITS, GOALS

Quantitative Survey Findings in Detail

OVERALL ENGAGEMENT WITH AND PERCEPTIONS OF CRICKET FOODS

Quantitative Survey Findings in Detail

LOOKING ACROSS OPPORTUNITIES:

FORMATS, PRODUCT ATTRIBUTES, INGREDIENT CONTENT, FLAVORS

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The North American Coalition for Insect Agriculture (NACIA) is the insects for food and feed industry association in North America. Insects are an untapped natural resource with the potential to change our agricultural systems to be safer and more sustainable. NACIA's mission is to encourage positive use of farmed insects in North America and beyond.

Anchored by Founding Member companies, Aspire Food Group, Beta Hatch, EnviroFlight, InnovaFeed, and Ynsect, NACIA members are currently 200 strong, based in 12 countries, 50 companies, and 23 universities.

NACIA members include insect producers, product makers in food, animal feed, pet food and soil health, as well as technology and service providers for agriculture and food. Researcher and university student members are examining how to improve the insect agriculture industry through scientific inquiry.

NACIA is currently working to improve the regulatory environment in North America, connect our members with industry stakeholders, and the knowledge they need to grow. We also work to inform key stakeholders about the potential for insects to provide environmentally sustainable, highly nutritious ingredients that can be produced as part of circular and regenerative agriculture.

Learn more: www.nacia.org