

Insects as Food: Market Potential

**Short course & Workshop on Insects and Food
and Feed**

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Outline

1. Industry reports
2. Edible insect market segmentation
3. Current market estimations
4. Future market projections
5. Major/significant edible insect companies
6. Conclusions

Industry Reports - Estimations of Market Size

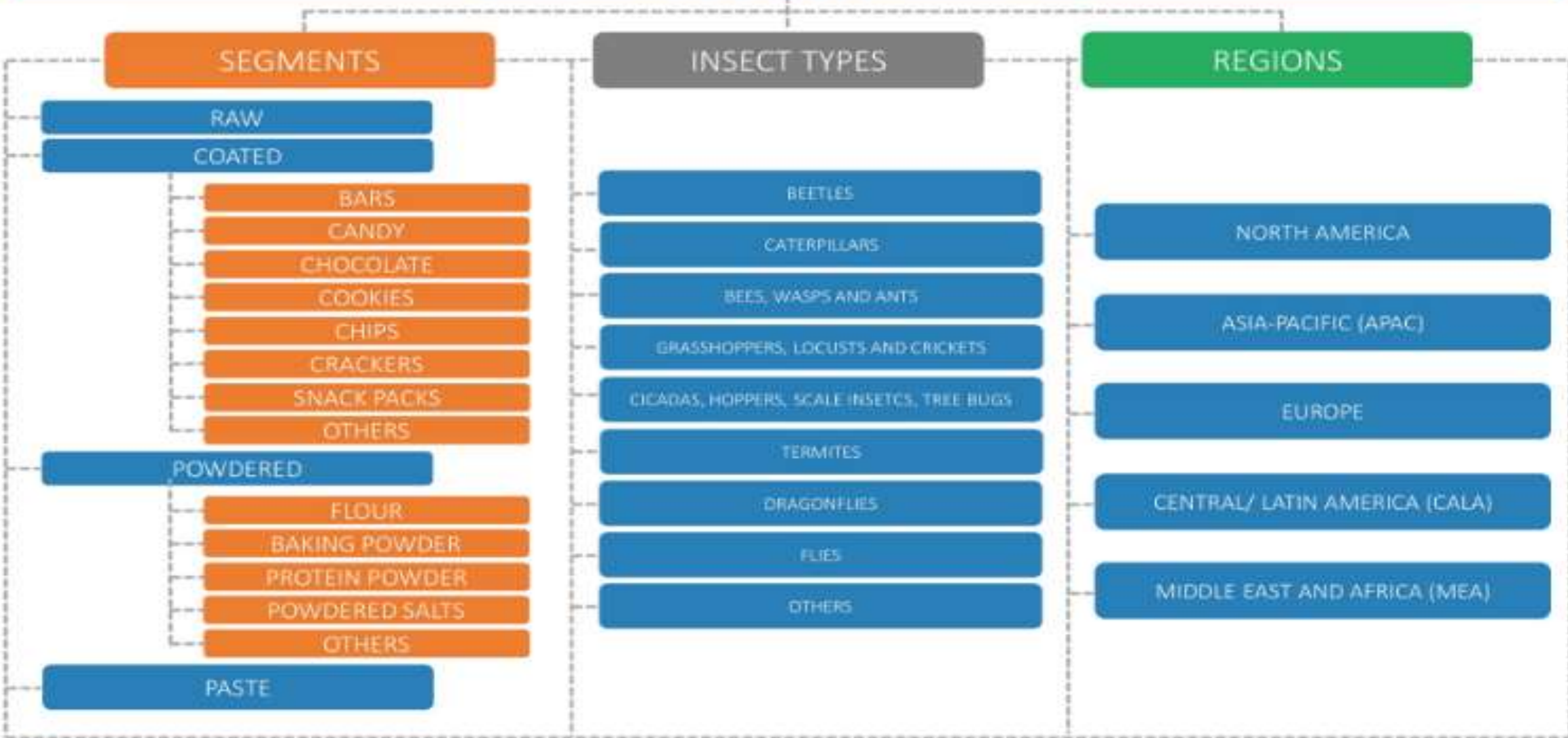
- ▶ Mid-2016: publication of edible insect industry reports by 4 market research companies (Singapore/US):
 - ▶ Estimation of current market size (2015-16) by region/countries, insect species, insect applications (products) & overview of major/significant edible insect companies
 - ▶ Projections of market size & Compounded Annual Growth Rate (CAGR) over the mid-term: 2015/16 - 2021 - 2023 - 2024
 - ▶ Fragmented information available: price for reports USD5,000-11,000
 - ▶ Similarities in estimation of current market size & trends, but different projections of future growth & market value



Market Segmentation

Source: ARCLUSTER Research, 2016

EDIBLE INSECTS MARKET SEGMENTATION



Current global market: By Regions

Overall global market estimations:

- ▶ 2016: USD 106 million

By Regions:

- ▶ Main global market player: Asia - leading countries Thailand, China & Vietnam
- ▶ Asia Pacific: >USD 12 million
 - ▶ Drivers: insect farming, low raw material cost & transportation cost
- ▶ Europe: leading countries UK, Belgium, France & Netherlands
- ▶ Latin America: Brazil & Mexico largest markets - insects used as traditional food & for medicinal purposes
- ▶ Middle East & Africa: no data

Current global market: By Insect Species

Beetles:

- ▶ Global: Main species - revenue USD10 mill. (2015) - 31% market share (2016)
- ▶ In Asia Pacific: largest market share with 34% (2015)
- ▶ In North America: Caterpillars & Beetles >45% market share (2015)
- ▶ In Europe: 30% market share (2015)
- ▶ In Middle East & Africa: 36% market share (2015)

Caterpillars:

- ▶ Global: 18% market share
- ▶ In North America: Caterpillars & Beetles >45% market share (2015)

Current global market: By Application/Product

Whole insects:

- ▶ Most commonly traded & commercially consumed - 65% global market share (2015) **(mass volume/tons???)**

Coated & Powdered:

- ▶ Insect-based powder & energy bars >54% of global market share (2015) **(revenue???)**
- ▶ Insect powder: >40% of market share in Central/Latin America

Global market projections

- ▶ Significant accelerated growth of global edible insect market expected
- ▶ Insect production expected to increase particularly in U.S., UK, China & Brazil
- ▶ Different projections

- ▶ 2021: USD 1.5 billion - 70% CAGR from 2015
- ▶ 2023: >USD 522 million - 42% CGAR from 2016
- ▶ 2024: USD 723 million - 6% CGAR from 2016

Growth projections by region

Asia Pacific:

- ▶ Dominate global market - 5% CGAR (2024)

North America:

- ▶ Significant growth
- ▶ led by U.S.: >USD 50 mill. (2023)
- ▶ Drivers: strong consumer awareness levels & acceptance

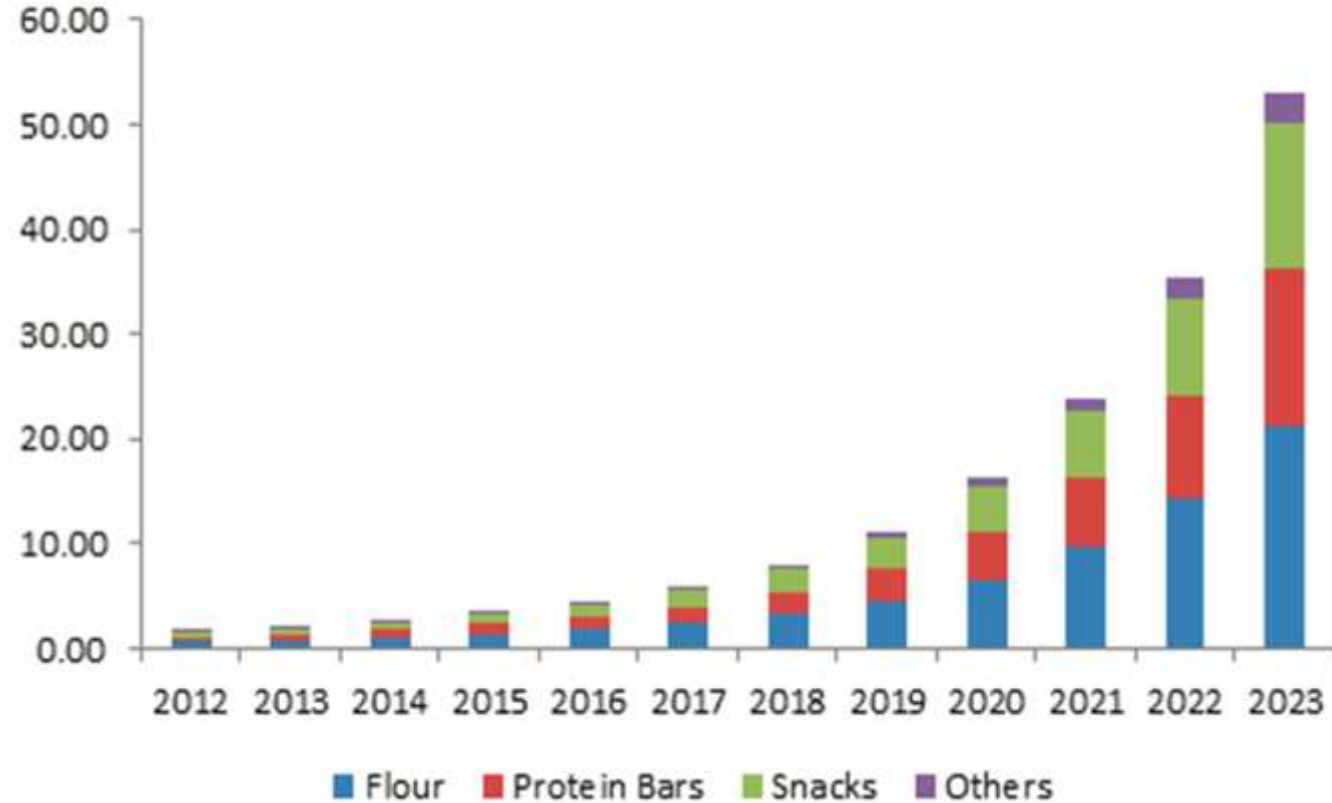
Europe:

- ▶ Fastest growing market - >USD 46 mill. (2023)

Central/Latin America:

- ▶ >USD 55 mill. (2023)

U.S. Edible Insects Market size, by application, 2012-2023 (USD Million)



Source: Global Market Insights, 2016

Growth projections by Insect Species

Beetles:

- ▶ Slight decrease in market share: from 31% to 29% in 2024

Grasshoppers, locusts, crickets:

- ▶ Significant growth
- ▶ Drivers: demand for cricket bars, crackers & cookies

Growth Projections by Applications/Products

Coated & Powdered:

- ▶ Major trend: protein bars & shakes
- ▶ Coated products: highest growth by 85% (2021)
- ▶ 30-times growth of revenues from packaged, processed & powdered (2015-21)

Market competition

▶ Assessed as fairly competitive

▶ Major players:

▶ HaoCheng Mealworm Inc (China):

<http://www.hcmealworm.com/about.php>

▶ Kreca (Netherlands): <http://www.krecafood.com>

▶ Other significant players:

▶ Proti-Farm (Netherlands) <http://protifarm.com>

▶ Chapul Inc. (U.S.) <http://www.chapul.com>

▶ Eat Grub (UK) <http://www.eatgrub.co.uk>

▶ Bitty Foods (U.S.) <https://bittyfoods.com>

▶ Micronutris (France) <http://www.micronutris.com/en/home>

▶ Edible Inc. (Korea) <https://edible-bug.co>

▶ Thailand Unique (Thailand) <http://www.thailandunique.com>



Conclusions

- ▶ Global edible insect market reached already significant scale & accelerated growth in mid-term expected
- ▶ Major regions so far Asia Pacific, but significant growth in Europe, North America & Latin America expected
- ▶ Whole insects currently dominate market, but trend of further processing into powder & coated
- ▶ Beetles currently main species, but significant increase of crickets in market share expected

Key Challenges:

- ▶ Consumer acceptance: psychological aversion in combination with religious and cultural believes
- ▶ Regulatory environment

Information on Market Research Companies

- ▶ ARCLUSTER: Innovation design and market consulting company; Singapore. <https://arcluster.com/about-us/>
- ▶ Credence Research: Worldwide market research and counselling firm; United States. <http://www.credenceresearch.com/info/about-us>
- ▶ Global Market Insights Inc.: Global market research and management consulting company; United States. <https://www.gminsights.com/about-us>
- ▶ Persistence Market Research: Third-platform research firm; United States/Singapore. <http://www.persistencemarketresearch.com/market-research/edible-insects-market.asp>



Thank you for your attention!
Any Questions?

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Literature:

- ▶ Arcluster Research. 2016. Syndicated study: Edible Insects Market (2016-2021). Website. <https://arcluster.com/research/edible-insects-market/>
- ▶ Credence Research. 2016. Edible Insects Market: Growth, Future Prospects & Competitive Analysis, 2016 - 2023. Website. <http://www.credenceresearch.com/report/edible-insects-market>
- ▶ Global Market Insights. 2016. “Edible Insects Market Size By Product (Beetles, Caterpillars, Grasshoppers, Bees, Wasps, Ants, Scale Insects & True Bugs), By Application (Flour, Protein Bars, Snacks), Industry Analysis Report, Regional Outlook (U.S., Belgium, Netherlands, UK, France, China, Thailand, Vietnam, Brazil, Mexico), Application Potential, Price Trends, Competitive Market Share & Forecast, 2016 - 2023”. Website. <https://www.gminsights.com/industry-analysis/edible-insects-market>
- ▶ Persistence Market Research. 2016. Global Market Study on Edible Insects: Owing To Increasing Cost of Animal Protein and Increasing Consumption of Sustainable Food to Drive Market Growth By 2024. Website. <http://www.persistencemarketresearch.com/market-research/edible-insects-market.asp>