

## ARTICLE REVIEW

### Opportunities and Hurdles of Edible Insects for Food and Feed

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Have you ever suggested an insect cuisine to a friend? One can picture the face of apprehension and disgust he or she would give you. Many people cannot see themselves ordering a "buggy" burger, but as the years come and go, it seems more and more likely that these creepy crawlies might save the planet (Payne, 2018). Reading this article; Opportunities and Hurdles of Edible Insects for Food and Feed written by D. Dobermann, J. A. Swift and L. M. Field (2017) and published in the Nutrition Bulletin by John Wiley & Sons Ltd. on behalf of the British Nutrition Foundation, gives us many reasons to invest our time, money and interests in the entomophagy (consumption of insects) business.

To call readers' attention to 'insects as food', Dobermann and his colleagues effectively used a descriptive research

design, mainly focusing on other peoples' published work for the collection of data and information about entomophagy. Through the previous research they used e.g. Barsics et al (2017), Bukkens (1997), and EFSA (2015), among others, the three authors analyzed the opportunities and hurdles that arise from using insects as food or animal feed. In the article, they presented a clear analytical comparison between insects and other sources of protein, like livestock, giving their in-depth opinion as to why they prefer the edible insects. They also analyzed the market, suggesting strategies on how the business could be expanded worldwide by recommending further research in the field in terms of rearing, production, storage, and regulations. The authors did thorough research on the subject to come up with a solid article, calling attention to

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the consumption of insects as food for humans and why this is necessary.

To further convince readers, the authors cited one of the 17 United Nations Sustainable Development Goals: zero hunger, and environmental considerations.

To achieve the goal of zero hunger (UN, 2015), the United Nations called for greater awareness of the increasing human population and its link to the increasing threat of food scarcity for humanity. Through this article, it is noted that by adopting entomophagy, hunger problems can be resolved. Research done in 2017 by WHO shows that many people especially children and the elderly suffer from malnutrition. According to the data they provided in table 1, it is quite evident that edible insects give more nutritional benefits than other protein sources, such as livestock and plants.

Thirdly, another convincing point they brought to the table refers to environmental considerations. Global climate change is becoming a norm with increased toxic greenhouse gas emissions. People are clearing forests to find more space for settling without considering the aftermath. Insects are not only environmentally friendly, they come with a whole bag of prizes. For example, bees provide honey used for human consumption, and at the same time, help in pollination. Did you know they can also make a tasty stew once cooked? Inventing and innovating ways of curbing the climate change problem is like expanding the insect industry; among other environmental projects it can fill the gap that is already there.

The authors also presented their concerns for entrepreneurs who might be interested in creating insect related businesses, as to whether it will be accepted in the market or not. Investors may have doubts regarding the potential success of such businesses and are less likely to put their money into insect businesses as they are unsure about the demand. With the population increasing to an expected 9 billion people by 2050, it is evident that the food industry will never run dry (FAO, 2014). This means that the edible insects market will certainly grow due to the high demand for food. The number of people consuming insects has rampantly risen worldwide, with Thailand and most of Africa leading the demand. Insect farmers also earn a stable income due to the higher market value of insects (PMR, 2019).

The article provides vast, useful information for all stakeholders especially, investors, entrepreneurs, and researchers interested in the food industry.

During the process of writing this article review, the reviewer had an in-depth interview with a senior industry expert who has been in the edible insect consumption market for years. He mentioned several factors contributing to the slow market growth, such as the idea that eating insects is perceived as part of a “lower societal class” diet, the rearing and production processes are unsanitary, entomophobia, and a lack of awareness of the benefits for sustainability and as a super food, though people do now have higher needs regarding health and wellness. He also suggested that in order

to grow the consumer market, major retailers should work with producers to promote the industry together with the government, research centers, and media, to educate consumers and buyers. Better and more innovative product developments (e.g. tastes, varieties of foods products) and marketing activities (e.g. packaging) are also needed. These points are in line with the major concerns of the authors, previously mentioned, specifically, whether insects will be accepted in the market, and that investors are still too unsure to put their money in this business. Thus further research is highly recommended by the author as well as by Dobermann, Swift, and Field in the article.

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