Chapter

Introductory Chapter: Is the Insect Food Boom over or when it Will Start?

Heimo Mikkola

1. Introduction

As an introductory chapter for this "Edible Insects" book, I have collected a number of newspaper articles from Finland (Finnish names of the articles translated in English) on the insect food business development between 2016 and 2019. These papers show at first enormous boom of the insect food production and sales for human consumption after that business was finally legalized in September 2017. However, already in late 2018, many insect farmers and market people expressed their concerns that the business development has not been as lucrative as anticipated. Year 2019 brought more not so positive evaluations of insect food markets in Finland but concluding that the insect food boom will come one day, latest with the next generation of people.

2. First illegal food due to European Union regulations

Insect food marketing was at first illegal in Finland although some production existed. Enthusiastic farmers and researchers started, however, in 2016 to organize insect food tasting events in some restaurants and schools around the country. One restaurant in Helsinki (Restaurant Rupla, Helsinginkatu 16) had a three course insect menu one evening every two month (21.07, 21.09 etc.). None of the participants refused to eat the insect food [1]. Actually many people had to queue to get to taste the insect food.

In February 2017, newspapers wrote that many start-up companies in Otaniemi university campus believe that insect food business could bring millions income to the participants [2]. A bit later it was written that people in North Karelia are well prepared to start insect food production and that 70% of the Finnish population is ready to taste insect food products [3].

Finally in September 2017, Finland adapted the EU regulations so that it was acceptable to start selling insect food as human food products. This sales permit allows selling insect products made out of the following insects:

Black soldier fly larvae	*Hermetia illucens*
Cricket	*Acheta domesticus*
Desert locust	*Schistocerca gregaria*
Drone bee larvae	*Apis mellifera*
Lesser mealworm (= chicken hog larva)	*Alphitobius diaperinus*
Migratory locust	*Locusta migratoria*

1Tropical domestic cricket	*Gryllodes sigillatus*
Yellow mealworm	*Tenebrio molitor*

Several farmers modified their farms by giving up the pig farming and starting to grow insects, instead. Some tens of restaurants started to offer insect food on their menu. Many new insect products were introduced to the market when the sale of insect food became legal. Some producers stated that "We will start slowly, learning the markets and markets getting to know us." When asked about the taste, people stated: "Taste is mild, something between chicken and shrimps. Best crickets are when well fried" [4].

Leader Foods Oy, for instance, started to sell cricket protein bars. One Zircca bar contains 15 crickets and 34% protein and it is gluten free product. The company says that cricket bars meet all nutrition requirements equally well as any meat or fish products. And the iron content of crickets is higher than that in spinach [5].

On June 11, 2018, Oy Halva Ab brought to the markets cricket liquorice bars first time in Finland and in the world [6].

One of the most amazing problems in cricket farms in Finland have been extremely warm and dry summer weathers we have had recent years. Even the tropical species stopped eating due to the heath or rather due to the dry air. In the tropics, weather is always humid even in high temperatures. So the farmers were forced to invest in expensive air humidifiers [7]. Second major problem many commercial insect farmers faced when starting large scale production was the lack of commercial feed for the insects [8]. In 2018, the Natural Resources Institute Finland and Eastern Finland University started a project to produce plant-based pelleted feed for the insect farmers. This 'Hyvä Rehu' (=Good Feed) project lasts 2 years, and is funded by the Ministry of Agriculture of Finland.

At the end of 2018, newspapers started to write negative news from the farmers who had invested money to make millions with the insect food [9]. In Loviisa town, there was a huge insect farm that aimed to be the largest in Europe but had to be closed down in 2019 as not profitable enough [7]. After the boom started in 2017, the sales have gone down and supermarkets have started to diminish the selection of insect food products. Some insect food producers say that marketing of insects was better when they were sold illegally as human food. The products were often labeled and sold as kitchen and food decoration items [10].

Large part of the population still finds the insect food too exotic, but the producers and sale people hope that the next generation would be a real insect-eating generation.

Similarly large supermarket chains, S-group & K-markets, will keep the insect food available hoping that the sales will eventually pick up. When that will happen is still unknown [10].

One of the largest insect food companies in Finland is Finsect which also exports the insect products under the name "Griidy". They have 26 contract farmers mainly in Western Finland. They are producing cricket bread, cricket chocolate, cricket liquorice, roasted and seasoned crickets and cricket meal 150–450 E/kg for the consumers depending on the package size [11]. This high consumer price may partly explain the insect food marketing problems in Finland.

Additional papers collected but not cited

Kurki E. Pests in flour bags soon legal food table items. Karjalainen. 2016

Rouvinen M. Many Finns would like to buy insect food already now. Karjalainen. 2017

Savolainen S. Would you like to eat crickets? Apu. 2017

Merimaa J. Food security from insects. Helsingin Sanomat. 2017

Lehtinen T. Now insects will be made into food products. Helsingin Sanomat. 2017

Salminen J. Crickets feel in mouth like the Finnish Rye Crispbread. Helsingin Sanomat. 2017

Nieminen K. Insects can now be sold as food products. Karjalainen. 2017

Massinen T. Crickets for hunger: Insects scurrying to the plate/insect food boom is only starting. Karjalainen. 2019

Author details

Heimo Mikkola
University of Eastern Finland, Finland

*Address all correspondence to: heimomikkola@yahoo.co.uk

References

[1] Tarvonen H-M. Insects creeping to the plates. Helsingin Sanomat. 2016;**30**:06

[2] Moilanen K. Cricket beef to the food table. Helsingin Sanomat. 2017;**04**:02

[3] Kurki E. Ackwardness is only a vision error: North Karelia is ready to start production of insect food. Karjalainen. 2017;**16**:02

[4] Kojo H. Insect food: Crickets are already chirping. Karjalainen. 2017;**17**:08

[5] Leader Foods Oy. Crickets conquerred the protein bars. Apu 6/2017

[6] Oy Halva Ab. Available at: https://www.halva.fi [Accessed 17/09/2019]

[7] Liiten M. Growing insects for food ended before starting. Helsingin Sanomat. 2019;**30**:01

[8] Koistinen A. Luke (=natural resources institute Finland) and university (= eastern Finland university) developing feed for the insects. Karjalainen. 2018;**10**:01

[9] Latvala J. Time was not ripe for the insect food, yet. Karjalainen. 2018;**23**:12

[10] Tapio K. Large part of the population finds that insect food products are yet too exotic. Karjalainen. 2018;**23**:12

[11] Finsect. Antti Reen. Helsingin Sanomat. 2019