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From yuck to yum: unlocking the potential of edible insects

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From yuck to yum: unlocking the potential of edible insects



Edible insects being sold in a market. Copyright nippich somsaard/Shutterstock ©

Summary

This Policy Spotlight explores the context for expanding the edible insect industry both within the EU and in a post-Brexit UK where EU regulations on selling insects for human consumption no longer apply.

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Key Points

- Edible insects have featured across Asian, African and South American diets for centuries but were seen as a novelty food in Western Countries until recently.
- Demand has been rising rapidly in the EU and UK because insects offer a more sustainable source of high protein food when compared to eating meat.
- The European Commission approved whole insects and their ingredients under [Regulation \(EU\) No 2015/2283 on novel foods](#), which came into force in 1 January 2018, requiring that insect food products must obtain specific authorisations before they are sold on the EU market. However, the process of authorisations is still developing.
- After Brexit, edible insects as food come under the authorisation of the Food Standards Agency (FSA) and are currently not regulated nor approved for sale in the UK (excluding Northern Ireland). This also applies in Scotland as no insects have been authorised for food consumption by [Food Standards Scotland](#) (FSS).
- For the insect sector in the UK to survive, the FSA and the FSS need to urgently introduce a “new Great Britain-specific transitional measure”.

Overview

More than two billion people in around 140 countries are reported to consume insects as part of their regular diet, particularly in countries in Asia, Africa and South America¹. In many Western countries, however, the practice of eating insects – known as entomophagy – is still often considered a novelty. It is often linked to ‘extreme’ eating challenges as seen on TV rather than the dietary and environmental benefits they can offer.

Due to a variety of factors, particularly environmental, the demand for edible insects has been rising rapidly in the EU and UK over the past few years. This has created opportunities for both insect exporters and the insect industry in the UK. However the introduction of new and developing EU regulations related to edible insect products has led to unclear procedures for food business operators and exporters. This has been particularly impactful following the UK’s exit from the EU because it means there are currently no regulations for the edible insect (for human consumption) industry and it is therefore illegal to sell insects for human consumption in the UK.



Egg cartons being used for cricket farming in Thailand. Copyright SRUC©

¹ Hanboonsong et al., 2013; Marberg et al., 2017



"More than 2 billion people in around 140 countries are reported to consume insects as part of their regular diet, particularly in countries in Asia, Africa and South America"

Examples of cricket-based snacks from Thailand. Copyright SRUC©

The benefits of eating insects

Since 2013, [the Food and Agriculture Organisation of the United Nations \(FAO\)](#) has recognised the benefits of eating insects as an alternative protein source. [Eat Grub](#) (2021), an edible insect company, highlights that crickets can contain up to 69g of protein per 100g, compared to 19.4g from beef per 100g². They also contain some essential amino acids, fats and minerals like iron and calcium.

Eating insects can be a more sustainable source of high protein food when compared to eating meat given that their production creates significantly less greenhouse gases and requires less land and water to farm². [Eat Grub](#) (2021) reports that the average greenhouse gas emissions to produce 1kg of protein from insects is only 1g compared to 300g and 2,850g from chicken and cattle respectively. Also, rearing insects requires only 15 m² of cultivated land to produce 1kg of protein compared to 45 m² for chicken and 200 m² for cattle.

The EU market for insect-based products is booming

Interest in insect-based products has been booming in the last few years due to the environmental, economic and food security benefits they could offer⁴. With the potential benefits of eating insects becoming more apparent, current consumption trends and changes in attitudes around food are increasing the number of consumers willing to eat insects in the EU. The rise in consumption is driven by the diversity in products on the market, increased availability of products in retail outlets and changing consumers' acceptance. [The International Platform of Insects for Food and Feed \(IPIFF\)](#)

² Although the sale of edible insects is currently illegal in the UK, it is still possible to buy insect products online from UK-based companies like [Eat Grub](#), 2021.

³ van Huis et al., 2013; Tiwasing et al., 2021

⁴ Tiwasing et al., 2021; Mancini et al., 2022

(2020) reports that around nine million Europeans consumed insects and their derived products in 2019. This figure is expected to increase to 390 million consumers within the next 10 years⁵. Based on this report, the edible insect market has projected growth of almost 50% between 2019 and 2026, with the fastest rate in the EU market.

The growing demand for high protein food for sports nutrition, food supplements and protein power also has the potential to create more opportunities for the insect sector⁶ especially in northern European countries such as the UK, Germany, Belgium, the Netherlands, France, Finland, and Denmark⁷. In 2019, European insect food business operatives accounted for approximately 500 tonnes of insect-based products (including whole insects, insect ingredients and products incorporated with edible insects) that were placed on the EU market. This is expected to increase to 260,000 tonnes by 2030⁸.

The 'Novel Food Regulation' and the EU market

Due to a growing interest for edible insects in the EU market, [the European Commission](#) (EC) approved whole insects and their ingredients under [Regulation \(EU\) No 2015/2283 on novel foods](#), defining these as "food that had not been consumed to a significant degree by humans in the EU before 15 May 1997"⁹. The 'Novel Food Regulation' came into force on 1 January 2018 and the results of which now mean that insect food products must obtain specific authorisations before they are sold on the EU market.

An assessment of novel food applications by the European Commission and the [European Food Safety Authority](#) (EFSA) is currently underway but the process to export is both complicated and expensive with many validation and assessment steps required throughout the authorisation process. The uncertainty and difficulties caused by this have resulted in businesses stalling new products and waiting to see what happens when other businesses try the system.

Current legal status of edible insects in the UK

In the UK, post Brexit, edible insects as food come under the authorisation of the [Food Standards Agency](#) (FSA). In 2018, the FSA brought in a transitional measure under Regulation (EU) No 2015/2283 to allow those businesses who had requested authorisation for insects under the 'Novel Food Regulation' by 1 January 2019 the opportunity to continue to trade their products on the market while the scientific assessment was ongoing¹⁰. However, the FSA ended this transitional measure in the UK (except Northern Ireland) from 2 January 2020, making edible insects illegal in Great Britain¹¹. This decision also impacts Scotland as no insects have been authorised for food consumption by [Food Standards Scotland](#) (FSS) during the same period¹⁰.

⁵ Marrison, 2022

⁶ Mancini et al., 2022

⁷ Pippinato et al., 2020

⁸ International Platform of Insects for Food and Feed, 2020

⁹ Lähteenmäki-Uutela and Grmelova, 2016

¹⁰ Food Standards Scotland, 2021

¹¹ Horizon Insects, 2021



Image from Wikimedia Commons.

What's next for edible insects in the UK?

On 13 July 2022, the Food Standards Agency (FSA) with the input of Food Standards Scotland (FSS) called for “a consultation on transitional arrangements for edible insects in Great Britain” from industry, enforcement authorities, consumers and other key stakeholders with an interest in the policy and legislation on edible insects. This transitional arrangement proposals would allow edible insects to remain on sale if they were marketed in the EU or the UK before 1 January 2018 and were the subject of an application to the EU for authorisation as a novel food by 1 January 2019. However, applications for authorisation of these insects must be submitted to the FSA or FSS by 31 December 2023 for the insect product to remain on the market while the application is being reviewed.

Although there are no regulated product applications for edible insects yet, the FSA has received enquiries for edible insects and other proteins. They have now recognised the benefits of these alternative proteins to improve nutritional health, the environment, and the UK economy. But they are still clearly concerned about the food's safety for human consumption. Therefore, they are funding research into risks and have emphasised that evidence is needed to support applications. This strategy seems to be a good sign for the future of edible insects in the UK. But the question on how long the processes will take to be officially approved remains.

Policy recommendations

- For the insect sector in the UK to survive, the FSA and the FSS will need to urgently introduce a “new Great Britain-specific transitional measure”.
- More significantly, to expedite this action, scientific evidence related to food safety and hygienic standards on edible insects is a must¹².
- The cost of gathering the relevant scientific evidence is expensive – estimated to be around £80K per insect species¹¹. But with no action, the future of UK insect market and of many food business operatives, whose livelihood relies on this, remains uncertain.

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¹² Woven Network, 2021

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