Edible insects on the European market

01 | Insect farming is a growing industry in Europe

According to the FAO, insects are part of the diet of more than two billion people around the world. Currently, edible insects represent a niche market in western societies. However, insect farming is a growing industry in Europe as our dietary habits are rapidly changing and the willingness of consumers to try insect-based food is increasing. This trend is supported by positive media coverage and greater availability of insect products. Their nutritional benefits and lower environmental footprint further boost the trend (e.g. flexitarians, organic food consumers or those following a paleo diet are generally paying more attention to sustainable food sourcing and/or to the health effects of what they eat). This change in attitudes around food creates new opportunities for the edible insect sector.

The growing demand for high protein food for sports nutrition, dietetic food or food supplements creates further opportunities. Currently, the use of insect-derived ingredients in such specialised products is a niche, but it is forecasted to develop rapidly in the next few years. Furthermore, the development of the insects as food market in Europe would be driven by accessibility, consumer acceptance and sociocultural evolution (Source: IPIFF Vision paper).

A regulated market for insects as food

In the context of the growing interest for edible insects on the European market, certain national policy attention and prompt regulatory response was generated. In the European Union (EU) whole insects and their ingredients are included under the Regulation (EU) No 2015/2224 on novel foods (or the ‘new’ novel food regulation). The Regulation came into force on 1st January 2018 and requires pre-market authorisations before commercialising these products across the EU market. Assessment of novel food applications is currently underway (European Commission and European Food Safety Authority – EFSA) and the first applications on the EU market are expected by the end of 2020 or early 2021. However, with products already on the market in several EU Member States, the transitional measure provided under this regulation grants an extension for the first application of novel food applications is currently underway (European Commission and European Food Safety Authority – EFSA) and the first applications on the EU market are expected by the end of 2020 or early 2021. However, with products already on the market in several EU Member States, the transitional measure provided under this regulation grants an extension for the placement on the market of edible insects and their preparations in the countries where such products were legally commercialised on a ‘national market’ before 1st January 2018.

02 | Key economic figures

Market share - insect Food Business Operators’ (iFBOs) product types

The growing demand for high protein food for sports nutrition, dietetic food or food supplements creates further opportunities for the insect sector. Insects are highly versatile and can be incorporated in foods directly as whole insects boiled, fried or in dried form, whole insects processed into a granular powder or paste to increase nutritional value or functionality. To this end, insect-derived ingredients, such as protein powder and extracts could be added to foodstuff. Presently, the highest market share is represented by whole insects (close to a 1/4 of the products on the market), followed by bars, snacks, specialty food ingredients and pasta (see the categories above). By 2025, specialty food ingredients will cover close to a 1/5th of the market, with snacks and bars remaining on the 2nd and 3rd place in terms of market share. Thanks to a high growth rate (2020 vs 2025), meat-like products and functional food will rank 4th and 5th in terms of market share in 2025. Despite representing a small share of the present market, it is anticipated that paleo (8%), functional food (7%), baked products (5%) and meat-like products (4%) will have the highest growth rate. This rapid growth will also increase the market share of these four categories combined – reaching more than a third by 2025 (from circa 17% in 2020). The forecast of a potential shift in product representation by 2025 is driven by consumer acceptance, change in sociocultural aspects (i.e. increasing demand for meat analogues) and product demand. The novel food authorisations should also play a constructive role in shaping the market, facilitating access to insect-based products in areas where the demand for functional food, pasta or meat analogues is generally high.

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In 2019, the European iFBOs accounted for about 500 tonnes of insect-based products (whole insects, insect ingredients and products incorporated with edible insects) placed on the European market. The market for edible insect-based food products is projected to grow rapidly in the next few years and forecasted to produce about 260,000 tonnes by 2030. Although a significant rise is foreseen in production values by 2025, it is important to note that in 2019, the market was represented by quite a number of actors, notably due to the current regulatory uncertainties or ‘restrictive’ approaches taken by several Member States authorities (i.e. non-use of the novel food transitional period), which explains why the provided figures (in terms of volumes) could be perceived as low. Furthermore, during this period, several companies have kept their activity on hold, awaiting the first EU novel food authorisations. The production forecasts mirror a much more ’dynamic’ market structure than today, thanks to a return to the market of previously established companies, expected emergence of new actors, expanded consumer outreach and the market not being limited to niche/specialised outlets (as it is currently the case).
With the growth of the insect sector and growing investment, more jobs will be created. An increase in both direct jobs, that involve primary production or processing activities of edible insects, as well as indirect jobs, such as in specialised retail, logistics, administration or research is foreseen. The forecasts reflect a significant rise in jobs by 2025, potentially indicating the positive impact of the expected novel food authorisations of insects as food in the EU. The increase in indirect jobs could indicate the expansion of consumers to be reached by European iFBOs considering its targeted market shift to the EU market by 2025.

Steps involved in the production of edible insect products

- Primary production: farming edible insects
- Processing of insects for food: preparing insect based food
- Final processing of insects for food: incorporation of insect ingredient(s) into preparations
- Sale and consumption: sale of product to end-customer

The profile of iFBOs

There are numerous entrepreneurs and companies active in the production of insects as food across the EU. iFBOs broadly encompass activities from ‘Farm to Fork’, which include farming of insects intended as food, processing them into ingredients (whole insects or derived products) and producing an end-consumer oriented product. They are followed by 28% of iFBOs involved in all the stages of production, that include farming of insects, processing them into derived ingredients, producing a final end-consumer oriented product and the sale to an end-consumer. The products of these operators can be orientated toward both other businesses (as supplying ingredients to final processors food products) and end-consumers (insect-based foods such as burgers, snacks, bars, biscuits, etc.). These operators, in turn, could have a broader range of customers (Business to Business-B2B, Business to Consumer - B2C) and commercial activity. 19% of the operators were involved in farming and processing insects into ingredients. These products would be intended for other iFBOs involved in producing end-consumer food products. Furthermore, 12% of iFBOs activity are involved only in producing insect-based ingredients and end-consumer products, whereas 3% of the iFBOs are involved only in farming activities (including killing step) of insects intended as food. These operators would have an intended product (whole insects) for iFBOs involved in further processing activities (operation profile P2, P3) – see figure iFBOs operation profile. Furthermore, 3% of operators were not involved in production or processing activities, rather in sales of various edible insect products to end-consumers through their respective channels (e.g. online platforms).

Marketing channels used by iFBOs

Currently, the most used channels for marketing of edible insect products are through companies’ own websites (24%), followed by fairs/events/conferences (22%). The functioning of these marketing channels is undertaken by the iFBOs and its effectiveness is respective to each company’s capacity. In terms of marketing channels used by iFBOs, retail outlets, external wholesalers and specific online portals represent a similar share. The marketing support through these channels assist in further enhancing the communication and outreach of the product to consumers. However, these channels cannot be fully utilised, as operations are restrictive to regional markets (application of the transitional measures in the MS). The least represented are channels such as restaurants promoting insect-based meals, or public lectures. The niche, region-specific market and outreach of the insects as food sector reflect on the channels currently used by iFBOs.

Data source: IPIFF Questionnaire on the EU market - March 2020

IPIFF launched a survey in March 2020 to map the current and forecasted EU market of edible insects. The respondents (33) to the survey are iFBOs active on the European market (including EFTA countries). In addition to the iFBO members, the targeted respondents (not affiliated to IPIFF) were mapped online or through IPIFF internal channels (members, contacts). The companies identified (71) are involved in the production and/or marketing of edible insects in Europe. All respondents of our study participated voluntarily. The companies represent the forerunners, whose products cover a vast majority of the European market for insects as food. The output of this consultation assists in portraying a more representative picture of the activities across the EU market for edible insects. According to the respondents’ inputs, the species of insects covered were black soldier fly (Hermetia illucens); yellow mealworm (Tenebrio molitor), lesser mealworm (Alphitobius diaperinus), house cricket (Acheta domesticus), banded cricket (Gryllodes sigillatus), migratory locust (Locusta migratoria).

3 According to the Eustat definition.
4 The total amount of external financial support (capital, investment, debt, subsidies…) received by the company since its inception.