POSITION PAPER

The contribution of the European insect sector to improving sustainability from 'Farm to Fork'

The prime objective of the European insect sector is to generate safe products suitable for both human consumption and animal feed. By **implementing circular principles inspired from nature and highly productive vertical farming practices, insect farming is among the most efficient protein production systems**. IPIFF believes that insect farming is one of the many solutions to challenges such as population growth, the increasing demand for protein products, as well as the limited land area available for agriculture.

Being a new agricultural sector in Europe ('insects' are farmed animals, according to the Regulation EC 1069/2009), insect production practices could bring diverse opportunities for farmers involved in animal husbandry and crop cultivation alike. They link food production chains (by upcycling by-products from the agri-food industries) with food production or animal farming (i.e. insects are in line with the natural nutritional needs of aquaculture, poultry and swine animals). Thus, we see the **insect sector as a reliable actor in connecting agricultural supply chains, bringing a positive contribution towards revitalising food-producing areas from both urban and rural regions**. In line with the support for protein crops under the CAP, **we believe that insect farming activities should receive equal attention under the CAP strategic plans**, helping farmers to maximise their contribution with regards to environmental and climate performance (e.g. by using locally produced materials, such as insect feed ingredients or insect-based fertilisers).

The insect sector is a reliable partner in the transition towards climate neutrality

Presently, insect farms have a reduced environmental footprint - being highly efficient in terms of water footprint or land-use. Moreover, the circular practices implemented in insect farming make such systems less and less dependent on finite natural resources. We are confident that by 2030, the European insect sector will remain a committed partner in achieving EU's target to halve food waste, by upcycling former foodstuffs into valuable ingredients for the agri-food chains. According to IPIFF members, up to a **third of the food waste generated today** (circa 20 million tonnes of former foodstuffs could be used for the feed/food chains, with several million tonnes of catering waste which could be used in technical applications) **could be suitable for insect farming** - before it is classified as 'waste'.

IPIFF supports the diversification of substrates used in insect farming (e.g. former foodstuffs containing meat and fish).

The contribution of insect farming to improving circularity in agriculture in EU's food chains

Developing 'new innovative food and feed products' is part of the business model of European insect farms. By diversifying the spectrum of protein-rich products available in the EU, insect farming has the potential to diminish certain externalities associated with imported food or feed products - while also shortening the agri-food chain. **Since 2017, insect farming is a leader with regards to innovative feed materials developed for the aquaculture market. The European insect sector is committed to further supplying new feed ingredients for poultry and swine animals – in line with their natural diet**. Through circular practices, **insect production can ultimately improve EU's self-sufficiency in terms of feed materials** - 'fewer imports of high-protein feed materials would be needed and the expansion of agricultural land outside the EU would be minimised' (source - IPIFF Vision Paper). That is in line with one of the aims of the 'European Green Deal' when it comes to biodiversity: '...promoting the production and use of new sources of protein that can relieve pressure on agricultural land'.

IPIFF calls for the immediate authorisation of insect proteins in poultry and pig feed. In our view, this measure would offer alternative feed ingredients for these sectors – in line with the natural diet of such animals - while also contributing to the upscaling of the European insect sector, ultimately improving EU's self-sufficiency in terms of feed materials.

Healthy diets are diverse diets

The high protein content of edible insects makes them a potent complement in diets with reduced meat and dairy consumption. **IPIFF acknowledges that diversified diets across Europe require the availability of a wide variety of products and ingredients for the nutritional needs of EU consumers**. Edible insects can complement low-protein diets thanks to their diverse amino acid composition. In addition, **insects are more than an alternative to meat.** They contain numerous vitamins, minerals and prebiotic fibres - important for the metabolism and immunity of the human body (see IPIFF Factsheet on 'Edible Insects and Human Nutrition'). Subsequently, thanks to their physical properties, they can be easily incorporated into various commonly consumed food products such as bakery products, pasta or snacks - improving their nutritional characteristics and their protein content.

IPIFF is in close contact with the European Commission and EFSA in order to provide constructive input for the authorisation process of insects as a novel food. We are confident that the outcomes of this procedure will facilitate the availability of food products containing insects and their derived ingredients.

By-products from insect farming can improve soil fertility through circular practices

Similar to other farming practices, insects generate by-products which could be applied as a fertilising product in agriculture. This process - taking place naturally in a wide range of ecosystems - reintroduces nutrients in the soil, providing numerous benefits for plant development. The application of insect frass (i.e. insect dejecta) shows positive results on plant growth and health, thanks to the presence of plant-growth promoting microorganisms. Incorporating insect frass in fertilisation strategies could not only provide plants with essential nutrients and micronutrients but also with microorganisms inhibiting the growth of pathogens that will, in turn, reduce the necessity to apply additional inputs, such as mineral fertilisers and pesticides. Helping farmers in their fertilisation strategies, **the circular use of insect frass can play an important role in improving soil fertility and its capacity to store carbon.**

IPIFF calls for the immediate adoption of a level-playing field for insect frass application. A uniform regulatory context for such products will improve insect farmers' contribution to the objectives of the 'New Action Plan on Circular Economy'.

Insect farmers implement practices that are consistent with the principles of organic farming

IPIFF members implement sustainable practices in agriculture, without using pesticides, antibiotics or growth hormones. This 'low-input' approach is in line with the biological characteristics of insects - which are able to make full use of their feeding substrates, without requiring additional inputs. Our sector hopes that **the development of organic standards for insect farming will allow the sector to maximise its contribution towards a more sustainable food-producing system, providing local solutions to local challenges.**

IPIFF pleads for the development of organic standards for insect production activities. The authorisation of insect-derived ingredients in organic aquaculture, for example, is in line with the objectives of the organic legislation – providing local and environmentally sound products that have a reduced pressure on the environment.

The inclusion of insects and their derived ingredients into animal feed has benefits on animal health

The amino acid profile of insects corresponds to the dietary needs of fish, poultry or swine animals, with adequate levels of amino acids which are seen as limiting factors (see IPIFF Factsheet on 'The Nutritional Benefits of Insects in Animal Feed'). The presence of the essential linoleic (omega-6) and α-linolenic acids (omega-3), as well as high levels of lauric and oleic acid are of high importance in the development of personalised feeding strategies. Moreover, antimicrobial peptides found in larvae are presently investigated for their potential in the development of novel antibiotics, mainly thanks to their immune-boosting properties - confirming their contribution in reducing the use of antibiotics.

As indicated in our Contribution to the Horizon Europe Programme, IPIFF supports the development of insect-based feed ingredients with the aim to improve animal health.

IPIFF members take animal welfare seriously

IPIFF and its members are taking animal welfare very seriously. For us, improved animal welfare is a central component of sustainable food production (see IPIFF Factsheet 'Ensuring High Standards of Animal Welfare in Insect Production'). We believe Brambell's 5 degrees of freedom constitute a good basis for the establishment of good welfare practices provided that these take into account insect production specificities.

While insect farming practices are not under the scope of the EU standards on animal welfare, IPIFF provides guidance to its members in order to facilitate the implementation of such good practices.