

IPIFF Contribution Paper 'The European insect sector's response to the growing demand for EU organic products'

Context & general remarks

1. Introduction: EU policy context

With the publication of the 'Farm to Fork Strategy'¹ and the 'Action Plan for the Development of the Organic Sector' (later referred as 'Organic Action Plan')², the European Commission has tabled in the past year two ambitious framework policies which aim at promoting the organic sector. IPIFF welcomes many of the forward-looking initiatives included in there. In our view, the objectives included in these framework policies such as the goal of at least 25% of total farmland being used for organic farming by 2030 would also play an important role in the development of the European insect sector - which in turn, could help in the transition towards more sustainable and resilient food systems.

2. The European insect sector's contribution to growing needs from European farmers and consumers

Many producers in Europe are tapping into the organic market(s), responding to growing demands - from European farmers, pet food producers and consumers - for organically produced food and feed. Furthermore, organic production constitutes a valuable outlet for insect producers to secure significant price premium for their products.

This is notably true in the food segment as demand for organic insect (food) products is indeed gaining traction in several EU Member States, especially in the wake of the EU novel food authorisations.

According to the European farmers and Agri-cooperatives' organisation (Copa-Cogeca) "*there is (also) a clear and strong need to increase the production of European organic protein feed if we want to support the conventional livestock sector's conversion to organic (...). Organic livestock farming, especially of monogastrics, faces a huge lack of high-value amino acids*".

As a consequence, in order to enable a conversion of the conventional livestock sector to organic production methods, an **increase in organic high-quality proteins is required**. In order to achieve this goal, Copa-Cogeca considers that "*the Commission should support the organic feed industry in developing a system to collect and process organic category 3 materials³ as quickly as possible*"⁴.

¹ The EU 'Farm to Fork Strategy' (20 May 2020) can be found [here](#).

² The 'Action Plan for the Development of the Organic Sector' can be found [here](#).

³ Pursuant to article 10 (l) of [Regulation \(EC\) No 1069/2009](#) laying down health rules as regards animal by-products and derived products not intended for human consumption, category 3 materials notably encompass aquatic and terrestrial invertebrates, thereby including insects and their derived products.

⁴ Copa-Cogeca's views on '[An action plan for the development of organic production](#)' (2 July 2021).



With its locally produced and nutritious products, **the European insect sector can effectively contribute to enhancing organic animal nutrition in a sustainable way.** Processed animal proteins derived from insects are characterised by highly digestible proteins and high content of limiting amino acids. Furthermore, insect products contain immunostimulant chitin and healthy fats (e.g. high level of lauric acid, with proven antibacterial effects) while being a source of vitamin B 2 (riboflavin)⁵ which are particularly suited for juvenile animals.

Insects also contribute to **efficiently upcycling low value agri-food products**, in line with circularity principles. As insects are mostly farmed on agri-food co-/by-products or foodstuffs no longer intended for human consumption (i.e. former foodstuffs), such farming practices contribute to safely reintroducing nutrients in the agri-food chains, reducing the food waste burden while also generating locally-produced feed ingredients.

3. IPIFF's policy demands

The present document aims to explore all possible avenues to respond effectively to the growing demand for EU organic products as mentioned in the Organic Action Plan. To this end, IPIFF proposes a two steps policy plan:

- Exploring the possibilities for **including insect-derived products in organic production**, thereby increasing the use of feed based on insects as well as the supply of locally sourced feed proteins (*Chapter I*);
- Developing EU regulatory standards for **the organic certification of insect production activities** (*Chapter II*).

Chapter I: Upscaling organic production by including insect-derived products

IPIFF is convinced that the synergies behind modern insect farming and the principles of organic farming represent a considerable opportunity in the development of both sectors.

The ambitious **'Farm to Fork' strategy** underlines the need to promote the development of organic production models in Europe. However, addressing the anticipated growing demand for organically certified products in the EU remains challenging with the current production patterns⁶. Yet, considering that **several different recent regulatory developments** could - at least in parts - further **unlock the European insect's potential** in the future, IPIFF has identified opportunities for the European insect sector to contribute to upscaling organic production.

Against the background that processed animal proteins derived from insects (insect PAPs) will soon be authorised for pig and poultry farming in the European Union⁷, insect-derived ingredients will soon be

⁵ In monogastrics, riboflavin is not synthesised in sufficient quantities to meet the physiological needs of the animals. Deficiency can lead to serious production and welfare issues.

⁶ For further information on that matter please refer to IPIFF's Regulatory Brochure '[The insect sector milestones towards sustainable food supply chains](#)'.

⁷ [On April 13](#), the EU Member States approved a draft Regulation tabled by the European Commission to authorise insect Coeca's PAPs in pig and poultry feed. The official adoption of the Regulation is foreseen by September 2021.

allowed for **use in feed for organic chicks and piglets up to 5 %** (in accordance with the provisions foreseen in the new and ‘soon to apply’ EU Organic legislation - [Regulation \(EU\) 2018/848](#)⁸).

Furthermore, in line with the European Commission’s goal outlined in the Organic Action Plan to reinforce organic aquaculture, **IPIFF calls on the EU legislator to approve insects as feed in organic aquaculture**⁹. Considering that presently the EU organic legislation allows the use of inputs that cannot be *per se* certified organically (such as marine-derived ingredients from sustainable sources), we strongly believe that insects could complement the growing demand for organic aquafeed products - in line with the natural diet of such fish species. Approving additional alternatives as feed in organic aquaculture will also ease the pressure in the protein feed market¹⁰.

In the wake of the ‘first insect novel food authorisations’¹¹, the expected increasing consumers’ demand for organic foodstuffs would also play a constructive role in shaping the market, **facilitating access to insect-based products towards organic food consumers**¹². Notably, we are expecting that organic products containing insect derived ingredients (up to 5 % in accordance with EU organic legislation¹³) will continue to gain market access across the European Union.

Finally, amidst the recently approved draft Commission Implementing Regulation, aiming at setting EU baseline standards for the valorisation of insect dejecta (frass) as fertiliser¹⁴ and in line with the European Commission’s objective included in the Organic Action Plan to improve soil health across Europe by promoting complementary solutions, **IPIFF calls on the European Commission to allow the use of insect frass by European organic producers**.¹⁵ Similar to compost or other types of animal manure, frass contains relevant nutrients and micronutrients, as well as chitin,¹⁶ which could stimulate the growth of beneficial bacteria in soil.¹⁷ These properties make frass a valuable solution for farmers active in crop production across the EU, who will now be able to incorporate insect frass as part of their fertilisation strategies.

⁸ In line with the articles 1.9.3.1. and 1.9.4.2. on poultry and porcine nutrition - Regulation (EU) 2018/848.

⁹ For further information, please refer to the [IPIFF contribution to the public consultation on the feed of organic carnivorous aquaculture animals](#).

¹⁰ Please also refer to IPIFF’s [contribution to the European Commission’s public consultation on the amendment of the Article 3.1.3.3.\(e\) of Annex II to Regulation \(EU\) 2018/848](#).

¹¹ See notably [Commission Regulation \(EU\) 2021/882](#) of 1 June 2021 authorising the placing on the market of dried *Tenebrio molitor* larvae as a novel food (Regulation published in the EU Official Journal on 2 June 2021)

¹² For more details, see [IPIFF Factsheet ‘Edible Insects on the European market’](#).

¹³ According to article 30 5. (b) (ii) of Regulation (EU) 2018/848 of 30 May 2018 on organic production and labelling of organic products: ‘foods may be labelled “organic” if at least 95% of their agricultural ingredients are organic.

¹⁴ According to the applicable EU procedures, the above Regulation shall enter into force after a three-month scrutiny period.

¹⁵ Please refer for more information on that matter to IPIFF contribution to the public consultation on ‘[Organic farming - list of products & substances authorised in organic production](#)’ (23 April 2021).

¹⁶ As mentioned by [Quilliam et al., 2019](#), ‘fragments of chitin in frass biofertilisers can induce disease resistance in crop plants grown in biofertiliser-amended soil’.

¹⁷ As mentioned by [Poveda et al., 2019](#), frass has the potential to promote ‘plant growth and induce tolerance to abiotic stress’.

Chapter II: EU organic certification of insect production activities

✚ General remarks as regards standards applying to insects' substrates

Next to the above-mentioned possibilities (see chapter I), the **development of organic standards for insect farming is in our view necessary for the sector to unlock its full potential** towards a more sustainable food-producing system¹⁸. A swift development of organic certification standards for insects intended for food and feed would also **play an active role in contributing to the growth of the organic sector** towards both market segments, in line with the 'Farm to Fork' Strategy.

A large part of insect farmers in Europe do stick to the same management principles as organic livestock producers, including notably through adherence to best environmental practices (e.g. feeding of insects with chemically free and non-GM materials) and/or commitments not to use veterinary drugs and/or chemical substances at production and processing stage. We do therefore consider appropriate that **EU organic rules which concern 'mainstream' livestock do equally apply to European insect producers**.

Notably, insects indeed offer a unique opportunity to re-use agri-food co-products which would have otherwise been discarded (e.g. valorisation of co-products from cereal, starch of breweries, or use of unsold products from supermarkets and local food producers or bakers) into high-quality proteins, therefore not generating additional pressure on natural resources, in line with the general principles of the EU organic legislation¹⁹.

However, the above streams **do not generate feed materials that can be organically certified in sufficient quantities** and at affordable prices, making it very challenging for insect producers to restrict their sourcing to such products: e.g. today, operators producing insect proteins for use as feed are not technically in capacity to incorporate up to 100% of organically certified materials in the feed ratio of their animals (e.g. requiring insect producers to source 100% of their substrates on the organic market is today unrealistic, considering that only about 8,5% of total utilised agricultural area in the EU is currently under organic farming, of which 45% are organic pastures and meadows)²⁰.

- We fully adhere to the principle of **giving incentives for insect farmers to source the feed used in insect production in priority from organic materials**. At the same time, we do plead for the EU legislator to develop a set of **derogations and/or adaptations to those general requirements**, which would ensure that these **standards remain compatible with insect production market realities**. Notably, we fear that requiring insect producers to source 100% of their substrates/feed on the organic market, would largely hinder the possibility for actors producing insects as feed to uptake these new organic rules.

In this context, we are eager to engage a **joint dialogue with EU policy makers** (European Commission services, national competent authorities) and **explore some 'concrete avenues'** in order to tackle this particular problem.

¹⁸ E.g. while insect production is already eligible to organic certification in certain non-EU countries (e.g. USA, Canada or Switzerland), EU insect producers are not eligible to (public) organic certification, due to the absence of EU organic standards for their products

¹⁹ See notably article 5 of [Regulation \(EU\) 2018/848](#) which advocates for the responsible use of natural resources.

²⁰ [Organic Farming Statistics by Eurostats](#) (January 2021).

✚ IPIFF proposals on standards reg. the geographical radius' of substrate sourcing

We strongly believe that **insect producers should be encouraged to give preference to regionally produced materials**, as a means to limit the environmental impact of their production. We do however consider unrealistic to require a minimum % of the feed to be sourced from the agricultural holding from which the insect animals are kept. The vast majority of insect producing companies are indeed exclusively dedicated to insect production activities, consistently with EU food and feed safety requirements (e.g. Regulation (EC) No 142/2011 and Regulation (EC) No 999/2001).

Where insect farmers are unable to source organic feed material exclusively from the region, **the use of non-regionally sourced organic feed material is allowed**. The maximum percentage of non-regionally sourced organic feed material authorised per period of 12 months shall be:

- a) 60% during the period from 1 July 2022 to 31 December 2025;
- b) 45% during the period from 1 January 2026 to 31 December 2028;
- c) 25% from 1 January 2029 onwards.

The operator shall keep documentary evidence of the need for the use of this provision.

✚ IPIFF proposals for standards applying to breeding practices

Regarding the breeding practices, IPIFF believes that the insects used in organic insect farming should derive from organic sources. Both in cases where the stock would be raised on the production site itself and purchased externally (e.g. stock produced from half-life cycle production sites), the farm manager shall prove that organic stock is not available.

The following conditions shall therefore apply when using or purchasing stock from conventional sources (e.g. from half-cycle production sites):

- For purposes of the initial establishment of stock, non-organic breeding insects may be used, with no limits imposed;
- For stock renewal, IPIFF proposes that the proportion of non-organically grown insects in the stock may not exceed 5%.

***Additional remark:** the same requirements should apply for stock renewal of the breeding population or of the parent stock (which apply to 'egg-to-egg' full life cycles models and 'egg to larvae' half-life cycle production sites')*

Yet, while renewal replacement of the parental stock with more parental stock may only incorporate 5% of non-organic parent stock (in line with the above principles), the grandparent stock (which produces organic parent stock) would not need to be reared on organic substrates.

Genetically modified (transgenic) organisms and those created by polyploidisation or gynogenesis are prohibited from use as stock.

Acknowledging that carryover effects in insect breeding are neglectable, IPIFF believes that specific breeding practices for organic insect farming are not expedient. Instead, IPIFF proposes that any organic insect-derived end product may not contain more than 10% of non-organically reared insects.



IPIFF proposals for standards applying to on killing methods

Owing to animal welfare considerations, the used killing method should ensure the rapid death of the animal. IPIFF therefore refers to three currently accepted techniques (e.g. killing by freezing, applying hot temperatures or mincing) since these ensure a **quick death and reduce potential pain risk** (such provisions could be adapted upon documented scientific evidence demonstrating pain sensation being experience by insects)²¹.

IPIFF proposals for standards applying to animal welfare

We believe that **Brambell's 5 degrees of freedom**²² (i.e. freedom from hunger and thirst, freedom from discomfort, freedom from pain, injury or disease, freedom to express normal behaviour and freedom from fear and distress) **constitute a good basis for the establishment of good welfare practices in insect production** in general. In our [reflection paper on animal welfare](#), we have included a set of proposals for adapting those principles in the context of insect animal production.

More precisely, we suggest the following rules to apply:

- (a) transport conditions shall respect the physiological needs of insects;
- (b) mutilations, such as the trimming of wings or removal of body parts may not be allowed;
- (c) the culled insects are to be disposed of in a professional manner (incineration);
- (d) materials that could cause injuries to insects may not be used in insect farming. We therefore believe that the use of materials made of recycled paper or board or eggs carton should be prohibited, if evidence is provided that those materials may entail adverse effects on insects (i.e. presence of harmful contaminants).

IPIFF is well aware that 'cannibalism' contradicts animal welfare paradigms. Yet, it is important to note that cannibalistic practices are for some species' natural instincts. One must therefore acknowledge that those behaviours cannot be completely prevented in insect farming.

Furthermore, IPIFF believes that the setting of maximum population density levels is irrelevant in the case of farmed insects: many species indeed thrive when bred densely populated.

As IPIFF, we are committed to promoting good welfare practices in insect husbandry, transport and at the point of death. Along that line, we have developed a reflection paper which aims to promote animal welfare standards for insect producers in Europe (for further information please refer to the following [link](#)).

²¹ For further information please refer to IPIFF's Publication on '[Animal Welfare in Insect Production](#)'.

²² Report of the Technical Committee to Enquire into the Welfare of Animals kept under Intensive Livestock Husbandry Systems, the Brambell Report, December 1965 (HMSO London, ISBN 0 10 850286 4).