

THE EUROPEAN INSECT SECTOR TODAY: CHALLENGES, OPPORTUNITIES AND REGULATORY LANDSCAPE

IPIFF vision paper on the future of
the insect sector towards 2030

This document is in the process of being updated



Global and European perspective

With the world population expected to exceed 9.7 billion by 2050, food production needs to increase by 70%¹. Yet already today, the food system is under pressure. Insect protein responds to the demand for sustainable and high-quality protein to feed a growing population.



1/3 of food is wasted

One-third of food is wasted, either rotting in consumers' and retailers' bins or spoiling due to poor transportation and harvesting practices, according to the Food and Agriculture Organization (FAO)². In the EU alone, close to **90 million tonnes** of food is wasted per year and this is expected to rise³.

Global demand for animal products is expected to more than double between 2000 and 2050 so animal feed production is increasingly competing for resources with human food and fuel production. Today, a high share of animal feed in the EU is imported. Insect protein is approved for fish farming in the EU and could provide a solution to feeding other livestock in the future.

The market for insect production is growing steadily with economists forecasting a 20% increase over the next five years⁴.

Insects as animal feed

Insects are a natural component of the diets of animals such as carnivorous fish, poultry and pigs. They are high in protein – from 50% to 82% (as a dry product)⁵ – and can be added to animal feed – with up to 40% insect content for fish feed and 30% for chicken feed.

Insect products have an amino acid profile that makes them highly-digestible for animals. The amino acid profiles of most insect species tested in feed formula for farmed fish show a good correlation with the fish's specific needs⁶. Insects also promote nutrient

uptake and show promising results in terms of animal growth performance. This supports their use as a complementary source material in feed formula for aquaculture and livestock animals.

Some insects also contain bioactive components like lauric acid, antimicrobial peptides and chitin which have immune-boosting properties. Preliminary results have shown that certain bioactive insect components led to improved immunity and reduced mortality rates when used in aquaculture feed e.g. for shrimp and salmon.

Preliminary studies⁷ have shown that insects have a lower environmental footprint compared to other livestock animals. Insect producers and research institutes are collaborating to generate more data.

¹ Food and Agriculture Organization (FAO): http://www.fao.org/fileadmin/templates/wsfs/docs/expert_paper/How_to_Feed_the_World_in_2050.pdf

² FAO: <http://www.fao.org/save-food/resources/keyfindings/en>

³ Estimates of European food waste levels (2016): <http://www.eu-fusions.org/phocadownload/Publications/Estimates%20of%20European%20food%20waste%20levels.pdf>

⁴ Meticulous Research (2018): <https://www.meticulousresearch.com/edible-insects-market-2023>

⁵ Rumpold and Schlüter (2013) Levels may vary across species and production processes (Fasakin et al. (2003); Banjo et al. (2006))

⁶ Hasan (2001); NRC (2011); Alegbeleye et al. (2012)

⁷ E.g. Ooninx and de Boer (2012)