

Appendix 3: Visuals

Why Insects ?

- Highly efficient in the rapid conversion of organic “wastes” into biomass
- A natural component of the diets of carnivorous fish and free-range poultry
- Protein digestibility higher than most vegetable-based proteins
- Land use requirements vastly lower as compared to crop protein

Black soldier fly *Hermetia illucens*
Globally preferred insect species for commercial scale production

Circular Economy: BSF Valorisation of Agri-food Residues

Source of high-quality protein, fat (high in lauric acid)
Proven suitability for use in fish, poultry & pig diets

Insects as Livestock Feed: UK Drivers

- To enhance valorisation of Agrifood residues and other waste streams
- To reduce heavy reliance upon protein imports (fishmeal & soya meal) current value £1.9 billion p.a. (2015)
- UK compound feed sector willing to utilise new and more sustainable sources of protein (annual production 15.7 million tonnes; value £3.63 billion)
- UK pet food sector needs new and more sustainable sources of protein
- To reduce the aquaculture industry’s reliance on fishmeal as a protein source, and existing use of plant-based alternatives (fishmeal currently represents c. 20% of salmon diet composition); research has shown that insect/BSF meal can replace 50% or more of fishmeal in farmed fish diets.

Food and drink material hierarchy

In principle > 9 million tonnes food waste available in the UK
At c. 20% conversion = 1.8 million tonnes insect meal per annum

- How might insect production fit/complement current supply chains ?
- Regulatory hurdles: food waste containing meat products not permitted as insect rearing substrates

Figure adapted from WRAP 2015 Report “Estimates of Food and Packaging Waste in the UK Grocery Retail and Hospitality Supply Chains”

Regulatory Roadmap

Historically insects not considered as a source of nutrition for animal feed
EU has taken an adaptive approach towards enabling legislation rather than creating new “insect” based regulations

IPIFF roadmap on the use of insects in animal feed

Step	Target	Timeline
1	Authorise insect proteins for aqua feed use	Target achieved Authorisation effective since 1 July 2017
2	Authorise insect proteins for use in pig and poultry feed	EU discussions may begin end-2018. Approval by Member States possible during the 1st quarter of 2019
3	Authorise former foodstuff and/or catering waste as feed for insects	2020 onwards

ipiff
International Platform for Insects as Food & Feeds: Annual conference 2018

Government support & Stakeholder collaboration across the supply chain is required to develop insect biomass production at scale in the UK

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