UK PET FOOD

INSECT-BASED INGREDIENTS IN PET FOOD

As always, the most important factor in feeding our pets is giving them a complete and balanced diet, appropriate for their species and life-stage.

When made into complete pet food, insect[1] proteins and lipids (fats) can contribute to nutritious and palatable products that can also be environmentally sustainable (Fera and Minerva, 2019). While there is a wide range of pet food products to choose from, insect-based products offer a great alternative to owners who prefer to feed their pets a diet that is sourced from ingredients other than traditional livestock species.

COMMON TYPES OF INSECTS USED IN PRODUCTION OF FEED

There are currently 7 species of insects that are authorised in the EU for use in pet food[2]. The top three most developed species of farmed insects for use in pet food are:

House crickets
(Acheta domesticus)

Yellow mealworms
(Tenebrio molitor)

Black soldier fly (BSF)
(Hermetia illucens)

INTERESTING FACTS

- Farmed insects are typically fed on a variety of diets from spent grains to palm kernel, fruits, and vegetable crop by-products.
- The initial farms mainly began in the tropics but now span the globe. Today, there are over 100 farms in European countries such as Holland, France, Poland, Belgium, and UK.
- Most insect farms have multiple insect species being farmed on a commercial scale.

The potential scale of insect protein used for pet food in the UK is estimated as 20 thousand tonnes per year, based on an estimate of 5% of the current market size (Fera, 2019).

WHAT IS UNIQUE ABOUT INSECTS?

Insects are able to eat by-products and food that are surplus to human requirements and efficiently convert them into high quality proteins and fats. This biological re-processing of by-products is the key concept underpinning the use of insect protein in animal feed.

DIFFERENT FORMATS OF INSECT-BASED INGREDIENTS

The insects are mainly rendered into high protein meal (e.g. 55% protein with 80% digestibility) and lipids (e.g. 95% purity) or made into puree which is then frozen. Whole dried alternatives are available, but these are mainly targeted at the wild bird market.

1. *These are specific, authorised, species of insects that are commercially produced, under controlled conditions, for animal feed.*
2. *Regulation No. 2017/893 authorised the use of insect proteins originating from seven insect species which are not pathogenic nor have other adverse effects on plant, animal, or human health.*

FURTHER ADVICE AND INFORMATION CAN BE FOUND AT WWW.UKPETFOOD.ORG

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NUTRITIONAL PROFILE & POTENTIAL ADDED BENEFITS

Insects such as BSF are rich in protein and have a clear potential in animal nutrition. The well-balanced amino acid profiles of certain insect ingredients are shown to be comparable to meat- and fishmeal (Spranghers et al., 2017). Due to their novel protein structure there is a lot of interest for use of insects in diets that are intended for pets diagnosed with food intolerance or allergies[3].

Additionally, insects can have high fats/oils, mineral and vitamin levels, depending on what they are fed on.

Image demonstrating the processing of insects to larvae and finally to feed.

Given the benefits of insects, will there still be a place for using animal by-products in pet food?

In Europe alone, annually, around 18 million tonnes of animal by-products arise from slaughterhouses and human food production plants (EFPRA, 2020).

Recycling of these by-products, where safe, into nutritious pet food and animal feed creates major economic and environmental benefits (Jedrejek et al., 2016).

ENVIRONMENTAL BENEFITS

Although more research is required, preliminary reports suggest that insect production at large scale could reduce environmental impacts (less greenhouse gas emission, water, and land usage) compared to conventional livestock production (Fera and Minerva, 2019).

Insects are also efficient feed converters, depending on their species and the diet consumed. Mealworm and house crickets have been reported to convert some feed sources into body mass with similar efficiency to poultry (Oonincx et al, 2015).

CONSUMER ATTITUDE AND ACCEPTANCE LEVEL

Market research work undertaken by PROteINSECT (2016) indicates that a high percentage of consumers demonstrate acceptability of insects as a protein source in animal feed[4]. They also showed a desire for more information about insects as an alternative sustainable protein source.

Growing media attention and campaigns by farmers, academics, professional bodies (such as BVA) and pet food companies are helping to increase acceptability of insect-based ingredients among pet professionals and owners.

Science supports insect use and although more research is needed there is already strong evidence to the benefits of using insects.

Please check our website or simply scan the QR code opposite for a full list of UK Pet Food Factsheets and Posters.

Regulatory information on this topic can be found via www.gov.uk/guidance/using-animal-by-products-to-make-pet-food

*3. For more information on food allergy and intolerance in cats and dogs please visit **www.ukpetfood.org/resource/food-allergy-factsheet.html***
4. 70% of those surveyed said that it is totally acceptable to feed insect protein to farmed animals.

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