



**IAFF 22
NHM, April 26th & 27th.
Day 1**

9.30 Welcome RES

9.35 House rules NHM

9.40 Introduction to the day, Peter Smithers RES.

9.50

Keynote lecture.

Arnold van Huis, Emeritus professor, Laboratory of Entomology, Wageningen, The Netherlands.

Edible insects: progress and prospects

During the last five years the number of articles dealing with edible insects increased exponentially. As feed for animals, the black soldier fly is often targeted, mainly because the larvae can transform many different organic side streams of low economic value in high value proteins and fats. Microbial communities in substrates and the insect gut may help in the conversion of low-quality organic side streams. The nutritional values of insect products compare well to those of the common meat products. Health benefits of insects relate to the high content of polyunsaturated fatty acids, the high iron and zinc content, the antioxidant capacity, and the positive effects on the gut microbiota. Chitin strengthens the immune system in humans and in animals, improves plant growth and activates plant defense. The fat of insects can be technology applied as bio lubricants, biodiesel, cosmetics, and butter replacements in bakery products. Proteins can be employed as a base for bioplastics used for agricultural purposes. The environmental impact of producing insects is lower than that of common production animals. Legislation is gradually becoming more conducive. A major challenge is to process insects and disguise them in familiar products and make them safe and appetizing. Several strategies are proposed to convince consumers to go from an occasional snack to mainstream food.

10.50

Kieren Whitaker, Entocycle.

Industrial scaled production of insects in the UK, challenges and solutions.

Entofarm 1, the first UK industrial insect factory! The challenges and opportunities for scaled growth in the UK will be discussed.

11.20

Desmond Cave, Beta Bugs.

Enabling the UK Black Soldier Fly Industry to Take Flight

Brief introduction to BSF and why they are the future of animal feed. I will also focus on genetic improvement of the larvae, egg production and supply. Why this makes farming of BSF more economic, as well as a greener option than soya meal.

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11.50

Helen Hesketh, Tag Team Talk with ESRs in the INSECT DOCTORS Programme

Insect Doctors: training insect pathologists to prevent and manage infectious diseases in insect mass rearing.

Brief introduction and update on progress in the INSECT DOCTORS programme, a European Joint Doctoral Programme that is educating 15 PhD students to develop the skills needed to diagnose and manage disease problems in commercial insect production systems.

Anna Slowik, UK Centre for Ecology & Hydrology - **Nutritional ecology of entomopathogenic fungi: You are who you eat.**

Pascal Herren, UK Centre for Ecology & Hydrology - **How environmental conditions affect host-pathogen interactions in *Tenebrio molitor***

12.20

Carlotta Savio, Wageningen University, The Netherlands.

The role of probiotics in health maintenance in mass reared insects.

Probiotics can enhance insect health and pathogen resistance. This project has focused on the effects that probiotic microorganisms and the diet composition can have on mealworm fitness parameters, microbial composition and immune system when the insect is reared in mass-rearing environmental conditions.

12.40 Rolling introductions

13.00 Lunch

14.00

Rob Lilywhite, University of Warwick.

Frass as fertilizer: advantages and disadvantages – insights from the ‘Insectrial Revolution Project’.

The insect rearing industry generates three times as much frass as protein. This presentation will examine the fertilizing value of different frasses and how processing can influence their performance and subsequent plant growth. The advantages, and some issues, of using frass as a fertilizer will be discussed.

14.30

Miha Pippen, Better Origin.

Status of insects as feed in the UK post-Brexit.

It's been around a decade since the start of insect farming for animal feed sector in the UK, and what was once an idea has now started to materialize tangibly. From aquafeed to poultry, insect uses as animal feed are growing in scale and impact, and here we review the current status of the British insects for feed landscape in the first post-Brexit years.

14.50 Panel discussion

16.00 Close

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Day 2

9.30 House rules NHM

9.35 Introduction to the day, Mark Ramsden ADAS/RES.

9.40 Legislation re insects as Food

Rachel O'Connor, Michelmores.

UK Legislation: Where are we now?

Rachel will provide an update on the UK legislative position for insects as food and feed. Including; significant EU legislative changes since Brexit (developments in poultry and swine feed, the 8th insect and frass) and what they mean for the UK; the current UK position on insects as food; and (if we have time...) what might be in the pipeline for insect sentience and GM.

10.00

Dr Nick Rousseau.

Progress towards Edible Insects being fully legal in the UK market, post BREXIT (*online talk*).

The Woven Network is now operating as a Trade Association for the UK edible insect sector and is making significant progress in being the voice for the 25plus companies to secure Novel Food approval and press for a transition arrangement to support trading in the interim. Nick will describe what we have done and the current situation.

10.20

Discussion of how to work with FSA to reverse the recent pause placed on the use of insects as food, raise the media profile of the problem and discuss possible solutions.

11.00

Serge Corneillie.

The use of insect meal from a feed manufacturer perspective (*online talk*).

The feed industry is seriously interested in using new and sustainable raw materials such as insect meal. However, there are major constraints in using these materials related to supply, quality and price. The feed industry needs to produce feeds that give consistently good performance at a competitive price. Every change in raw material is risky as it can change the outlook of the feed and/or reduce the performance of the animals often related to the volume of feed uptake. Furthermore, the raw materials used should be consistent in terms of nutritional quality as feed companies cannot afford to check the nutritional specification of each new batch (AA composition). Lastly, the profit margins in the feed industry vary widely from high volumes with minimal profits in poultry feed to low volumes but high profits in petfood. Understanding these factors will speed up the integration of insect meal into the feed industry.

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11.30

Jennifer Ferreira & Pattanapong Tiwasing, Coventry University.

The Thai Edible Insect Industry: Poised for Export Growth?

The global market for edible insects is expanding rapidly and there is potential for the significant growth of Thai edible insect industry to increase exports to overseas markets, particularly the EU and UK. Key challenges remain for the Thai edible insect industry in terms of knowledge gaps, standards gaps, and a changing regulatory landscape. This presentation explores these challenges, and the potential for the Thai edible insect industry to increase exports based on a research project that sought to develop a roadmap to help enable Thailand's edible insect industry to achieve export readiness.

12.00

Richard Small InsPro.

Nutrient Circularity enabled by Black Soldier Fly Larvae. Recycling food waste.

Food waste is an inevitable result of urbanisation but when valorised correctly, this becomes an asset. Bioconversion of food waste using insects to produce animal feed, in place of soya, brings food waste/by-products back into the human supply chain. Nutrient circularity prevents nutrients that are heavily invested with time, transport, water, GHGs and CO₂e from being lost. InsPro has developed a dispersed business plan that bring the process to the waste to minimise waste and feed miles.

12.30 Lunch

13.30

Emilie Filou, Journalist, Buzzing newsletter.

Creating a buzz about insects as food and feed.

The concept of using insects as food and feed is starting to gain traction. Coverage in the media is slowly moving away from sensationalist headlines and starting to cover the emergence of the insect protein industry but how do you accelerate that transition? In this presentation, Emilie Filou discusses what the insect industry could do to raise its profile, from finding allies in partner sectors to changing the language and captivating the public through social media.

14.00

Meghan Barrett, Rethink Priorities, Los Angeles, USA (*online talk*).

Identifying major welfare concerns facing black soldier flies reared and slaughtered at scale, and potential areas of future concern for the industry.

This talk will briefly discuss major current and future welfare concerns identified for BSF, make recommendations where possible for minimizing those welfare issues, and discuss critical research gaps where industry-academic partnerships could help solve or prevent BSF welfare issues.

14.30 Panel discussion

16.00 Close

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