PROteINSECT
INSECTS AS SUSTAINABLE SOURCES OF PROTEIN

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FLIES: FROM NUISANCE TO NUTRITION

22 May 2013

EMBARGOED: Not to be published before 00.01am, 29 May 2013

A new €3 million, EU-funded project, PROteINSECT, is investigating how flies can contribute to the growing demand for protein in animal feed.

With an increasing global population and a rise in per-capita meat consumption in developing countries, there is a need to investigate alternative sources of protein for use in animal feed. Europe's high demand for feed protein is currently largely met though imported soya.

For generations, a variety of insects have been a valuable source of protein for both human consumption and animal feed across continents other than Europe. As consumption habits shift to pork, chicken and fish, insects have the potential to be utilised more effectively as a natural ingredient in high-protein feed.

Although there is growing European interest in insects as a novel source of HUMAN FOOD the PROteINSECT project is focussing solely on the potential use of insects in ANIMAL FEED. The three-year project, launched earlier this year, is being led by scientists at The Food and Environment Research Agency (Fera), located near York.

Elaine Fitches, Coordinator of the PROteINSECT global consortium, says: "The potential of insects as a source of valuable protein has been recognised by scientists at Fera for a number of years. With expertise in entomology and food safety, Fera is ideally placed to lead the evaluation of insects as a sustainable source of protein in animal feed."

Insects need a feed source themselves, and to avoid competing with other uses, PROteINSECT will focus on the use of waste materials for production of fly larvae.

Elaine Fitches continues: "PROteINSECT is focusing its research efforts on flies not only for their ability to grow rapidly on a range of organic wastes, but also because there is already considerable expertise in countries such as Mali, Ghana and China. PROteINSECT provides us with the opportunity to work in partnership to exchange and build on existing expertise and improve methods suitable for both local and commercial scale production.

With 3 billion extra mouths to feed by 2050, the need to improve the efficient use of land for protein production and the effective utilisation of waste materials has never been greater. Flies, whilst considered traditionally as a household nuisance, have the potential to become a cost-effective novel source of protein for animal feed."

The PROteINSECT consortium consists of a diverse group of partners from Europe, Africa and Asia, ranging from feed industry multinationals, research centres and universities, to farmers. Fera in the UK is co-ordinating the project.

ENDS/ Notes follow

Notes for Editors:

1. **PROteINSECT** combines expertise in insect breeding, animal feed production and food safety together with life cycle analysis. The project will demonstrate the feasibility of the use of insect-derived proteins in animal feed through trials with fish, poultry and pigs. It will also evaluate quality and safety along the food chain from insect protein itself, to incorporation into feed and ultimately human consumption of insect-protein-reared livestock. The use of organic waste for insect rearing will be examined.

2. **The Food and Environment Research Agency (Fera)** is acting as co-ordinator of the PROteINSECT project. In addition Fera are lead scientists for WP3 (see below) and are also participating in WP1 (Insect Production methods) with focus on housefly (*Musca domestica*) rearing methodologies. Fera is an Executive Agency of the UK Government's Department for Environment, Food and Rural Affairs (Defra). Its remit is to provide robust evidence, rigorous analysis and expert professional advice to government, international organisations and the private sector, in order to support and develop a sustainable and secure food chain, a healthy natural environment, and to protect the global community from biological and chemical risks.

3. **WP3 Quality and safety**. PROteINSECT will carry out a comprehensive assessment of the quality and safety of insect derived extracts (both crude and processed) and their suitability for incorporation into animal and fish feed, ensuring that they comply with current regulations that limit undesirable substances in foodstuffs (EC Directive 2002/32). WP3 will study the nutritional composition (e.g. amino acids, fats), safety (chemical and biological), allergenicity and quality (e.g. taints) of insects and insect protein for dietary use. This WP will also identify other high value products such as vitamins, minerals and chitin as by-products of the protein production process.

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The activities leading to these results has received funding from the European Union Seventh Framework Programme (FP7/2007-2013) under grant agreement nr. 312084. This publication reflects the views only of the author, and the European Union cannot be held responsible for any use which may be made of the information contained therein.

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