

## Press release

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### **DBFZ project develops value chain based on insect biomass**

The steady population growth leads to an increasing demand for food and feed. Insect meal can make an important, alternative contribution to meeting the protein requirements of livestock farming and fish farming. Against this background, a project involving the DBFZ (German Biomass Research Centre) is investigating the development of a cost-optimised value-added chain for biobased olefins and complex nutrient media based on insect biomass for technical applications.

The research project "Competitive Insect Products (CIP)" of the DBFZ and Hermetia Baruth GmbH, funded by the Federal Ministry of Education and Research (BMBF), aims to further develop the implementation of high-quality, bio-based alternative products based on insect biomass and thus to reduce the use of important fossil resources and high-quality plant oils. On the basis of a low-cost nutrient substrate from waste streams (e.g. brewery residues, by-products of biofuel production, food production and other nitrogen-rich residues), high-quality proteins and fats are to be obtained from insects, which can be used as animal feed and in a variety of other ways. These include the production of biosurfactants for biodegradable detergents, raw materials for the cosmetics industry and high-quality lubricants in areas where mineral oil lubricants may not be used.

Black soldier flies (*Hermetia Illucens*) are used as beneficial insects in the process. They contain a high proportion of high-quality proteins and fats, are not carriers of diseases and are characterised by rapid growth and high product yields. Current challenges and those to be solved in the project, however, arise, among other things, in the provision of the required purity. Even small residues of animal proteins can lead to slight turbidity, which is not accepted by the users.

In the project the existing contacts to potential customers are to be expanded further and new partners are to be gained who are interested in marketing the process and the products (insect proteins and fats). For this purpose, customer needs from the chemical, food, animal feed, cosmetics and pharmaceutical industries will be analysed and specified. In addition, laboratory tests are planned for the development of an integrated plant concept. The aim is to support the integration of the insect production process into existing biogas plants. In this way, maximum added value can be achieved from the organic raw materials and the generation of waste products that are expensive to dispose of can be avoided. The process combination enables an optimization of the heat energy supply, which in turn leads to a higher energy efficiency of the entire insect production process. Another aim of the project is to remove the fermentation residues of ammonium nitrogen from the biogas plant. This results in a reduction of the nitrogen load on the soil. In a qualified feasibility study, a material and energy balance and an economic feasibility study of the integrated plant concept are to be drawn up.

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Further information is available at: [www.dbfz.de/en/competitive-insect-products-cip](http://www.dbfz.de/en/competitive-insect-products-cip)



Figure 1: Black soldier flies during mating. Picture: © Hermetia Baruth GmbH

### Smart Bioenergy – innovations for a sustainable future

The DBFZ (German biomass Research Centre) works as a central and independent thinker in the field of energy and material use of biomass on the question of how the limited available biomass resources can contribute to the existing and future energy system with sustainability and high efficiency. As part of the research the DBFZ identifies, develops, accompanies, evaluates and demonstrates the most promising fields of application for bioenergy and the especially positively outstanding examples together with partners from research, industry and public. With the scientific work of the DBFZ, the knowledge of the possibilities and limitations of energy and integrated material use of renewable raw materials in a biobased economy as a whole should be expanded and the outstanding position of the industrial location Germany in this sector permanently secured – [www.dbfz.de](http://www.dbfz.de).

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