WHAT?

The extraction process has an impact on the proteins’s nutritional values and functionalities such as solubility, emulsification, foaming, gelation, viscosity or water and fat-binding capacity.

Therefore, ZETADEC carried out several experimentations at different pH values, solvent/material ratio and extraction time in order to find the most suitable protocol for food and feed end-applications.

The protein fraction extracted has been incorporated in food and feed products such as meat alternatives for human consumption, pet food or aquafeed.

The experimentation showed that extraction at an alkaline pH of 12 is a suitable method resulting in a higher protein quality.

After purification by ultrafiltration, a purity of $87.6 \pm 2.4\%$ is achieved, and a good fat-binding capacity is obtained. Also, the essential amino acid index (EAAI) of the protein extracted is higher than of many other proteins from different insect species or plant proteins, with an index of 1.72, in the same range as soybean.

WHEN?

Despite the fact that using BSF protein sources presents major environmental advantages (more here), the uptake of this sustainable alternative faces legislative hurdles, with the European legislation on processed agricultural products (PAPs) still forbidding its commercialisation.

HOW?

Current results show that a high proportion of traditional proteins can be substituted by black soldier fly proteins without impacting the texture and taste of the end-products!

Contact

Lucian Miron, Process & Product Developer Scientist
lucian.miron@zetadec.com
www.zetadec.com

Want to learn more about insect fractionation?

Read the publication Exploring the chemical safety of fly larvae as a source for animal feed.
Discover our SCALIBUR project

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“Consumer acceptance is one of the biggest challenge for commercialisation of insects as a food source for human consumption.”

Lucian Miron, Process & Product Developer Scientist at ZETADEC