Comparing methods for extracting edible protein from mealworms

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Edible insects are emerging as an alternative protein source that has various benefits compared with conventional animal sources. New research published in the *Journal of Food Science* compared four

different methods for extracting protein from mealworms, which were designated by the European Union as the first insect to be used as a novel food source in 2015.

For the research, investigators compared alkali, salt, enzyme, and screw press methods for extracting mealworm protein. Alkali extraction enhanced protein content, enzyme treatment improved nutritional value and antioxidant capacity, and salt-assisted extraction exhibited anti-inflammatory effects. Enzyme and salt treatments produced protein concentrates with significant anti-hyperglycemic (or anti-diabetic) properties.

"Although the study primarily focused on mealworms, the results suggest that these extraction methods could be applicable to other types of edible insects as well. This broadens the potential for using non-conventional procedures like enzyme and screw press extractions," said corresponding author Yookyung Kim, Ph.D., of Korea University, in Seoul.

"These methods not only preserve a greater amount of bioactive compounds but also offer environmental and health benefits, making them suitable for sustainable protein production despite their lower level of refinement."

More information: Anti-inflammatory and anti-hyperglycemia effects of mealworm (Tenebrio molitor larvae) protein extracted by four methods: alkali, salt, enzyme, and screw press, *Journal of Food Science* (2024). DOI: 10.1111/1750-3841.17291

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