Asian bug, here’s the solution to visualize fruit damage

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Thanks to a study capable of optimizing and automating the recognition of damage caused by the brown marmorated stink bug on pears, Enrico Giovanella (University of Modena and Reggio Emilia) was awarded first prize in the first edition of the AgriFood Future Award in the

agricultural category.

The award was presented on May 9th in Salerno during Agrifood Future Research, a moment of in-depth analysis linked to the national AgriFood Future event promoted by Unioncamere in collaboration with the Chamber of Commerce of Salerno. In just two editions, this event has established itself as one of the main forums for discussing the future of agri-food systems.

The AgriFood Future event, under the scientific direction of Professor Alex Giordano, in 2024 and 2025, created a series of meetings between businesses, institutions, and trade associations to foster dialogue among technology, communities, and food production based on the concept of FoodSystem 5.0. A concrete stimulus to ensure that innovations do not guide our future, but that technological solutions ensure sustainable development from an environmental, social, and economic perspective.

With the AgriFood Future Award, the goal was to provide further incentive by rewarding, in collaboration with Image Line, those research works capable of proposing innovations aimed at bridging the gap between scientific production and the needs of the agri-food system. Concrete studies that address problems and propose solutions implementable by the industry.

Giovanella’s work, titled “Visualization of damage on pears caused by *Halyomorpha halys* through multivariate analysis of near-infrared hyperspectral images,” earned the top spot in the Agricultural category for making an important contribution to the visualization of damage not detectable by the naked eye on pears caused by stink bug stings, with the aim of implementing post-harvest sorting systems.

Problems Addressed

- Difficulty in early detection of damage from the brown marmorated stink bug.
- Economic loss due to the sale of damaged pears or their exclusion from the market.
- Lack of automated tools for post-harvest fruit sorting.

Proposed Solutions

- Use of near-infrared hyperspectral imaging to detect damage invisible to the naked eye.
- Development of an image analysis algorithm to classify healthy and damaged pears.
- Creation of a dataset to improve automatic classification and pear sorting.

Target Companies

- Fruit storage and distribution cooperatives and companies.
- Fruit processing industries.
- Producers of post-harvest quality control technologies.

Read the full article on Enrico Giovannella’s work on Agronotizie.

Fonte: https://www.ruralhack.org/en/stink-bug-damage-detection-pears/