Agricultural Systems

PHOTO: Pennsylvania Agricultural Experiment Station

Land-grant universities offer solutions for pest management

Land-grant university pest management programs promote sustainable agriculture. In particular, research-based education helps farmers use pesticides more effectively and safely, improving pest control efficiency and reducing human and environmental exposure to chemicals that can pose health risks. Overall, these practices foster more sustainable farming, leading to healthier ecosystems and improved long-term agricultural productivity.

Here are a few examples of that work:

- **Delaware** Extension specialists provided integrate pest management (IPM) training sessions to fulfill the growing educational needs within the agronomic consulting sector and provide continuing education credits to those seeking to maintain their pesticide licenses and Certified Crop Advisor credentials. More than 83% of the consultants confirmed adoption of new IPM methods, and 75% indicated learning new methods for pest threshold calculations after the training. *University of Delaware Extension; Smith-Lever. See full statement.*
- **Pennsylvania** researchers found that ladybugs' natural odors reduced the amount of time aphids consumed plant sap and dropped their population numbers by 25%. The scent's components have the potential for commercial production, giving it promising potential as an alternative for sustainable pest management in crops. *Pennsylvania Agricultural Experiment Station; Hatch Multistate. See full statement.*
- Cotton is highly vulnerable to a variety of insect pests, weeds and diseases. It needs to be scouted for pests on a weekly basis, but 49% of the cotton acreage is not routinely monitored. In **Texas**, Extension

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The National Land-grant Impacts Database (NIDB) documents the individual and collective impacts of the national Land-grant University System of joint research, education and Extension. Much of this work is supported by capacity and competitive funds through the USDA's National Institute of Food and Agriculture.

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expanded training in scouting for pests and beneficial insects and provided information on action thresholds and proper pesticide use to seven Texas counties representing 453,000 acres of cotton. In 2024, the economic benefit from the information learned by and adopted from participants was more than $6 million. *Texas A&M AgriLife Extension; Smith-Lever, NIFA-IPM. See full statement.*

- Root rot is a devastating, soilborne disease threatening the viability of sustainable lentil production in **Montana**, which totals 115,000 acres with a production value of $50 million. Researchers are cooperating with crop consultants to educate growers on root-rot management strategies to ensure the longevity of the lentil crop industry and reduce the impact of this pest. *Montana Agricultural Experiment Station; Hatch. See full statement.*
- **Delaware** Extension professionals maintain a series of orchards traps. They alert producers and stakeholders on trap capture and management recommendations through phone calls, text messages and weekly crop update messages. Crop consultants assessed the value of the insect trapping activity to their growers from $1 to $12 per acre over several thousand acres. *University of Delaware Extension; Smith-Lever. See full statement.*