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Agricultural Systems

Using Drones for Sustainable Agricultural Production

Research by multiple land-grant universities has shown drones to be a timesaving, less-labor-intensive tool to incorporate into agricultural systems for sustainable practices. Through workshops and other outreach activities, producers have received educational information on drones including potential uses for agricultural production, laws and regulations, software and costs.

Successful examples include:

- In **Tennessee**, drones were shown to have significant potential for sustainable agricultural systems, providing \$12 per acre returns for corn and up to \$3 per acre for soybean and wheat crops. Workshops were conducted from 2019-2022 reaching 250 farmers providing hands-on drone training as well as comprehensive discussion of drone laws and regulations.
- Hardware and software were developed in **Virginia** for calibrating and using drones as well as detailed protocols. Their work helped identify the most reliable, cost-effective and user-friendly drone platforms and sensors for monitoring and managing stressors in agriculture and natural resources.
- In **Georgia**, drones were identified as a tool for agricultural damage assessments. More than 2 million acres of planted cropland are now under Extension agents who are trained in agricultural damage assessment using drones.
- In **Ohio**, researchers are using drones to more quickly diagnose soybean defoliation by capturing aerial images and using software to analyze the data.

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