

Drones Giving Produce Growers a New Perspective on Crop Scouting

By [UNH Today](#)

New research at the [University of New Hampshire](#) is assessing whether drones could be a tool for small and medium-sized New England farms to identify plant disease pressure earlier, more accurately and at a lower cost.

The research represents a collaboration among [New Hampshire Agricultural Experiment Station](#) scientists, operations staff at UNH Farm Services, UNH Cooperative Extension field specialists, and a commercial crop advisor, who initially proposed the idea based on his observations about challenges faced by northern New England dairy farmers and the research expertise at the [UNH College of Life Sciences and Agriculture](#).

Harnessing Drone Technology for Crop Scouting and Monitoring

Using drones, or Unpiloted Aerial Vehicles (UAVs), equipped with multispectral cameras, the team monitored for early signs of disease in test plots that contain both BMR and non-BMR corn varieties. The study tested the possibility of detecting fungal diseases — such as the [Northern corn leaf blight](#) (NCLB) — in brown mid-rib (BMR) corn varieties potentially weeks before it becomes visible to the naked eye.

“When harvest time comes, often the BMR corn is brown from top to

bottom — it doesn't have the disease resistance of non-BMR corn, and that's a big issue for farmers," explains Tom Beaudry, a Commercial Crop Advisor who works with farmers across New Hampshire as well as in Massachusetts and Vermont.

"From my perspective, drones provide a completely new way to look at a cornfield," Beaudry adds. "I'm used to being on the ground, but seeing the fields from the air allows us to spot problems much earlier—sometimes before they're even visible on the plant."

Making Technology Accessible to Small Farms

Many existing UAV systems for agriculture are prohibitively expensive for small farms, often costing tens of thousands of dollars. A primary goal of this multi-year study is to determine how to lower these costs while ensuring the technology remains effective. According to Beaudry, drones are currently used on larger Midwest farms for disease and weed scouting purposes, both by individual farms and crop advising companies, in part because the costs can be spread over more acres.

The research team believes that if they can show the effectiveness of using lower-cost drones that can provide technically accessible data could significantly help small and medium-sized New England farmers more sustainably manage their crops. Early disease detection can help farmers apply treatments sooner, optimize application quantities, adjust harvest schedules and make better crop management decisions, ultimately reducing yield losses and improving economic returns and food-production resiliency.

"Scouting crops has always been important but having a perspective

from a few hundred feet up allows you to see patterns in the field that you might otherwise miss,” says [Carl Majewski](#), a UNH Extension field specialist and member of the research group. “Drones could help farmers identify issues with crop health, soil health, or weed infestations, and it would be easier to see changes over time.”

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