

## Ontario Corn Producer Magazine

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## Research roundup



### Find out what is new in the world of research

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**Research Roundup is provided by members of SPARK (Students Promoting Awareness of Research Knowledge) at the University of Guelph's Office of Research. For more information, contact a spark writer at 519-824-4120, ext. 52667.**

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#### **Baute Bug Blog helps growers keep pests at bay** Joey Sabljic

Unwanted summer guests such as the western bean cutworm and soybean aphids don't call ahead to say they're coming. Instead, they strike quickly and brutally – often before crucial information about these pests can be distributed to producers on time.

That's why Tracey Baute, a field crop entomologist with the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA), started the Baute Bug Blog. Her goal is to give crop growers timely, up-to-date information about the latest pest issues affecting Ontario field crops.

The blog, or web log, is found on the internet at [bautebugblog.com](http://bautebugblog.com). Each blog entry is based on reports and observations made by researchers from the OMAFRA field crop team, University of Guelph, private consultants, agriculture representatives and producers in Ontario and neighbouring states. The blog distributes background information about the pests, where they've been sighted, their impact on specific crops and how they can be managed.

"Hopefully, the blog will help build better information networks between researchers, extension, consultants and producers," says Baute.

The blog can be found at <http://bautebugblog.com>

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#### **Putting fertilizer in its place** Katelyn Peer

Dry and liquid starter fertilizers have pros and cons when it comes to planting. Liquid can be more expensive, but it's easier to handle than dry. Outfitting a large planter with a liquid fertilizer system is relatively simple compared to a dry system but there are practical limitations to the amount of nitrogen, phosphorous or potassium that can be applied with liquid fertilizer.

Now, OMAFRA corn specialist Greg Stewart is trying to combine the best of both worlds. He's modified a research planter to use a small dry fertilizer system that's centrally filled, but can blow fertilizer either in-furrow or in bands.

"We would like to get the benefits of dry fertilizer, namely cost of product, and be able to use it on large planters without necessarily having to invest in an expensive fertilizer cart with air delivery," he says.

Stewart's research compares a number of dry and liquid options and placement strategies across a range of soil test levels. Results of the dry-liquid system comparisons will be available in the winter.

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#### **Glowing bacteria illuminate nitrogen management strategy** Natalie Osborne

Specially engineered bacteria could help producers determine how much nitrogen fertilizer is needed to maximize their crop yield.

University of Guelph researchers have developed a new way to test soil nitrogen levels using what's called biosensor bacteria. These organisms emit fluorescent light, thanks to the presence of firefly and jellyfish DNA segments.

When they're exposed to nitrogen in a soil sample, they glow different colours.

Dr. Manish Raizada and graduate student Michael Tessaro, Department of Plant Agriculture, are using technology called a luminometer and a fluorescence plate reader to measure the soil's nitrogen content based on the bacteria's luminescence.

Raizada thinks this could ultimately lead to a cost-effective, quick, easy and accurate approach for soil nitrogen testing -- for under \$1 per sample.

"In the future, we'd like to make this a commercial service for Ontario farmers so they can do many more samples at different times at a reasonable cost," says Raizada.

Funding is provided by the Ontario Ministry of Agriculture, Food and Rural Affairs.

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