MANAGE RESISTANCE Now

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CASE STUDY

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Agronomist urges proactive resistance management for Alberta sugar beet growers

Glyphosate is a critical tool for Alberta's sugar beet growers. When glyphosate-tolerant sugar beets were introduced in 2009, the cropping system revolutionized an industry that was struggling to control weeds.

"The first year we had 95 percent adoption. That gives you a sense for how difficult weed control was in sugar beets prior to Roundup Ready®," says Peter Regitnig, a research agronomist for more than 30 years with the Lantic Inc. sugar beet factory in Taber. Weed control was an intense process – applying post-emergent products at the right crop staging and in the right weather conditions. "The growers were spraying all the time in May and June to keep the weeds under control."

Today, 100 percent of the 28,000-acre high-value crop is glyphosate tolerant. Not surprisingly, the industry has zero tolerance when it comes to herbicide-resistant weeds.

"We're obviously very dependent on Roundup® right now. It's critical to our industry. We definitely want to keep it working for our whole spectrum of weeds," says Regitnig adding "we would certainly lose a significant number of growers if we had to go back to a different weed control system." He ponders if the industry even could go back.

Lantic has been proactively talking to its growers about herbicide resistance since 2013. According to Regitnig, they have not seen significant problems in Alberta sugar beet fields yet. "A couple of years ago, we saw a few glyphosate-resistant kochia plants and they were immediately rogued. This year, a couple fields had more of an issue and the growers went at it quite aggressively with hand labour," he reports. "We're at a point where it's still controllable, which is why we're preaching vigilance to our growers."

Sugar beet growers are encouraged to scout their fields for glyphosate-resistant kochia.

Four-year crop rotation

Regitnig urges sugar beet growers to get vigilant through a number of best management practices, starting with crop rotation. Farmers who are contracted to grow sugar beets for Lantic commit to a mandatory four-year crop rotation. It's a practice put in place years ago for control of sugar beet cyst nematode, but it is now "helping us a lot with things like resistant weeds." Crop rotation allows growers to rotate their herbicides and provides other agronomic benefits.

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Lantic growers typically include two grain crops and two high-value crops like potatoes or edible beans in their rotation. Unlike some other sugar beet growing regions in North America, Alberta growers generally only grow one glyphosate-tolerant crop every four years.

"The fact there is only one Roundup Ready crop in a four-year rotation has helped with our message to diversify weed management strategies. We tell growers: 'You need to manage glyphosate-resistant kochia in your three other crops where you can control it with products that aren't glyphosate,'" says Regitnig.

Scout to manage escapes

Scouting is another practice encouraged by Regitnig to help manage resistance. "Kochia is a tumbling weed; it's going to blow into your field from somewhere else, so we encourage guys to look at perimeter weed management," he says.

Regitnig has a zero-tolerance message for managing herbicide-resistant weed escapes. "There are a lot of seeds on one plant. You don't want to leave a few plants in the field or you will certainly have a lot bigger problem in future years. If you can mow it or pull it, you can probably stem the tide as far as seeds being set."

Tillage is another an option to help manage resistance. "If growers can do some overall tillage early, prior to seeding their beets, it will certainly clean up some of the early-emerging stuff," he says. Beet growers who find resistant weeds can inter-row cultivate to remove them anywhere from the two-leaf stage up to a ten-leaf beet.

Use full rates for effective control

Regitnig also recommends using full rates of glyphosate to effectively control weeds and help prevent resistance. "We encourage growers to use the upper rate that's labeled for sugar beets rather than cut rates and potentially speed up resistance," he says.

For more information, visit **ManageResistanceNow.ca**

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