

Wild oat resistance persists

By Barb Glen



Wild oat control in cereals is especially critical because it can significantly diminish yields. File photo Wild and free: that's beginning to describe wild oats rather well.

The “wild” is a given, right in the name, and the “free” is embodied in the weeds’ freedom from in-crop herbicide harm.

“We have wild oat seed lots that can have blanket resistance to both Group 1s and Group 2s, meaning they’re resistant to all of the Group 1 and 2 herbicides, which essentially eliminates all of our in-crop options,” said weed ecology research scientist Charles Geddes.

Wild oat control in cereals is especially critical because it can significantly diminish yields.

The Agriculture Canada researcher said control of the competitive weeds will increasingly depend on cultural tools and crop management rather than herbicides.

That doesn’t mean wild oats are immune to chemical harm.

“What we have left is either pre-emergence triallate or pre-emergence triallate plus trifluralin, but those are ... more variable (depending) on environmental conditions,” he said.

“So that’s when cultural management comes into play. We need to ensure that we have a competitive crop to increase the efficacy of those herbicides.”

Though only one brave farmer at the June 20 Farming Smarter field school admitted to having herbicide-resistant wild oats, studies indicate the problem is widespread on the Prairies.

The most recent Alberta figures are not yet available but Geddes said about 60 percent of wild oats in Saskatchewan fields are resistant to Group 1 herbicides. In Manitoba, it’s 80 percent.

For Group 2 herbicides, 32 percent of Saskatchewan fields with wild oats are resistant, and 43 percent in Manitoba.

Then there’s cross-resistance to both groups: 25 percent in Saskatchewan and 42 percent in Manitoba. As well, Geddes said some resistance to triallate has started to appear in certain wild oat populations.

“We have found, in Manitoba, populations that have resistance to Groups 1, 2, 8, 14 and 15,” he said.

“It’s a very difficult problem to manage when you have it and it almost certainly results in a shift in your cropping systems and your cropping practices to manage this weed when you have cross resistance.”

Wild oats must be managed in cereals or farmers risk major yield losses. The degree depends on whether the wild oats emerge before or after the crop or in conjunction with it.

As a general guideline, he said 10 wild oat plants per sq. metre in spring wheat can result in a three to 10 percent yield loss: three percent if the wild oats emerge after the crop, five or six percent if they emerge at the same time, and 10 percent or more if they emerge before the wheat.

To demonstrate the extent of the problem, Geddes showed 18 trays of wild oats, each containing a susceptible and a resistant population of wild oats. One herbicide from each of the chemical classes was used on the samples.

Only a few of the samples showed obvious effects from herbicide treatment, indicating wild oats may still be susceptible to some Group 1s.

Geddes said his tests showed triallate and triallate with trifluralin continue to be effective.

“Your post-emergence herbicides are gone for cereals. That’s when your cultural management options really come into play.”

Primary among those is a higher seeding rate for cereals and timing so the crop emerges before the wild oats.

“There are quite a few cultural tools in addition to chemicals that we can use to help shift the competitive balance in favour of the crop rather than our wild oats,” said Geddes.