

Herbicide resistant kochia here to stay

Published Dec. 20, 2018

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A survey found last year that 50 percent of kochia in southern Alberta was resistant to glyphosate. / Michael Raine photo

Southern Alberta farmers are told scientists have no solutions for resistance to ALS inhibitors, dicamba and glyphosate

Weed scientist and University of Alberta professor Linda Hall brought no glad pre-Christmas tidings for farmers Dec. 12 when she spoke at the Farming Smarter conference.

There was no way to sugar coat the fact that kochia in southern Alberta is now resistant to groups 2, 4 and 9 herbicides — ALS inhibitors, dicamba and glyphosate.

“This really limits the number of effective products that any grower can use to control the kochia,” said Hall.

“I’ve got to tell you we don’t have a solution for herbicide resistant kochia. As scientists, we don’t

have a solution to present to you. We expect resistance is going to get worse. I told you, no Christmas presents.”

Hall said a weed survey in 2012 showed about five percent of kochia was resistant to glyphosate. By 2017, it was 50 percent.

“You should not expect glyphosate alone to be controlling kochia in your fields,” she said.

However, other options are limited, given survey findings of resistance to another two herbicide groups. Three-way resistance was found in about 10 percent of the fields tested, and researchers know that percentage will increase over time, Hall said.

Work is underway on biological and mechanical solutions, but there are no new herbicides on the horizon.

“Quite frankly, there are no rays of hope. We’re kind of out of ideas. It’s a hard thing to say as a researcher.”

There are still several options for resistant kochia control pre-seeding, including a number of Group 14 herbicides, although it depends on the crop being planted.

In crop, there are also a few chemical control options for three-way resistant kochia, but the list is growing smaller.

The goal now is to keep the problem from getting bigger but because kochia is a tumbleweed, “we literally have resistance rolling across the fields and connecting our neighbours.”

Growers, private companies, municipalities and those in charge of public lands would all have to work together to prevent resistant kochia from spreading but that would be a huge task that no one is willing to undertake.

“No one is doing that and I’m not even sure whose responsibility it is,” Hall said in a later interview.

Kochia is a competitive and economically damaging weed that can drastically reduce crop yields. Its tendency to emerge early in the growing season gives it a head start. It is drought, heat and saline tolerant and able to outcross.

As well, it produces large amounts of seeds, but they are often green at crop harvest time and thus combine-attached seed destructors are not effective in pulverizing them.

Russian thistle shares many of those characteristics, said Hall, including its ability to tumble. That weed is already resistant to Group 2 herbicides.

Glyphosate resistant Russian thistle was found in the United States in 2015, and although it exists in Montana and Oregon, it has not yet been found in Alberta.

“Do be on the lookout,” said Hall.

“It is something that we’re expecting to see just as a natural course of further selection.”

The 2017 weed survey involved 305 randomly predetermined sites in 16 Alberta counties and municipal districts, post-harvest, in September and October. Glyphosate resistant kochia was found in 15 of the 16 municipalities. Kochia resistant to dicamba was found in 24 of the 305 sites and three-way resistance in 31 of the sites.