The Western Producer

Sniffer dogs could root out clubroot

By Barb Glen
Published: August 1, 2019

If dogs can detect the presence of clubroot galls through sniffing, it could help farmers control a developing outbreak or manage fields differently to mitigate the problem. | Barb Glen photo

When things are hiding, dogs can sniff them out. People, drugs, even certain types of cancer are evident to dogs through their superior olfactory systems capable of detecting odours as low as one to two parts per trillion.

So why not get them to sniff out clubroot, a production-limiting disease in canola and other crops that is hiding below ground and slowly spreading across the Prairies?

That question occurred to Michael Harding, research scientist and crop pathologist with Alberta Agriculture.

Now there is research under way to find out.

With $35,000 in funding obtained through the Farming Smarter applied research group via Alberta's portion of the Canadian Agricultural Partnership, three dogs are being trained to identify clubroot and alert handlers to its presence.

The trainer is Bill Grimmer, an internationally known dog handler who has developed dogs for service to the disabled, police, rescue, explosives identification and cadaver recovery.

The dogs are being trained in New Brunswick and this fall, once canola has been harvested, the dogs and trainers plan to visit Alberta.

“As soon as we start getting some canola fields that are swathed, that we know we have clubroot, the window will be open for the guys from New Brunswick to bring the dogs out, so probably this August or September they’ll make a trip out here and we’ll do field testing,” said Harding.

If successful, the dogs could potentially be transferred and conscripted as canine clubroot cops.

Clubroot is hard to detect in canola, at least above ground. Sickly looking plants, patchy stands and odd flowering patterns could be caused by a number of conditions. Pulling up plants and checking for the presence of galls on the roots is the only way to confirm clubroot, and that can mean a time-consuming process of destruction and examination.

If dogs can detect the presence of clubroot galls through sniffing, it could help farmers control a developing outbreak or manage fields differently to mitigate the problem.

Clubroot, which is soil-borne, has a firm foothold in Alberta fields surrounding Edmonton and is gradually spreading outward. Less severe infestations have also been found in Saskatchewan and Manitoba.

Southern Alberta, with its higher pH soils and more varied crop rotations made possible through irrigation, has largely escaped clubroot, with the exception of a few fields in the County of Newell near Brooks.

But farmers can’t be complacent, said Harding.

“Assume clubroot will come here,” he said in Lethbridge. “There will be additional fields confirmed this year in southern Alberta.”

Early detection could help growers in the region to quickly respond. For others, canine clubroot cops might be less useful.

“For southern Alberta, in particular, where we’re still sort of on the watch for it… it might help on the prevention side a little bit more,” said Farming Smarter general manager Ken Coles.

Next steps will depend on how field tests go this fall with the dogs.

“We don’t know who’s going to want this, if anyone, but this is just the proof of concept stage,” said Harding.

“If it does work, then there will have to be additional funding for them to do the transition because somebody’s going to have to learn to work with the dog. And we’re told that there’s a lot of nuance to that because, in a field situation, especially if there’s wind, the dog could be smelling the clubroot and notifying but the clubroot is actually 10 metres away.

“There’s ways for the handler to know if they’re actually smelling it right under them or whether they’re picking it up in the air. So that’s one example of some of the details or nuances of actually transitioning this dog to be a working dog in Alberta or Saskatchewan or Manitoba or wherever someone might want to utilize it.”