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Legal options limited

For farm owners who have planted swedes and sharemilkers who have lost cows as a result, legal action, if any, could be problematic.

"For any legal action to occur first it has to be found who is responsible and the second question is what damages by the farm owner and the sharemilker are that can be claimed," Ian Blackman of BlackmanSpargo Rural and Commercial Law in Rotorua said.

"It is too soon to answer these questions.

"Both parties have been affected. The farm owners have planted the swedes in good faith, not with any intention to harm their sharemilker's animals," he said.

"It is unlikely that the farm owners will be found negligent."

Blackman added sharemilking contracts would probably not include clauses that covered the situation.

"We may see them added now because this has happened but we can't include every possible contingency. The agreements are big enough now."

He said farmers and sharemilkers should record everything that has happened, including dates, and take photos, in case legal action was possible in the future.

"We may see this in the courts in two or three years' time which is a long time for people to remember what happened."

AWS Legal's Fraser McKenzie said the Invercargill law firm was expecting the phone to ring.

"Farmers and sharemilkers should be collating as accurately as possible what has happened including autopsy reports and results of testing of their swedes," McKenzie said.

"You don't necessarily have to have culpability for liability."

The firm has been involved in cases where animals had died at graziers for other reasons in past years.

"Whether it was neglect or not, the animals in these cases were in the care of the grazier."

Southland Federated Farmers sharemilker chairman Don Moore said sharemilking agreements he had seen did not cover the situation.

"This is something quite different, we haven't had anything happen like this before."

Moore, a 50:50 sharemilker near Gore, said sharemilkers were usually involved in making decisions about what winter crops to grow.

"There may be problems with contracts which state a minimum number of cows must be milked on the farm. If there have been enough losses to affect that, it could become a problem especially if there isn't enough money to buy more cows," he said.

"Everyone needs to keep talking and be proactive. Make a plan, find out all the information you can and talk to people."

Swedes suspect in cow deaths

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With more than an 200 cows dead or left with liver and kidney damage, and no definitive answer about the cause, farmers are nervous about what to plant over coming weeks for next winter's crop.

A common factor with almost all the cases reported by late September has been the herbicide-tolerant swede variety HT Swedes. Preliminary results from DairyNZ surveys put the number of suspected cow deaths linked to the crop at between 200 and 300 animals.

PGG Wrightson Seeds, the supplier of the cultivar, is investigating and a working party led by DairyNZ that includes vets and scientists is also looking for answers.

The main suspect is glucosinolates, naturally occurring compounds found in almost all brassicas as well as other plants, including those eaten by humans.

Lincoln University veterinarian and ruminant nutrition specialist Dr Jim Gibbs said glucosinolates had not yet been identified as the primary or only cause of the deaths although they appeared the most likely.

However, there was no assay to test swede samples for the range of glucosinolates found in New Zealand, and even if a test was rapidly developed, previous work has shown levels fluctuated significantly with time, growth phases, and even sampling protocols, making conclusions from this season even more difficult.

"It is a very wide family of substances and at the moment no one can be definite on the specific glucosinolate causing the problems, if that is the cause. At this stage it is only guessing."

He said cases had been documented of

summer turnips and other brassicas in southern Australia and the North Island causing similar symptoms in cattle, especially after a prolonged dry period then a wet spell.

"The weather does seem to affect levels, but also the plant itself, the soil types, the environment, the growth phase, how it's fed – it's a fairly complex package."

Gibbs said cows might have significant, but undiagnosed, liver damage which could cause further problems as they reached peak milk and at mating.

Herbicide-tolerant crops were heralded as a breakthrough in Southland when they became commercially available about four years ago because they helped overcome significant weed issues for crops in the region (*Dairy Exporter* November 2012, p70).

Notably there have also been farmers in Southland and elsewhere in the country who have fed HT Swedes with no problems this year.

DairyNZ response leader Craig McBeth said weather might have been the cause.

"The swede plant has produced a greater level of leaf and the bulb needs to be frosted to increase sugar levels to make it more palatable to the animals and the hypothesis is that animals have eaten a higher amount of leaf in their diet relative to the bulb and the glucosinolates are in the leaf," McBeth said.

New Zealand Veterinary Association member Dr Mark Bryan said vets first noticed unusual signs of liver disease in autopsies of cows on swedes in July.

"We then started to go back and look at unusual cases in winter prior to that, and work forward collecting more bloods and post mortem samples to complete the picture. We have been finding significant liver and sometimes kidney damage in many cases."

Symptoms include photosensitivity, weight loss, and ill thrift.

DairyNZ has released advice for farmers which is available on its website.

Farmers experiencing stress were directed to the Rural Support Trust (phone 0800 787 254).

Where they came from

The HT (herbicide-tolerant) trait used in the Cleancrop Brassica system, which includes HT Swedes, HT Rape, HT Bulb Turnip, and HT Leafy Turnip, was discovered by the New Zealand Institute for Plant and Food Research in 1992-93 using seed mutagenesis. The plants are not genetically engineered but use genetic mutations found in nature which have been identified and reproduced.

The trait was first found in rapid cycle rape and then crossed using traditional breeding methods to a range of forage brassicas by the Forage Innovations plant breeding team, a joint-venture company owned by PGG Wrightson Seeds and Plant and Food Research.

The HT brassicas can be sprayed with Sulfonylurea herbicides which are applied at low rates (20g/ha) and degrade quickly. They do not accumulate in foods, soils, plants, or animals. Little to no detectable residue in crops and livestock can be found following use.

The Cleancrop Brassica System is recommended for land which has problems with wild turnip, spurrey (also called yarr), shepherd's purse, thistles, fathen, chickweed, and other broadleaf weeds.

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