



Dear Rochelle

Dear Rochelle,

I am an organic rancher, in the Cache Creek area, and my hayfields have been devoured by grasshoppers, deer, and other various creatures these last few years. I am putting up deer fences this coming season, which will take care of the deer and some other four-legged beasts, but those hoppers seem to have me beat. Can you help me?

Hoppered in Cache Creek

Dear Hoppered,

One thing I have experienced over the years is that it is nearly impossible to organically control grasshoppers once they have reached adulthood — and especially once they start swarming. I have learned that the best time to get a handle on them, if you have a “plague”, is during the 40 to 60 days it takes a nymph (a young grasshopper) to mature into an adult.

But before I tell you how to ‘deal’ with them, I have to point out that not all grasshopper species are pests, even though sometimes just seeing a large number of grasshoppers is enough to make one sick with fear. In fact, in BC, only two are considered economic threats; the clear-winged grasshopper, *Camnula pellucida*, and the migratory grasshopper, *Melanoplus sanguinipes*. There is some good BC grasshopper species identification information at <http://www.agf.gov.bc.ca/cropprot/grasshopper.htm>.

Most grasshopper species over-winter as eggs, which are laid in clusters in late summer and early fall, then hatch in spring, when soil temperatures warm up. Your hay field is the perfect haven for them as grasshoppers love un-tilled perennial fields or weedy, undisturbed areas like roadside ditches, and fence rows. Warm, dry spring weather favours grasshopper development, while an early spring followed by cloudy, damp weather encourages diseases that set them back in their tracks. Worse, a long, hot summer ensures a plentiful food supply and encourages early maturity of grasshoppers

and a long egg-laying period. On the other hand, a cool summer and early fall slows down grasshopper maturity and reduces time for laying eggs.

I have also noticed that grasshoppers seem to be attracted to dry, low organic matter soil sites. Whenever I irrigated and improved the soil quality the grasshoppers just seemed to disappear. Of course, introducing any type of poultry will help to reduce a grasshopper problem and will improve that soil fertility issue at the same time.

Also some control can be achieved with tillage as it discourages the females from laying eggs in the soil and destroys eggs by exposing them to the weather, predators, and parasites. Spring tillage also reduces food sources for newly hatched nymphs, while fall tilling can reduce over-wintering sites, but leaves areas susceptible to erosion, and may make it impossible to sustain soil fertility if done every year. Other approaches include trap cropping early in the season before they are mobile and then dealing with the smaller area.

Interestingly enough BCMAL is currently planning a project to demonstrate the use of *Nosema locustae* (NoloBait), a naturally occurring protozoan and *Metarhizium anisopliae*, a soil fungus for grasshopper management in BC’s interior in 2008. Neither product is currently registered in Canada. The ministry is hopeful that these two biological control tools will become available to Canadian growers, as in principle these would satisfy organic standards. I have also read about a few interesting mechanical contraptions that have been built over the years by innovative farmers such as the “Hopper Whopper” and the “Hopper Dozer” but none seem to be commercially available.

Hope I have given you some idea on how to deal with your hopper problem. To read my other advice columns visit <http://www.certifiedorganic.bc.ca/contact/extension.php>

Rochelle