

Gerbil control for crops

By Dr Gerhard H Verdoorn, CropLife South Africa

Crop farming has developed tremendously over the past two decades, largely due to new technology such as genetically modified crops, no-till practices and improved pest control. Unfortunately, nature is hampering progress in its own unique way. As many crop producers have discovered, there are some cons to no-till farming, one of them being an explosion in the gerbil population.

These little rodents, also known as the *nagmuis* or *springhaasrot*, can easily become a dangerous – and costly – pest

in both the summer and winter rainfall areas, where their impact can result in seed having to be planted three times over. Given our continuously rising input costs, no producer can allow a single pest to make the production season even more costly.

Gerbils are approximately the same size as a common roof rat, and has long hind legs. They are grey in colour and live in colonies of up to 40 000/ha, where they burrow a network of holes and tunnels in the soil. Their manure resembles tiny torpedoes in the grass.

They survive dry periods in

headlands, living off natural food. However, once crops start germinating, these little creatures move in on the fields, tackling the germinating plants. Gerbils can destroy as much as 30% of a planting in just a few days.

Investigations indicate that gerbils usually strike when the grain plant is in the two-leaf stage. The plant is cut neatly above the seed and the seed is then either eaten or taken to their burrows for a family meal.

Combating an outbreak

How do you control such an outbreak? Firstly, every farmer should properly inspect his fields, including the headlands, before planting. Any group of holes of approximately 50mm in diameter, must be regarded as a tell-tale sign of gerbil infestation. The producer should then start with control treatment.

If the colonies are small, owls and raptors can be used for control. Perches of around 2,4m in height must be erected in the fields and headlands, from where raptors and owls can hunt gerbils. It is advisable to scatter a few handfuls of crushed grain around the perches. Gerbils will soon discover the food and lure owls and raptors to the perches. Colonies established in fallow fields must be destroyed through deep tilling, regardless of whether they are fields under normal tilling or no-till.

If rodenticides are used, perches for owls and raptors must not be erected. Various anti-coagulants are registered for gerbil control, but it should be handled with great care to prevent secondary poisoning.

Using bait

Wax block bait must be placed in bait stations. Farmers can make their own bait stations by cutting 75mm plastic piping into 500mm lengths. Wax blocks are the



Gerbils that go unmanaged can cause extensive damage to crops. (Photographs: www.agric.wa.gov.au)



A dead gerbil that cannot cause damage.

most effective method, because they can be strung on a wire loop inside the pipe, preventing the gerbils from removing it.

Zinc phosphide and aluminium phosphide are also registered for gerbil control. After it was discovered through experiments that gerbils do not like hard grain in zinc phosphide bait, the problem was solved by soaking grain kernels in water until they germinate. They are then dried and treated with cooking oil and zinc phosphide, according to label instructions. As a safety measure, the bait must also be placed inside pipes.

Farmers preparing bait with zinc phosphide must take note: It is an extremely poisonous chemical compound and if it is inhaled it can cause severe poisoning. Preparation should be done in a completely windless area and the handler should wear latex gloves and a face mask.

Effective control

Aluminium phosphide is only cost-effective in controlling smaller numbers of gerbils. It is labour-intensive, but can be very efficient if applied correctly. The soil must not be too dry, because moisture is required to activate the tablets. Firstly, close all burrows and place the tablets in the newly opened burrows the next day.

When the tablet is put into the burrow, it must be closed to allow the released phosphine gas to do its job. The advantage of zinc phosphide and aluminium phosphide is that the phosphine gas quickly kills the gerbils, after which it swiftly dissolves into phosphoric acid. The risk of secondary poisoning of raptors and other animals is therefore quite small.

Rodenticides must be used in a pulsed programme. This entails applying rodenticides for short periods, e.g. two



Gerbils live in colonies of up to 40 000/ha, where they burrow a network of holes and tunnels in the soil. (Photographs: www.agric.wa.gov.au)



Perches for owls and raptors from where they can hunt gerbils.

weeks. This must be followed by two weeks off, then another short application period.

The reason for pulsed application is to prevent the animals from becoming wary of rodenticides. When animals start dying from ingesting rodenticides, they can emit alarm signals in the form of pheromones that can warn those not affected against the danger of the bait.

More clever ideas

Gerbil control can also include other clever plans. Most fields have an odd piece of land where a specific crop can be planted to attract gerbils. The idea is that the attracting crop must

germinate along with the cash crop, so that gerbils can find food there rather than in the production crop field.

Surplus seed can usually be purchased inexpensively. The seed should then be planted in a dense stand of about 1-2m wide around the fields. It also makes sense to erect owl perches in such a field. Once gerbils start feeding on the plants, the owls will be present to reduce their numbers.

Water traps are also effective. The tops of empty drums are cut open and the drums are planted level with the ground. They are then filled one-third with water and some grain or sunflower seeds are added. At night when gerbils are active, they will smell the food and end up drowning when they fall into the drums as they go after the seed.

Raptors and owls are invaluable

All these methods must be integrated to control gerbils effectively. Raptors and owls are invaluable in gerbil control. Under no circumstances should acute poison such as aldicarb and carbofuran be used illegally. It will kill everything that eats the gerbils. If a large enough population of owls has been established, chances are that they will keep the gerbil population in check. 🦉

For a comprehensive gerbil management plan, contact Dr Gerhard H Verdoorn of CropLife South Africa at neshier@tiscali.co.za or 082 446 8946.