

2002 Pocket Gopher Control Project

The Northern Pocket Gopher (*Thomomys talpoides*) is a medium sized rodent, with large, external, fur-lined cheek pouches, stout forefeet, with large claws for digging, small but functional eyes, small ears, and ever-growing incisors. As a consequence of using their incisors for digging, their lips have been modified to close behind the incisors to exclude soil from the mouth during excavation. Their coats range in colour from greyish to dark browns and blacks, with a pinkish sparsely haired naked tail. They do not hibernate, and show no preference for day or night. They are very rarely seen above ground.

Manitoba gophers range in size from 218 - 245 cm in total length, and weight 116 - 203 g, with the males being larger than the females. The litter size varies from 4 - 7 with an average size of 4.4, with no evidence of more than one litter per year.

The pocket gopher is commonly referred to as a 'mole' by many agricultural producers, and is not to be confused with a number of other small mammals have been given the common name 'gopher'. The three mammals most commonly called a 'gopher' include the Richardson ground squirrel (*Citellus richardsoni*), the Franklin ground squirrel (*Citellus franklini*), and the thirteen-lined ground squirrel (*Citellus tridecemlineatus*). These grassland species live in burrow systems and are a common sight on the prairies. The Richardson ground squirrel and the Franklin ground squirrel range in colour from gray to light brown or buffy, the Richardson's tail is tipped with black and its quick movements give rise to the common name of 'Flicker-tail' for this species. The Franklin's tail is longer than its body and their bodies are larger than the Richardson ground squirrel. The thirteen-lined ground squirrel is distinguished by the 13 whitish stripes running down the length of its body. These ground squirrels can immediately be distinguished from the pocket gopher by the gopher's naked, pink tail and external cheek pouches. Also, the burrows of a pocket gopher have no open holes and have characteristically fan-shaped mounds.

The Problems Associated With Northern Pocket Gophers

Burrowing is one of the most significant behaviors of the pocket gopher. They construct a complex burrow system and uses the tunnels to locate and gain access to food items, as well as to secure shelter, to disperse and to obtain mates. It is the construction of the burrow system and the resulting surface mounds which have (in part) made pocket gophers a pest in forage fields in Manitoba.

Manitoba Agriculture estimates that pocket gophers are responsible for losses to producers of \$15-22 million dollars per year. The estimated losses are a combination of reduced alfalfa yields, reduced bale quality and damage to machinery (specifically swathing knives). Reduced yields are due to smothering and grazing of both the tap root and above ground parts by the gophers. A common response to heavy infestations is the premature break up of a stand. This represents large economic losses to the producer. A past study sponsored by the Manitoba Forage Council showed over a period of five years that the cost of re-establishing a stand every three years would cost \$527.18/ha. This was compared to the cost of no control (\$361.65/ha) and the cost of applying a rodenticide annually (\$229.72/ha - \$29.64/ha).

Trapping

Trapping is a common method of control for rodents. There are two main types of traps, impalement types, and snare types. These have been modified by various companies to give the producer a choice of trap. The impalement trap is activated when pressure is placed on a floor mounted trigger, causing spikes from each side of the trap to pinch together, impaling the pocket gopher. The snare trap is set inside a container with the trigger hanging down and the body of the snare resting on the ground at the entrance. When pressure is placed on the trigger the snare is raised to the ceiling, trapping the animal.

A three year evaluation of the efficiencies of four types of traps in Manitoba showed an overall efficacy of 44.25%, and a catch effort of 35 minutes per gopher trapped. The most efficient trap was an impalement trap, the Macabee®, at 51.5%. This was followed by the snare type, the Wooden Box , 46.8%, another snare, the Black Hole®, 42.8%, and lastly an impalement trap, the Easy Set®, 42.8%.

The purchase price of the individual trap varies from \$4.95 to \$15.00. Another option for producers is to hire a professional trapper who can charge \$2.00 - \$7.00 per gopher trapped depending on what the producer is willing to pay to have the animals trapped.

Trapping Procedure

1. locate freshest mound (often soil will be moist and have no rain damage),
2. probe to find feeding tunnel, this can be done with a stiff rod or the heel of a boot,
3. dig down to reveal tunnel and check to see if it runs in one or two directions,
4. place trap in tunnel, using two in a two-way tunnel, secure trap with wire and attach to stake that can also mark the position of the trap,
5. close up the hole, leaving a small portion uncovered to allow light and air to reach the tunnel, this will draw the gopher to area to repair the tunnel breach,
6. check trap as often as possible, if no gopher is caught by the next day, move the trap to a new location, observing any new activity.

Poison

There are three rodenticides registered for use in the control of pocket gophers in Manitoba:

1. Chlorophacinone
2. Strychnine
3. Zinc phosphate

The poisons used to target pocket gophers share a common method of application. The rodenticide is deposited directly into the burrow system through the use of a mechanical burrow builder or a hand probe. The burrow builder is pulled behind a tractor and is useful for large scale application of the poisoned bait. The function of the burrow builder is to create an artificial feeding tunnel just under the surface, into which poisoned bait is deposited via a modified seeder calibrated to deposit the prescribed dosage. The hand probe is useful for small-scale application of the poison, and is used to deposit bait into the pre-existing tunnels of individual gophers.

Studies in Manitoba have indicated that strychnine based poisons are most effective in the fall, and chlorophacinone based poisons are most effective in the spring. A Manitoba test of zinc phosphate showed a spring application to be most effective in reducing mounding activity.

Refer to the labels for complete information and precautions. These are available through licensed pesticide dealers.