



Integrated Pest Management for Richardson Ground Squirrels

Integrated pest management is a strategy used to attain sustainable, long-term pest control. It uses all viable options (chemical and non-chemical) to keep pest damage below economic levels while reducing negative impacts on the environment. Integrated pest management includes chemical, biological, historical/cultural and physical mechanical control activities. Naturally, some factors that affect Richardson's ground squirrel populations, such as climatic conditions, are not under producer control. Not all options will work in all areas or are necessarily compatible with all farming operations. However, it is important to consider other options aside from strychnine and other rodenticides as part of long-term pest management to prevent outbreak situations.

Non-chemical options

Trapping (e.g. guillotine-type traps)

Trapping can be an effective tool, but may be best-suited for smaller areas with high populations of Richardson's ground squirrel due to the labour requirements and capital expense.

Vegetation/pasture height

Whenever possible, keep vegetation on pastures or forage higher than 15 cm. Richardson's ground squirrels tend to inhabit areas with shorter vegetation, as there is better visibility for predator avoidance. Research studies noted that taller vegetation negatively impacts their colonization. In addition, leave headlands and fenceline vegetation around cropland and hay land tall and not fall grazed.

These areas can also act as habitat for Richardson's ground squirrel predators.

Raptor platforms or nesting boxes for predatory birds

Set up raptor platforms to entice raptors. This tool has only initial set-up costs and may be more beneficial in areas with fewer trees. There have, however, been reports of successful use of raptor platforms in the parkland region.

RoCon

RoCon is a foam product injected in Richardson's ground squirrel burrows to suffocate the rodents. You must carry a supply of soft water for this product. Application timing is also important.

Shooting

Hunting can be an effective tool for some areas. It is important to abide by safety precautions and regulations whenever you use a firearm.

Chemical options

Chemical options for Richardson's ground squirrel control include the following:

- Strychnine;
- Anticoagulants, with the active ingredient chlorophacinone (e.g. Rozol, Ground Force); and
- Phostoxin (aluminum phosphide).

Use of rodenticides

Although targeted at Richardson's ground squirrel, rodenticides will cause mortality in other animals. It is important to preserve natural predator populations to aid in Richardson's ground squirrel management. This includes fox, badger, weasels and coyotes. They can be negatively affected by the use of rodenticides.

The best timing for Richardson's ground squirrel control should be implemented based on the following:

- You will achieve optimum results from baiting before green up of vegetation in the spring. Variable climatic conditions will affect the emergence of Richardson's ground squirrel and the performance of rodenticides.

- When using a rodenticide, your first baiting should be completed prior to the emergence of the young.
- Bait or control in the headlands and fence lines prior to crop emergence.
- Do not use strychnine baiting twice in sequence in the same baiting location. Use an alternate control product or method for the second application of control. After the young Richardson's ground squirrel have emerged, do not apply strychnine or chlorophacinone more than once in the same location. This will help reduce the negative impact on predators.

Phostoxin (aluminum phosphide) is a fumigant that can be very effective in Richardson's ground squirrel control, but can also be very hazardous. This is a restricted product and requires a Pesticide Applicator's Licence to purchase and apply the product. New restrictions include submitting a treatment plan to the Pest Management Regulatory Agency (PMRA) prior to use.

Research has shown that anticoagulants (chlorophacinone, e.g. Rozol, Ground Force) are not effective if the surrounding crop stand is more than 40 per cent alfalfa, except when there is little green growth visible. Alfalfa contains Vitamin K, which is an antidote to chlorophacinone.

Oats are not a good bait carrier for chlorophacinone. There is an enzyme in oats that will reduce the effectiveness of chlorophacinone over time. Wheat is a better bait carrier.

For more information

For more information, contact the Agriculture Knowledge Centre general inquiry line at 1-866-457-2377.

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