

# Pocket Gopher Identification and Management in Orchards and Tree Nurseries

Pocket gophers prefer living in grasslands but are also found in cultivated fields and orchards.

Pocket gophers spend most of their time underground eating roots but will also eat stems above ground. They can cause damage when they eat the roots and stems of fruit trees, often killing younger trees.



## Northern Pocket Gopher Identification

17.5 – 22 cm (6.8-8.6 inches) long rodents with large yellow incisors.

Big head and a long narrow body covered in brown/grey fur with some white fur on their chin and underside.

Large clawed front paws.

Hairless tail, half the length of their body.

Live individually, not in colonies.

They use their fur-lined cheek pockets to carry food – hence their name.

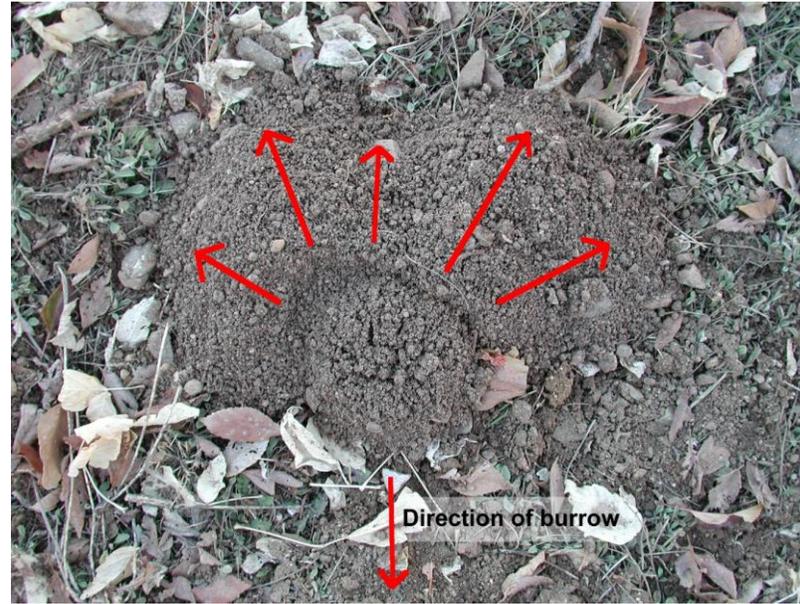


# Signs of Northern Pocket Gopher

Pocket gophers live underground, and create runways and tunnel openings in grass.

Look for:

- Mounds that are plugged and fan shaped.
- Girdling damage on tree stems and roots.
- Root exposure caused by burrowing.



## Other Small Mammals: Moles, Deer Mice and Shrews Cause No Harm to Your Plants



**There are no moles in the Okanagan**

Moles make volcano shaped mounds but they do not damage your plants.



Deer mice also make tunnels but the width is < 2.5 cm (1 inch wide).



Shrews weigh 5-6 gram and are 8-10 cm long.

# Pocket Gopher Management

Regular field monitoring can help you identify problem area(s) and evaluate effectiveness of treatment. The best times to monitor for gopher activity are in the spring and fall after irrigation and when they are most actively building mounds.



## Monitor monthly:

- Field perimeters to determine whether gophers are invading the field from adjacent properties.
- Weedy areas such as roadsides and areas with extensive weed growth or ground cover. This type of vegetation is more likely to support gophers, and low-growing vegetation makes signs of burrowing activity more difficult to see.
- Look for darker-colored fan shaped mounds, which indicate newly removed, moister soil.
- To check whether gopher are present – flatten the mound and check the following day to see if the mound is built back up.
- If you find mounds, also look for trees or vines showing signs of stress, or both, and look for girdling of roots or crowns at or below the soil.



# Vegetation Control

Gophers can easily enter orchards from adjacent native range or pasture.

Gophers can be discouraged by planting a buffer strip of grain around areas that need protection.

Remove weeds that have large root bulbs that are attractive to gophers.

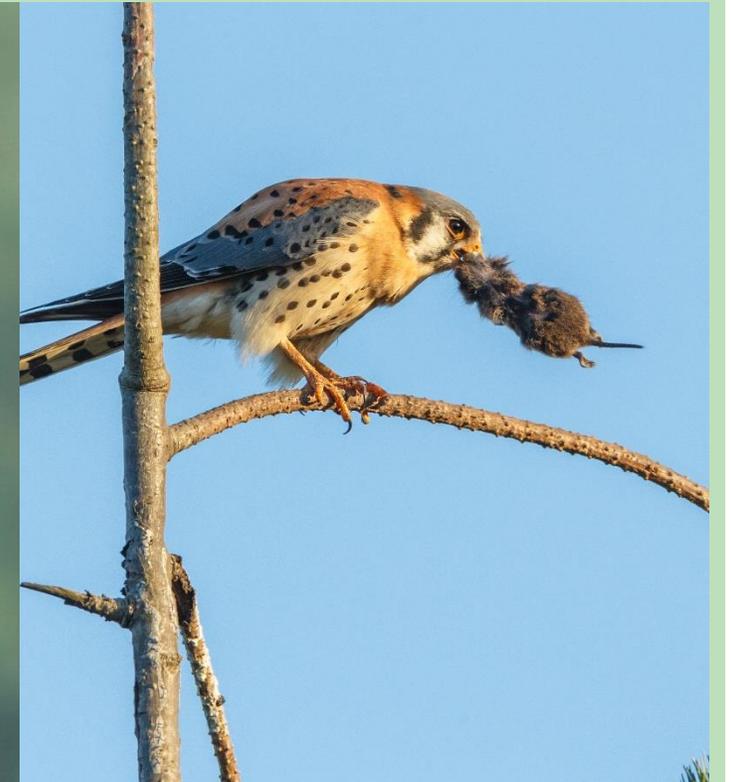


# Encouraging Predators of Rodents

Birds of prey and snakes are great allies in combating your gopher problem, as gophers are an important food source for them.

If you have kestrels and hawks hunting your fields in the daytime and owls doing rodent control at night do not use rodenticides or reduce your use to an absolute minimum.

These predators can manage pests very effectively but exposure to rodenticides through rodent prey can result in sickening and/or death of birds and other non-target wildlife.



# Trapping

Trapping is the safest and most effective method of controlling pocket gophers.

There are two main types of traps available: pincher traps (e.g. Gophinator) and box-type kill traps (e.g. black hole trap):

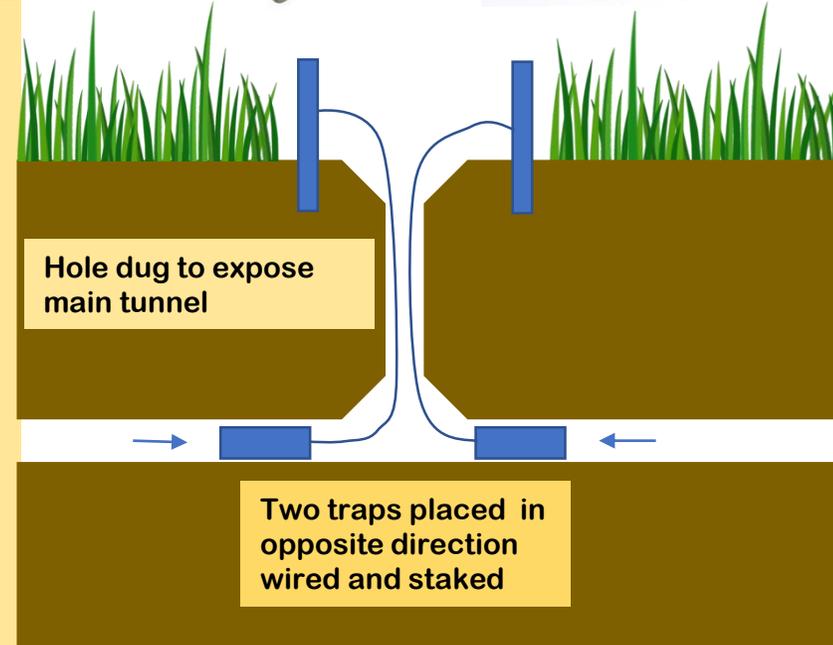
## When installing traps:

- It is important to correctly place the traps in the main tunnel.
- Open the tunnel using a hand trowel or other small shovel and place two traps facing in opposite directions to intercept gophers moving in both directions.
- Use wire or light chain to secure the trap to a stake to allow for safe and easy removal of the carcass and/or trap.
- Flag traps to find them and check the traps once or twice daily for fresh kill and to ensure the traps are not filled with dirt.
- If no gophers are trapped after 3-4 days, relocate to another main tunnel.

Gophinator



Box Trap



- For educational video on setting gopher traps see: [How to trap pocket gophers in an orchard.](#)

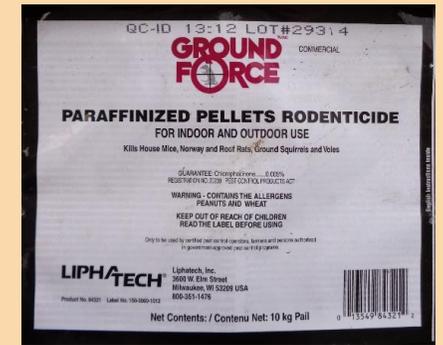
- Always be vigilant for gophers immigrating from bordering properties and act promptly to prevent establishment.

# Rodenticide

If plant damage is significant, and trapping has not been an effective control method, there are rodenticide products available that are specifically designed to be used in agricultural fields.

In Canada, only products containing the active ingredients: **chlorophacinone, diphacinone or zinc phosphide can be used outdoors in a field setting.**

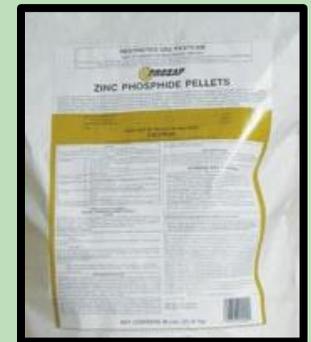
Chlorophacinone and diphacinone are anticoagulant rodenticides, which will inhibit the production of vitamin K necessary to regulate the viscosity of the blood, resulting in the gopher bleeding to death over a 5-7 day period. Both are multi-feed compounds, and gophers must consume the bait multiple times over 3-5 days to receive a toxic dose. Example of products: Rozol RTU and Ground Force.



Zinc phosphide products are instant kill products: phosphine, PH<sub>3</sub> gas develops after its been digested by target rodent. Products which active ingredient is zinc phosphide should be applied directly in tunnels using a hand probe or a mechanical borrow builder.

Zinc phosphide products have lower secondary toxicity risk when compared to anticoagulant rodenticides.

However, zinc phosphide products are highly reactive and should not be applied when it is wet outside or in regions that experience a lot of rainfall.

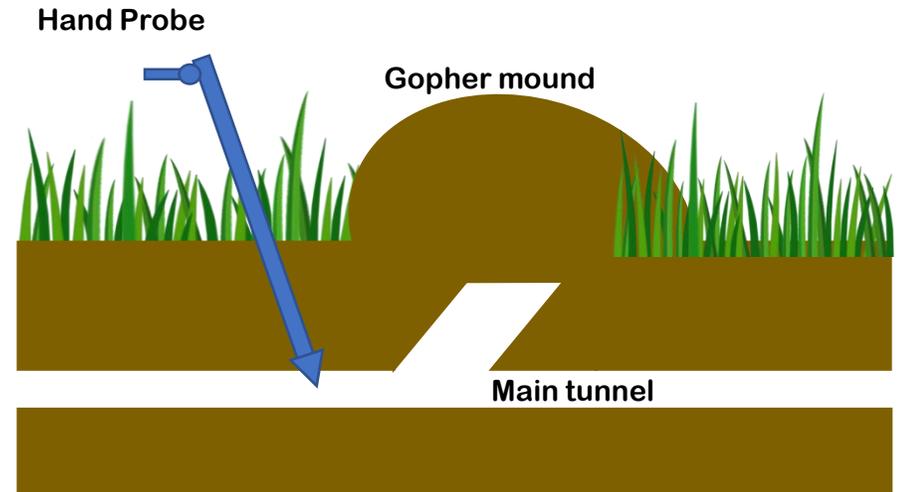


Zinc phosphide pellets

\* Remember: Gophers feed on roots, tree cambium, and green vegetation, so getting them to feed on baited seeds or pellets can be challenging.

# Hand Bait Probes

- Using a hand bait probe, probe 15-30 cm (6-12) inches deep to locate the main tunnel. Probe opposite and about 30 cm from the V-shape indentation of the side of the mound.
- The probe will drop about 5 -10 cm when a burrow has been located. Be sure that bait is in the main runway, not in the laterals or imbedded in the bottom of the runway.
- Tunnels typically run in only one or two directions. Occasionally you will have tunnels running in three or more directions.
- As per label instruction drop the required amount of bait into the burrow, a funnel can be used to pour the bait into the tunnel.
- Make sure the opening is sealed with a stone, dirt clod or another covering.



- Make 2-3 treatments per burrow system. Maintain a constant supply of bait in the burrow system for as long as there is gopher activity.
- To minimize the risk of non-target poisoning remove any bait spillage from the soil surface.
- If gophers have infested a large area, hand probes (Gopher bait applicator) designed to deposit single-dose baits are available. Bait application is faster with these devices because they eliminate the need to stop and place the bait by hand. Once you have located a tunnel using the probe, a trigger releases a measured amount of bait into the tunnel.



# Mechanical Burrow Builders

- Mechanical burrow builders can be used by a professional pesticide applicator.
- The soil has to be moist enough to enable the creation of stable artificial burrows.
- The machine has to be set the same depth as the gopher runways.
- In orchards and Christmas tree plantations create short runs of tunnels that run parallel to rows of trees.
- Place a tunnel between rows and on either side of the plantation.
- Apply rodenticide bait as per label instructions.
- To monitor for new mounds - Immediately after application use harrow, leveler or similar equipment to flatten all mounds.
- Check treated area 7- 10 days after application for new mounds.
- Any new mounds should be treated.
- Treating field margins may prevent or slow reinvasion.
- To minimize secondary poisoning: Check field regularly every 2-3 days and remove poisoned carcasses.



For more detailed information refer to: [Using burrow builders for pocket gopher control.](#)

## For All Rodenticide Treatments:

- After damage has subsided and there are no fresh signs of gopher activity, remove the bait but keep up the monitoring to ensure that there is no new damage.
- Removing bait reduces the risk of non-target species consuming the bait such as other small mammals, insects and songbirds.
- If rodenticides are applied, do not attempt to attract raptors to hunt in this field due to risk of secondary rodenticide poisoning.

Remove dead animals.

Poisoned carcasses pose a significant risk to predators and scavengers.



## More Information:

For up to date information on where rodenticides can be applied see [the Health Canada - Pest Management Regulatory Agency website](#)

For more information on how to manage pocket gophers:

- [UC Pest Management Guidelines](#)
- [Vertebrate Pest Control Handbook: Pocket Gophers](#)
- [South Okanagan Conservation Strategy: Pocket Gophers](#)
- [BC Tree Fruit Production Guide: Pests](#)
- [Living with Wildlife in BC: Rodents](#)

For information on how to control voles in orchards and nurseries: URL TBA

