The decision to use rodenticides to control rodent pests can be challenging due to the variety of rodenticides available. This guide is written to provide a quick survey of available products to help you narrow your choices quickly. It is not a replacement for the pesticide label. Always read the label thoroughly before purchasing any pesticide to ensure that the product is right for your situation. Note that tribal areas and government lands (e.g. BLM, National Forests and Parks, and State lands) have additional restrictions on rodenticide use. Please consult officials before using rodenticides in those areas.

We have organized the rodenticides by pest species and then by active ingredient or active ingredient category. We have endeavored to provide a complete list of rodenticides registered in Montana. However, the registration status of rodenticides can change, sometimes, quickly. To check the registration of a product, visit https://mtplants.mt.gov/ProductRegFSA/BrandSearch.aspx. General Use Pesticides (GUP) are pesticides that may be purchased without a license for use on your property. Restricted Use Pesticides (RUP) are pesticides that may only be purchased by a Montana licensed pesticide applicator. If you wish to apply rodenticides on someone else’s property, you will need a Commercial Pesticide Applicators License. To learn more or to obtain a pesticide applicator’s license contact Montana Department of Agriculture at 406-444-4900. For more information on the control of rodents in Montana visit http://agr.mt.gov/Topics/Vertebrate-Pests. Numbers that follow pesticide names refer to the EPA’s pesticide registration number. Numbers that begin with MT are special needs registrations that allow for expanded uses in Montana only. If the EPA and MT numbers are provided, applicators will need to have both labels in their possession.

Under each pest species heading is the list of available products registered for the control of that species along with brief descriptions regarding the rodenticide’s use. These descriptions are written to help you narrow your choices and fall under four categories:

- **Use Directions** briefly highlight a few label requirements governing the use of the pesticide,
- **Use Restrictions** describe some of the important ways the rodenticide may not be used,
- **Limitations** review some practical issues that you need to consider before using the rodenticide not necessarily found on the label and
- **Important** points out some considerations that research and experience have revealed about using the rodenticide in the most effective way but are not necessarily found on the product’s label.

**SAFE USE OF RODENTICIDES**

Rodenticides must be used properly to prevent needless death or injury to people and non-target animals. Fortunately, following a few simple precautions will prevent most potential accidents.

**ALWAYS READ THE LABEL BEFORE USING ANY PESTICIDES**

1. Do not stockpile rodenticides. Restrict purchases to those needed to fulfill seasonal needs. While rodenticides do not usually weaken during storage, grain baits, for example, may dehydrate and become stale, thereby reducing their acceptability to rodents.

2. Store rodenticides in a locked, weather-tight, rodent proof area. Secure storage of rodenticides protects bait from accidental consumption by children and pets as well as contamination from other chemicals that may reduce bait acceptance. Bait that becomes wet may be reduced in strength or become moldy, resulting in reduced effectiveness or poor acceptance.

3. Keep rodenticides in their original, labeled containers as grain baits and grain-based pellets can easily be confused with livestock feed.
4. Read and review rodenticide labels before use each season. Check for changes in use recommendations and use restrictions. Understand procedures to follow in case of accidental poisoning and keep first aid equipment at hand.

5. Apply baits with designated calibrated dispensers to ensure that the label requirements are followed. Do not use pesticide dispensers for other tasks.

6. Do not over apply. Over-application only increases costs, residual pesticide levels, and hazards to non-target animals, and is unlawful.

7. Ground squirrels and prairie dogs are surface foragers and not accustomed to finding food in piles. Avoid piling of bait as piles increase hazard to livestock and non-target wildlife. When applying surface bait, scatter the bait over a square foot area near each active burrow. Place bait on hard, bare ground or areas with short, sparse vegetation. Avoid scattering bait in areas of dense grass as ground squirrels and prairie dogs will usually not find it. Do not apply bait on soft mound dirt as this usually results in the bait being soiled or buried rather than consumed.

8. When applying bait keep, excess bait in locked or latched storage. Use canvas bags that can be zippered or tied shut when not in use. Livestock can be killed by feeding from open bait containers left unattended on the ground or in vehicles.

9. Consider additional precautions when applying grain baits in areas frequented by waterfowl or other seed eating birds:
   - Time applications during periods when waterfowl are not using the area.
   - Patrol or use scare devices to keep waterfowl from the area for several days after bait application.
   - Consider use of alternative control methods such as burrow fumigants or bait stations in areas frequented by waterfowl or other seed eating birds.

10. Dispose of poisoned rodent carcasses to reduce risks to predators and scavengers. Bury carcasses individually in burrows to prevent concentration of poisoned carcasses. Use gloves and a shovel to avoid contact with external parasites, such as fleas, that may transmit diseases to humans.

11. Notify nearby neighbors of your bait application. Suggest confinement of dogs, cats or other animals for a period of time after bait application. Use five days for zinc phosphide and strychnine-based products and 14 days for anticoagulants unless the label directs otherwise.

12. Destroy or recycle empty bait containers. Do not reuse for other purposes.

13. Cut or untie bait bags carefully to prevent dust from billowing from bait containers. Stand up wind when transferring bait. Note that some labels require additional personal protection equipment when filling application devices.

14. Change clothes following a pesticide application and wash separately from other laundry. Shower and put on clean clothes before performing other activities.
Registered Rodenticides for Ground Squirrels

Columbian ground squirrel. Photo: Fredly Fish 4. Wikimedia

Richardson’s ground squirrel. Photo: Stephen M. Vantassel

**Zinc Phosphide Baits - Restricted Use Pesticides (RUP)**

Registered Products

- Prozap® Zinc Phosphide Oat Bait 61282-14 Hacco Inc.
- Prozap® Zinc Phosphide Pellets 61282-49 Hacco, Inc.
- Wilco Zinc AG Bait 36029-10 Wilco Distributors, Inc.
- Zinc Phosphide on Oats 4271-16 R & M Exterminators, Inc.
- ZP AG Oats 12455-102-3240 Motomco
- ZP Rodent Bait Ag 12455-102; MT-890009 Bell Laboratories
- ZP AG Pellets 12455-17-3240; MT-18-0005 Motomco Richardson’s Only

**Use Directions:** Apply by hand with calibrated dipper at one teaspoon (4 g) per active burrow. Scatter bait near mound or in runway. Do not pile. Prebait with untreated grain two to three days before toxic bait application is strongly recommended and sometimes mandated. Prebait is not required when using ZP AG Pellets under the 24c label on fallow ground. Test ground squirrel bait acceptance by placing clean nontoxic oats near 20 or 30 marked burrows and monitoring for consumption before application of prebait and toxic bait. Do not apply bait until squirrels show good bait acceptance. Some labels allow broadcast baiting by hand, ground-driven or aerial devices.

**Use Restrictions:** Consult with the U.S. Fish and Wildlife Service (Helena: 406-449-5225) or MT Fish, Game & Parks (Helena 406-841-4000) for current information on habitats occupied by endangered species. Some labels restrict application to bait stations in alfalfa and barley (during post-harvest or dormancy periods) or on non-residential lawns, golf courses, parks, and ornamental sites. Apply bait only once per year. Site restrictions can vary wildly so read labels carefully. Broadcast application is permitted only on rangeland and non-crop areas. Do not broadcast on sites where ground cover is greater than 50 percent.

**Limitations:** Do not apply bait when inclement weather is expected in the two to three days following application. Note: not all labels allow bait to be placed in bait stations.

**Important:** Best results occur when green vegetation is not abundant, i.e. early spring, mid-summer.

**Anticoagulants in Bait Stations**

Registered Products –

- Rozol® Ground Squirrel Oat Bait–MT 00-0007 Liphatech, Inc. (RUP)

**Use Directions:** These poisons require squirrels to feed on the bait several times over several days to achieve a lethal dose. Apply baits only in bait stations of sufficient strength to inhibit destruction by livestock or non-target wildlife.
Use sufficient bait stations to service the squirrel population. Space stations 20 to 200 feet apart, depending on squirrel density and label recommendations. Bait stations may be spaced along crop borders between squirrel colonies and crops. Fill each station with 1 to 4 pounds of bait as label states.

**Use Restrictions:** Do not attempt to use by scattering bait around burrow openings. May NOT be applied to residential lawns.

**Limitations:** Cost for bait stations and bait plus labor of maintaining stations usually limit practical use to acreages of 500 or less or to isolated squirrel populations. Must have both the regular label (Rozol SLN No. MT-000007) in your possession when using these products.

**Important:** Maintain a bait supply for the period suggested on the label.

**Anticoagulants—Ground Application**

**Registered Product—RUP**

Rozol® Ground Squirrel Oat Bait MT 00-0007  Liphatech, Inc. (RUP)

**Use Directions:** This is a multi-dose poison requiring that the squirrels feed on the bait several times over several days to achieve a lethal dose. Scatter 1 tablespoon of bait on bare ground around (not in) active ground squirrel burrows. Do not allow bait to pile. Do not scatter bait on a soft dirt mound. Apply when weather will be dry for at least four days. Apply a second application two to four days after the first.

**Use Restrictions:** Do not use spot baiting around burrows located in public areas, near residential areas, on roads or over water.

**Limitations:** Spot baiting is time consuming so it is often practical only for small areas. Applicators must have the MT 00-0007 label in their possession when using this product.

**Important:** Place an orange surveyor’s flag at burrows that were treated. Flags will help you locate the burrows faster during the second application.

**Burrow Fumigants**

**Registered Products**

- Ignitable Gas Cartridges - General Use Pesticides (GUP)
  - Amdro Gopher Gasser 73342-8  Ambrands
  - The Giant Destroyer 10551-1  Atlas Chemical Corp
  - Gas Cartridge 56228-61  USDA APHIS Wildlife Services
  - Revenge Rodent Smoke Bomb 9086-4  Roxide International Inc.

**Use Directions:** Use only in outside burrows at least 15 feet from structures that contain the target species. Place in burrows, plug with sod, then seal with soil. Best results occur when soil moisture is high. Efficacy is reduced in dry, porous soils which allow gas to escape into soil structure and diminishes the level of toxic gases in the burrow.

**Use Restrictions:** Some fumigants are registered only for residential use. Do not apply ignitable gas cartridge fumigants within 15 feet of building foundations, porches or items that can catch fire. Never use ignitable gas cartridges inside, under or beside buildings.

**Limitations:** Cost and labor limit use to small acreages and isolated populations. Consider fire risk.

**Registered Products**

- Aluminum Phosphide (Pellets/Tablets) - Restricted Use Pesticides (RUP)
  - Degesch Phostoxin Pellets 72959-5  D & D Holdings, Inc.
  - Degesch Phostoxin Tablets 72959-4  D & D Holdings, Inc.
  - Detia Phos Tablets 72959-4  D & D Holdings, Inc.
  - Fumitoxin® Pellets 72959-2  D & D Holdings, Inc.
  - Fumitoxin® Tablets 72959-1  D & D Holdings, Inc.
Use Directions: Must create a written Fumigation Management Plan prior to use. A template is available at http://agr.mt.gov/Topics/Vertebrate-Pests. Place in outdoor burrows occupied by the target species, plug with sod, then seal with soil. Best results occur when soil moisture is high. Efficacy is reduced in dry, porous soils which allow gas to escape into soil structure and slows release of phosphine gas from aluminum phosphide fumigants.

Use Restrictions: Note that five pellets = one tablet. Maximum application is 20 pellets OR four tablets per burrow system. Do not apply product within 100 feet of buildings that may house humans or animals. Do not use in residential, nursing homes, schools, day care facilities and hospital areas. It may be used to treat playing fields. Warning signs must be posted and left for at least two days following the application.

Limitations: Cost and labor limit use to small acreages and isolated populations. In addition, you must obtain air testing equipment to monitor phosphine gas levels to ensure applicators are not exposed. Must have an appropriate gas mask available if phosphine gas levels are exceeded.

Important: Product may be used year-round and as a follow up to other pesticides. Most applicators find that tablets are easier to handle than pellets. Research suggests that placing two tablets (or ten pellets) in each ground squirrel burrow is sufficient to provide effective control. Most effective when temperatures are above 70° F.
Registered Rodenticides for Pocket Gophers

Anticoagulant Baits - General Use Pesticides (GUP)

Registered Products—hand baiting

- Rozol® Pocket Gopher Bait 7173-184  Liphatech, Inc.
- J. T. Eaton Answer For The Control of Pocket Gophers 56-57  J. T. Eaton & Co, Inc.
- Kaput®-D Pocket Gopher Bait 72500-9  Scimetrics Ltd. Corp.
- Tomcat® Mole & Gopher Bait  12455-30-3240  Motomco, Inc. (Zinc Phosphide)

Use Directions: For use on pocket gophers only in below ground applications. Use probe and funnel method, dig hole and hand placement or sub-station to apply bait in burrows as directed by label. Apply active burrow systems identified by fresh mounds. Always ensure to reclose hole openings after application. J. T. Eaton bait bars should be placed in opened burrow systems and re-plugged.

Use Restrictions: Some products cannot be used on cropland. May not be applied by mechanical burrow builder. Note restrictions about control of pocket gophers in prairie dog towns.

Limitations: Hand application is labor intensive making use over larger acreages difficult. Note: moles do not occur in Montana.

Important: Decrease in pocket gopher activity may take 2 weeks. Retreat in areas of active mound building after two weeks.

Anticoagulant Baits – Restricted Use Pesticide (RUP)

Registered Products—application by mechanical burrow builder

- Kaput®-D Burrow Builder Pocket Gopher Bait 72500-12  Scimetrics Ltd. Corp.
- Rozol® Pocket Gopher Bait II (Burrow Builder Formula) 7173-244  Liphatech, Inc.

Use Directions: For use on pocket gophers only in below ground applications. Place six to eight pounds of bait per acre. Treat areas of the field where active burrow systems are identified by fresh mounds. Ensure that burrow builder recloses the furrow created by the torpedo. Remove any bait found on the ground surface. Some products allow application by hand as well.

Use Restrictions: Some products cannot be used on cropland. Note restrictions about control of pocket gophers in prairie dog towns.
Limitations: Use burrow builders only when soil conditions are suitable for creating burrows. May require 5 to 10 pounds of bait per acre.

Important: Decrease in pocket gopher activity may take 2 weeks. Retreat in areas of active mound building after two or three weeks as inactive pocket gophers may become active during that time.

**Strychnine Baits (Application by Hand)** – General (GUP) and Restricted Use Pesticides (RUP)

Registered Products

- 0.5% Strychnine Treated Grain Bait for Pocket Gophers 56228-20 USDA APHIS Wildlife Services (GUP)
- 0.5% Strychnine Milo for Hand-baiting Pocket Gophers 56228-19 USDA APHIS Wildlife Services (GUP)
- Martin’s Gopher Bait 50 53883-23 Control Solutions, Inc. (GUP)
- Omega Gopher Grain Bait 5042-32 RCO International, Inc. (GUP)
- Wilco Gopher Getter Bait Type 1 36029-1 Wilco Distributors, Inc. (GUP)
- Fort Dodge Gopher Bait 322-1 Fort Dodge Chemical, Inc. (RUP)
- Martin’s Gopher Bait 50R 53883-24 Control Solutions, Inc. (RUP)
- Petersen’s Pocket Gopher Killer III 10031-3 Petersen Seeds, Inc. (RUP)
- Pocket Gopher Bait – Strychnine 1-10 on Oats 4271-10 R & M Exterminators, Inc. (RUP)
- Pocket Gopher Bait – Strychnine 1-10 on Milo 4271-17 R & M Exterminators, Inc. (RUP)

Use Directions: Apply one teaspoon of bait by probe and funnel, spoon or bait probe dispensing methods at one to seven locations into active burrow systems (check label for rates). Applications must be below ground. Make applications when gophers are actively building mounds.

Use Restrictions: Bait cannot be applied by mechanical burrow builder. Bait cannot be applied to ground surface. When loading more than 3 pounds of bait into mechanical application equipment and when disposing of bags you must wear eye protection and a respirator. Some formulations do not allow use in cropland areas. Some restrict use to outdoor residential areas.

Limitations: Acceptance of strychnine bait by pocket gophers is highly variable. Adjust timing of application and bait formulation to determine what works best in your area.

**Strychnine Baits (Application by Mechanical Burrow Builder)** – Restricted Use Pesticides (RUP)

Registered Products—Application by mechanical burrow builder

- 0.5% Strychnine Milo Pocket Gopher Bait 56228-11 USDA APHIS Wildlife Services
- 0.5% Strychnine S.R.O. Pocket Gopher Oat Bait 56228-12 USDA APHIS Wildlife Services
- Fort Dodge Gopher Bait 322-1 Fort Dodge Chemical, Inc.
- Martin’s Gopher Bait 50R 53883-24 Control Solutions, Inc.
- Petersen’s Pocket Gopher Killer III 10031-3 Petersen Seeds, Inc.
- Pocket Gopher Bait – Strychnine 1-10 on Oats 4271-10 R & M Exterminators, Inc.
- Pocket Gopher Bait – Strychnine 1-10 on Milo 4271-17 R & M Exterminators, Inc.
- Wilco Gopher Getter Ag Bait 36029-7 Wilco Distributors, Inc.

Use Directions: For use on pocket gophers only in below ground applications. Place one to three pounds of bait per acre depending on label instructions. Treat areas of the field where active burrow systems are identified by fresh mounds. Ensure that burrow builder recloses the furrow created by the torpedo. Remove any bait found on the ground surface.

Use Restrictions: Applicators must wear eye protection and respirator when loading more than three pounds into mechanical application equipment. Bait may not be applied to ground surface. Some products may not be used in areas with food or feed crops.

Limitations: Use burrow builders to apply bait only when soil conditions are suitable for creating burrows that will not collapse and bury bait.
Zinc Phosphide Baits – May be classified either as General (GUP) or Restricted Use Pesticides (RUP)

Registered Products
- Amdro Mole & Gopher Bait 12455-30-73342 Ambrands (GUP)
- Bonide Moletox II® Mole & Gopher Killer 4-285- Bonide Products, Inc. (GUP)
- Go-die Gopher Bait II 36029-12-54705 Lawn & Garden Products, Inc. (GUP)
- Gophertox 4-285 Bonide Products, Inc. (GUP)
- Gordon’s Mole & Gopher Killer Poison Pellets 12455-18-3240 PBI Gordon Corp. (GUP)
- Moletox II Mole & Gopher Killer 4-285 Bonide Products, Inc. (GUP)
- Motomco Gopher Killer 12455-18-3240 Motomco, Inc. (GUP)
- Prozap® Zinc Phosphide Rodent Pellets AG 61282-56 Hacco, Inc. (GUP)
- Surestop Mole & Gopher Bait 12455-30-1663 Grant Laboratories, Inc. (GUP)
- Sweeney’s Poison Peanuts Pellets Mole & Gopher Bait II 149-16 Senoret Chemical Co., Inc (GUP)
- Tomcat Mole & Gopher Bait 12455-30-3240 Motomco (GUP)
- Wilco Zinc Homeowner Bait for Gopher Control 36029-12 Wilco Distributors, Inc. (GUP)
- Zinc Phosphide Rodent Pellets 61282-56 Hacco, Inc. (GUP)
- Prozap® Zinc Phosphide Oat Bait 61282-14 Hacco, Inc. (RUP)
- Prozap® Zinc Phosphide Pellets 61282-49 Hacco, Inc. (RUP)
- Zinc Phosphide on Oats 4271-16 R & M Exterminators, Inc. (RUP)
- ZP AG Oats 12455-102-3240 Motomco, Inc. (RUP)
- ZP AG Pellets 12455-17-3240 Motomco, Inc. (RUP)
- ZP® Rodent Oat Bait AG 12455-102 Bell Laboratories, Inc. (RUP)
- ZP Rodent Bait AG 12455-17 Bell Laboratories, Inc. (RUP)

Use Directions: Open active pocket gopher tunnels either by digging through the mound plug or by locating the main runway using a probe. Place one teaspoon of bait into the active tunnel. One to five placements per burrow system may be made depending on label instructions. Carefully close the hole so as not to smother bait with soil.

Use Restrictions: Applications of bait may only be made below ground. Some labels restrict applications to lawns. Others prohibit use in crop, lawns or garden areas. When loading product into mechanical application equipment applicators must wear a respirator. Due to the pesticide’s toxicity, careful attention must be paid to restrictions related to endangered and threatened species.

Limitations: Check labels carefully. Not all permit use with burrow builders. Use burrow builders to apply bait only when soil conditions are suitable for creating burrows that will not collapse and bury bait.

Important: Due to zinc phosphide’s sensitivity to moisture, avoid using in wet ground or when rain is expected in two to three days following application.

Burrow Fumigants

Registered Products: Consult list under Ground Squirrels. Note that EPA #56228-61 is NOT registered for pocket gophers.

Use Directions: See Ground Squirrels.

Limitations: Not generally recommend for control of pocket gophers. Fumigant gases disperse poorly in shallow, complex tunnels of pocket gophers unless numerous applications are made in the same burrow system. Pocket gophers may seal off treated tunnels.
Registered Rodenticides for Black-tailed Prairie Dogs

Zinc Phosphide Baits - Restricted Use Pesticide (RUP)

Registered Products
- Prozap® Zinc Phosphide Oat Bait 61282-14  Hacco, Inc.
- Prozap® Zinc Phosphide Pellets 61282-49  Hacco, Inc.
- Wilco Zinc Ag Bait 36029-10  Wilco Distributors, Inc.
- Zinc Phosphide on Oats 56228-14  USDA APHIS Wildlife Services
- Zinc Phosphide Prairie Dog Bait 13808-6  SD Dept of Agriculture
- ZP AG™ Oats 12455-102-3240  Motomco, Inc.
- ZP Rodent Bait AG 12455-17; MT 05-0005  Bell Laboratories, Inc.
- ZP® Rodent Oat Bat AG 12455-102  Bell Laboratories, Inc.

Use Directions: Some labels require a pretest, which is the application of untreated grain to 20 to 30 active burrows 30 feet or more apart to determine if prairie dogs will eat grain. All labels require prebaiting of active burrows with untreated grain to condition prairie dogs to accept the toxic bait readily. Never apply toxic bait if prairie dogs are not feeding on untreated grain. Apply to rangelands and pastures. Some labels allow application to adjacent non-crop areas and median strips. Some labels restrict application on rangeland when ground cover is less than 50%. Typically, grain must be spread out over a six to 12-inch diameter circle within three feet of the active prairie dog burrow opening. Some require application to be placed at edge of mound or in adjacent feeding areas. Read label carefully. Survey landscape for non-target animals before each application.

Use Restrictions: Consult with the U.S. Fish and Wildlife Service (Helena: 406-449-5225) or MT Fish, Game & Parks (Helena 406-841-4000) for current information on habitats occupied by endangered species. Application windows vary from July to December, January or February depending on label. However, if you use the supplemental label (MT 05-0005) in conjunction with the 12455-17 labeled product and your site meets the requirements (rangeland or adjacent timber), the date restrictions are significantly reduced. Read and follow label restrictions. Consult with U.S. Fish & Wildlife authorities if more than 80 acres are to be treated or the town is less than 80 acres and not isolated. Applications can only be made by hand. Hand-operated dispensers attached to four-wheelers are allowed. Must wear respirator when filling containers. Application may be made only once per year.

Limitations: Check labels carefully. Some require daily monitoring of sites to determine the potential for exposing non-target animals to toxic bait. Carcasses must be picked up and disposed of in accordance to label. Second applications within the application window are typically prohibited, however some labels allow a second application to treat prairie dogs that have migrated into the original treatment area.

Important: Due to zinc phosphide’s sensitivity to moisture, avoid using in wet ground or when rain is expected in two to three days following application. To prevent bait from being buried or trampled, avoid placing the bait directly in front of the burrow hole or on any trails used by the prairie dog.
**Anticoagulant Baits** – Restricted Use Pesticides (RUP)

**Registered Products**
- Rozol® Prairie Dog Bait 7173-286 LiphaTech, Inc.
- Kaput®-D Prairie Dog Bait 72500-22 Scimetrics Ltd. Corp.

**Use Directions:** Apply on rangeland and adjacent non-crop areas only. Apply so that all the bait is at least six inches inside the burrow. Must conduct at least six post-treatment grid searches looking for sick and dead prairie dogs. All carcasses must be disposed at least 18 inches below ground. Read and follow label directions.

**Use Restrictions:** Read and print out the Endangered Species Bulletin for your application area ([http://www2.epa.gov/endangered-species](http://www2.epa.gov/endangered-species)). Apply only during the period between October 1 through March 15. Other locations have more restricted application time periods. Do not apply within the exterior boundaries of the Crow Reservation or the Blackfeet Reservation in MT. Read and follow label restrictions. Do not graze livestock in treated areas for 14 days after application. You cannot use an anticoagulant bait with a different anticoagulant bait in the same treatment period. You may, however, apply a second application of the same rodenticide to control remaining prairie dogs provided application requirements can be met.

**Limitations:** Requires a great deal of post-treatment surveys of treatment areas to remove dead and dying prairie dogs.

**Important:** In burrows that have a low-grade slope, insert bait further into the burrow to prevent grain-feeding birds from walking in the burrow and accessing bait.

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**Burrow Fumigants**

**Registered Products**
- Ignitable Gas Cartridges - General Use Pesticides (GUP)
  - Gas Cartridge 56228-61 USDA APHIS Wildlife Services

**Use Directions:** Use only in outside burrows at least 15 feet from structures that contain the target species. Place in burrows, plug with sod, then seal with soil. Best results occur when soil moisture is high. Efficacy is reduced in dry, porous soils which allow gas to escape into soil structure and diminishes the level of toxic gases in the burrow.

**Use Restrictions:** Do not apply ignitable gas cartridge fumigants within 15 feet of building foundations, porches or items that can catch fire. Never use ignitable gas cartridges inside, under or beside buildings.

**Limitations:** Cost and labor limit use to small acreages and isolated populations. Consider fire risk.

**Registered Products**
- Aluminum Phosphide (Pellets/Tablets) - Restricted Use Pesticides (RUP)
  - Degesch Phostoxin Pellets 72959-5 D & D Holdings, Inc.
  - Degesch Phostoxin Tablets 72959-4 D & D Holdings, Inc.
  - Detia Phos Tablets 72959-4 D & D Holdings, Inc.
  - Fumitoxin® Pellets 72959-2 D & D Holdings, Inc.
  - Fumitoxin® Tablets 72959-1 D & D Holdings, Inc.
  - PH3 Aluminum Phosphide Fumigant Pellets 1015-74 Douglas Products & Packaging Co.
  - Phosfume 2 Aluminum Phosphide Fumigant Pellets 1015-74 Douglas Products & Packaging Co.
  - Weevil-Cide® Tablets 70506-13 United Phosphorus, Inc.
  - Weevil-Cide® Pellets 70506-14 United Phosphorus, Inc.

**Use Directions:** Must create a written Fumigation Management Plan prior to use. A template is available at [http://agr.mt.gov/Topics/Vertebrate-Pests](http://agr.mt.gov/Topics/Vertebrate-Pests). Note that fumigants for prairie dogs often require additional survey work to ensure non-targets and endangered species will not be harmed.

Insert the maximum application of 4 tablets (or 20 pellets) per prairie dog burrow for best results. Note that five pellets = one tablet. Maximum application is 20 pellets OR four tablets per burrow system. Place in outdoor burrows occupied
by the target species, plug with sod, then seal with soil. Best results occur when soil moisture is high. Efficacy is reduced in dry, porous soils which allow gas to escape into soil structure and slows release of phosphine gas from aluminum phosphide fumigants.

**Use Restrictions:** Do not apply product within 100 feet of buildings that may house humans or animals. Do not use in residential, nursing homes, schools, day care facilities and hospital areas. It may be used to treat playing fields. Warning signs must be posted and left for at least two days following the application.

**Limitations:** Cost and labor limit use to small acreages and isolated populations. In addition, you must obtain air testing equipment to monitor phosphine gas levels to ensure applicators are not exposed. Must have an appropriate gas mask available if phosphine gas levels are exceeded.

**Important:** Product may be used year-round and as a follow up to other pesticides. Most applicators find that tablets are easier to handle than pellets. Research suggests that placing two tablets (or ten pellets) in each ground squirrel burrow is sufficient to provide effective control. Most effective when temperatures are above 70° F.
Registered Rodenticides for Voles

Zinc Phosphide Baits – General (GUP) and Restricted Use Pesticides (RUP)

Registered Products

- Eraze™ Ag 12455-131-3240 Motomco, Inc. (Meadow vole; GUP; Bait stations placed within 100 feet of structures only)
- Prozap® Zinc Phosphide Oat Bait 61282-14 Hacco Inc. (RUP)
- Prozap® Zinc Phosphide Pellets 61282-49 Hacco Inc. (RUP)
- Wilco Zinc Ag Bait 36029-10 Wilco Distributors, Inc. (RUP)
- Zinc Phosphide on Oats 4271-16 R & M Exterminators, Inc. (RUP)
- Zinc Phosphide on Oats 56228-14 USDA APHIS Wildlife Services (RUP)
- ZP® AG Oats 12455-102-3240 Motomco, Inc. (RUP)
- ZP® AG Pellets 12455-17-3240 Motomco, Inc. (RUP)
- ZP® Rodent Bait AG 12455-17 Bell Laboratories, Inc. (RUP)
- ZP® Rodent Oat Bait AG 12455-102 Bell Laboratories, Inc. (RUP)

Use Directions: RUP products, depending on label, may be applied to airports, alfalfa fields, bushberries, caneberries, crop borders, cuburbits, ditch banks, golf courses, grain fields, lawns, no-till corn, orchards, nurseries, parks, vineyards and man-made structures. See label for specific areas and times to apply. Application methods, depending on label, include, hand, ground broadcast, trail builder, bait station and aerial broadcast. Bait stations often required when product is applied around structures or highly managed areas, such as golf courses, non-residential lawns and ornaments.

Use Restrictions: Consult the U.S. Fish and Wildlife Service office regarding endangered species that may be in your application area (Helena 406-449-5225). Must wear respirator when loading bait into aircraft or mechanical ground equipment. Do not allow bait to pile. Do not apply when rain or snow is expected within three days of application. Do not graze animals in treated areas. Read labels carefully to be certain that listed uses are legal in Montana.

Limitations: Applications often must be done during dormant, post-harvest stage or well in advance of harvest. Regular monitoring for the presence of voles is essential to ensure that you can control them during the appropriate time window. Do not apply to bare ground or allow bait to pile.

Important: Some labels allow for second application.
Anticoagulant Baits –
Registered Products General Use Pesticides (GUP) All are for control of meadow vole unless otherwise noted. List may not be complete. Many baits labelled for rats and mice will include meadow voles on the label. Read the label carefully to see if the rodenticide handles voles before purchasing. Baits are categorized according to how far away from structures the bait may be applied.
Baits designated as FGAR or NA have lower secondary poisoning risk. Baits labelled as Bitrex have a bittering agent to reduce consumption risk by non-target animals and children.

**50 Feet Restriction**
- Hawk® Rodenticide Pelleted Bait 12455-69-3240 Motomco, Inc. (SGAR)
- Hawk® Rodenticide RTU Place Pacs 12455-76-3240 Motomco, Inc. (SGAR;Bitrex)
- Jaguar® All-Weather Bait Chunx 12455-89-3240 Motomco, Inc. (SGAR;Bitrex)
- Jaguar® Rodenticide Pelleted Bait 12455-90-3240 Motomco, Inc. (SGAR;Bitrex)
- Jaguar® Rodenticide Place Pacs 12455-94-3240 Motomco, Inc. (SGAR;Bitrex)
- Kaput® Rat & Mouse Bait 72500-6 Scimetrics, Inc. (FGAR;Meadow & Montane vole)
- Kaput® Combo Bait Pellets 72500-13 Scimetrics, Inc. (FGAR; Meadow & Montane vole; Fleas)
- Kaput® Combo Bait Mini Blocks 72500-14 Scimetrics, Inc. (FGAR; Meadow & Montane vole; Fleas)
- Rampage® All-Weather Bait Chunx® 12455-95-3240 Motomco, Inc. (NA; Bitrex)
- Rampage® Rodenticide Place Pacs 12455-97-3240 Motomco, Inc. (NA; Bitrex)
- Rodentex Bait Station 61282-19-89459 Central Garden & Pet Company (FGAR; Indoor use Only)
- Tomcat® All-Weather Rodent Bait Chunx 12455-80-3240 Motomco, Inc. (Meadow vole)
- Tomcat® Rat and Mouse Bait 12455-81-3240 Motomco, Inc. (FGAR)
- Tomcat® Rat and Mouse Bait Place Pac 12455-83-3240 Motomco, Inc. (FGAR)

**100 Feet Restriction**
- Boot Hill® Maki Pellets Place Packs 7173-188 Liphatech, Inc. (SGAR)
- Contrac® Rat and Mouse Bait Ready-To-Use Place Pacs 12455-75 Bell Laboratories, Inc. (SGAR)
- Ditrac® All-Weather Blox™ 12455-80 Bell Laboratories, Inc. (FGAR)
- Ditrac® All-weather Cake 12455-5 Bell Laboratories, Inc. (FGAR)
- Generation® Bluemax Mini Blocks 7173-288 Liphatech, Inc. (SGAR)
- Generation® Pellets Place Packs 7173-211 Liphatech, Inc. (SGAR)
- Gunslinger® Mini Blocks 7173-301 Liphatech, Inc. (NA)
- Hawk® All-Weather Bait Chunx 12455-79-3240 Motomco, Inc. (FGAR)
- Hawk® Meal Bait 12455-36-3240 Motomco, Inc. (SGAR)
- Maki® Pellets Place Packs 7173-188 Liphatech, Inc. (SGAR)
- Ramik® bars Mold and Moisture Resistant 61282-12 Hacco, Inc. (FGAR)
- Ramik® Green Mini Bait Pack 61282-23 Hacco, Inc. (FGAR)
- Ramik® Green Bait Packs 61282-48 Hacco, Inc. (FGAR)
- Ramik® Green Kills Rats & Mice Fish Flavored Weather Resistant Rodenticide 61282-46 Hacco, Inc. (FGAR)
- Ramik® Mini Bars All-Weather Rat & Mouse Killer 61282-26 Hacco, Inc. (FGAR)
- Renegade® Meal Bait 7173-238 Liphatech, Inc. (SGAR;Bait station & hand baiting)
- Resolv® Soft Bait 7173-297 Liphatech, Inc. (SGAR)
- Resolv® 40 Soft Bait 7173-297 Liphatech, Inc. (SGAR)
- Resolver® Soft Bait 7173-297 Liphatech, Inc. (SGAR)
- Rodentex® Multi-feed Bars 61282-12-270 Farnam Companies, Inc. (FGAR)
- Rozol® Pellets 7173-151 Liphatech, Inc. (FGAR)
- Tomcat® All-Weather Rodent Block 12455-5-3240 Motomco, Inc. (FGAR)

Registered Products Restricted Use Pesticides (RUP) Labeled for all voles unless otherwise noted.
- BorderLine® 7173-242 Liphatech, Inc. (FGAR) Same formulation as Rozol Vole Bait
Kaput® Mouse Blocks  72500-7  Scimetrics, Inc. (SGAR; Meadow & Montane vole)
PCQ Rodent Bait. 12455-136  Bell Laboratories, Inc. (Meadow vole; Hand, Bait Station & Aerial; FGAR)
Ramik® Brown  61282-45  Hacco, Inc. (Meadow vole; Hand & Aerial baiting Only; FGAR)
Rozol® Vole Bait 7173-242  Liphatech, Inc. (FGAR) Same formulation as BorderLine

Use Directions: GUP baits typically require use of bait stations placed no farther than 100 feet from a structure. Some limit use to within 50 feet of a structure. Cannot use in gardens or where food is produced. Bait must be maintained in the stations for the required period of time. Some products are formulated for wet environments. Some products control fleas as well. RUP baits may be used in fruit tree orchards, nurseries, tree farms, buffer strips, lawns, ornamental turf areas and areas adjacent to crops. May apply by bait stations, spot baiting, ground broadcast baiting or aerial means depending on site. Apply only when weather forecast is rain/snow free for the next three days.

Use Restrictions: Rozol/BorderLine requires consultation with the Endangered Species Bulletins for your application area (http://www2.epa.gov/endangered-species). The Ramik Brown label requires applicators to contact U.S. Fish and Wildlife Service (Helena 406-449-5225) or MT Fish, Wildlife & Parks (Helena 406-841-4000) to ensure that protected species are not in, or will be migrating to, the application area. Do not apply where raptors are feeding on voles. Do not apply to food or feed crops. Do not graze animals in treated areas. Do not use hay cut after application for feed or bedding. Do not apply within 50 feet of any body of water. Do not apply to bare ground.

Limitations: Note that buffer strip applications often have an exclusion zone to prevent the rodenticide from reaching crop areas or water.

Important: In small acreages, use of bait stations can be a cost-effective method.
Caution: Pine voles do not occur in Montana.
SUPPORT FROM THE MONTANA DEPARTMENT OF AGRICULTURE

BULLETINS
Detailed instructions on the management of a variety of vertebrate pests is available for download at http://agr.mt.gov/Topics/Vertebrate-Pests

Topics include but are not limited to:
Pocket Gopher Control Techniques
Prairie Dog Control
The Columbian Ground Squirrel - Its Biology and Control
The Richardson Ground Squirrel - Its Biology and Control
Voles in Montana – Their Biology, Damage, and Control

MONTANA POISON CONTROL
(Emergencies) 1-800-222-1222
MONTANA DEPARTMENT OF PUBLIC HEALTH & HUMAN SERVICES
Injury Prevention Program
1-406-444-4126

FOR ADDITIONAL INFORMATION ON OR ASSISTANCE WITH THE MANAGEMENT OF RODENTS OR OTHER VERTEBRATE PESTS, CONTACT

Montana Department of Agriculture
Vertebrate Pest Program
Helena, MT  59620-0201
(406) 444-5400

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Disclaimer: Reference to commercial products or trade names is made with the understanding that no discrimination is intended of those not mentioned and no endorsement by the Montana Department of Agriculture is implied for those mentioned.

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