

William W. Jacobs
Registration Division
Office of Pesticide Programs
US Environmental
Protection Agency
Washington, DC 20460

PESTICIDES FEDERALLY REGISTERED FOR CONTROL OF TERRESTRIAL VERTEBRATE PESTS

This report lists the pesticide formulations federally registered for use in controlling vertebrate organisms discussed in this manual. The tables which follow indicate the chemicals registered, the types of formulations available, the number of registered products (as of winter 1993) for each type of formulation, and significant special factors which must be considered prior to using a particular type of product.

Species which represent closely related taxonomic groups or similar classes of pests may be listed in the same table. For example the Norway rat, the roof rat, and the house mouse are placed in one table because they are closely related and many labels bear claims for control of all three species. Similarly, products bearing claims for control of ground squirrels are listed in a single table even though some labels claim control of only one or two types. Although these factors have resulted in some adjustments, the order in which registered formulations are listed generally follows the table of contents of this manual (Table 1).

Tables 2 through 23 below do not include products registered, under Section 24(c) of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), for use in individual states because of special local needs. The most common Special Local Needs registrations for controlling vertebrate pests are chlorophacinone and diphacinone baits used in post-harvest applications to control voles in orchards or to control ground squirrels. State agencies responsible for regulating pesticides and extension specialists can provide information on the products available only in their states. California residents may consult their county agricultural commissioners.

The tables also do not list products which have been or are currently available under the emergency exemption provisions (Section 18) of FIFRA. Extension specialists can provide information on products which are temporarily available for emergency situations.

Federal registration certifies that it is legal to market and use the product in question in the United States, subject

to the conditions and restrictions stipulated on the approved label. Federal registration does not guarantee that a particular chemical or product will be available throughout the United States or even that the product will actually be marketed. If a particular product cannot be found in a local outlet, the manufacturer should be contacted. If the name of the manufacturer is not known, it can be obtained from your local extension specialist or from Product Management Team 14, Registration Division (H7505C), Office of Pesticide Programs, US Environmental Protection Agency, Washington, DC 20460.

Federal registration does not guarantee that a particular pesticide will be effective in controlling a specific pest in every possible situation. This handbook offers guidance for selecting the proper course of action for resolving a particular problem. The product label provides directions for using the product to your best advantage in an environmentally safe manner. Users should read labels carefully before proceeding, and should consult with



PREVENTION AND CONTROL OF WILDLIFE DAMAGE — 1994

**Cooperative Extension Division
Institute of Agriculture and Natural Resources
University of Nebraska - Lincoln**

**United States Department of Agriculture
Animal and Plant Health Inspection Service
Animal Damage Control**

**Great Plains Agricultural Council
Wildlife Committee**

extension agents if any questions remain after the appropriate section of this manual and the product label have been read.

In the tables which follow, most products are identified as “baits.” “Baits” are formulations which are designed to be consumed by the target pests. Baits may be “dry” formulations such as whole grains or pelleted grain mixtures treated with a toxicant, or liquid formulations to be presented for target organisms to drink. “Weather-resistant” baits are dry baits treated with a material such as paraffin which is intended to make the baits resistant to the effects of excessive moisture and/or heat.

“Technical” products consist of the active ingredient in pure or relatively pure form. Technicals are usually sold for manufacturing purposes only, but there are a few (see Tables 2 through 23) which can legally be mixed into baits or other types of formulations and applied as pest control agents. Tables 2 through 23 list the available technical vertebrate pesticide formulations only once. Technicals are listed with products for control of commensal rodents (Table 4), unless the chemical in question is not registered for control of Norway rats, roof rats, or house mice. Other technicals are also listed once — under the heading for the type of pests which comprise the principal vertebrate target species grouping for the chemicals in question. Technicals bearing use claims are listed in tables for each pest type claimed.

Products identified as “concentrates” are formulated with active ingredient strengths lower than those found in technicals but higher than the concentrations which are used in pest control applications. Concentrates are of two types. One type is sold for manufacturing or formulating purposes only. The labels for these products bear no use directions. It is unlawful to use such products directly in pest control operations. Such concentrates can be formulated into products which can be registered and sold as pesticides. The second type of concentrate bears label

directions for mixing and applying the product. In vertebrate pest control, this type of concentrate enables the experienced worker to mix baits suited to the control of a particular infestation.

“Restricted Use Pesticides” are products which may be used only by persons who have been trained and certified to use them. Nearly all pesticide-user certification programs are run by state governments. A pesticide may be classified as “restricted” because the US Environmental Protection Agency has determined that the product is highly toxic and must be handled especially carefully or that special training is necessary to ensure that the material is used effectively or in a safe manner.

Other significant terms in the tables are consistent with their use elsewhere in this manual.

Within a species grouping, products are classed under use category headings such as “Toxicant,” “Fumigant,” and “Repellent.” In some cases, prod-

ucts of different formulations or even different chemical compositions have been grouped together as one table entry. Such grouping has occurred for gas cartridge fumigants with more than one product for a species or type and for “polybutene” bird repellents.

The abbreviation “Conc.” in Tables 2 through 23 stands for “concentration.”

In Tables 2 through 23, the column titled “Use Considerations and Restrictions” highlights factors that must be considered in determining whether a product is appropriate for use in a given situation. These limitations are fully explained on product labels. Do not use any pesticide until you have thoroughly read and understood its label.

Acknowledgments

The author wishes to thank William Erickson and Barbara Madden for assistance in updating the lists of vertebrate pesticides.

Table 1. Tables where federally registered pesticide formulations for controlling terrestrial vertebrates can be found.

Animal Type(s)	Table Number	Animal Type(s)	Table Number
Beavers	2	Coyotes	16
Chipmunks	13	Dogs	15, 16
Gophers, Pocket	3	Foxes	16
Mice, Deer	6	Mink	None
Mice, Harvest	None	Mountain Lions	None
Mice, House	4	Raccoons	None
Mice, Pocket	6	River Otters	None
Mice, White-footed	6	Skunks	17
Mountain Beavers	None	Weasels	None
Muskrats	7	Wolves	None
Nutria	7	Armadillos	None
Porcupines	8	Bats	18
Prairie Dogs	9	Deer	19
Rats, Cotton	10	Elk	19
Rats, Kangaroo	10	Moles	20
Rats, Norway	4	Opossums	None
Rats, Polynesian	5	Pronghorn Antelope	None
Rats, Roof	4	Pigs, Wild	None
Rats, Water	10	Rabbits	21
Woodrats	10	Hares	21
Squirrels, Ground	11	Shrews	None
Squirrels, Tree	14	Birds	22
Voles	6	Alligators	None
Woodchucks	12	Crayfish	None
Badgers	None	Frogs & Toads	None
Bears	None	Salamanders	None
Bobcats	None	Snakes	23
House Cats	15	Turtles	None

Table 2. Pesticide federally registered to repel *beavers*.

DENATONIUM SACCHARIDE				
Conc.	Product Form	No. of Products	Use Considerations and Restrictions	
0.065%*	Liquid	1	Taste repellent used to protect trees, poles, fences, siding, outdoor furniture, shrubs, ornamentals, grass, flowers, and garbage	

* Also contains 0.035% thymol

Table 3. Pesticides federally registered to control *pocket gophers*.**TOXICANTS****CHLOROPHACINONE (RoZol)**

Conc.	Product Form	Species	No. of Products	Use Considerations and Restrictions
0.005%	Dry bait	<i>Geomys</i> spp. <i>Thomomys</i> spp.	1	Subterranean applications

DIPHACINONE (Eaton's Answer)

Conc.	Product Form	Species	No. of Products	Use Considerations and Restrictions
0.005%	Dry bait (block)	<i>Geomys bursarius</i> <i>Thomomys bottae</i> <i>T. talpoides</i> <i>T. mazama</i> <i>T. bulbivorous</i> <i>T. monticola</i> <i>T. townsendii</i>	1	Subterranean applications

STRYCHNINE ALKALOID

Conc.	Product Form	Species	No. of Products	Use Considerations and Restrictions*
0.25%-0.5%	Dry baits	<i>Geomys</i> spp. <i>Thomomys</i> spp.	5	Manual subterranean applications only
0.35%	Dry bait	Unspecified	1	Manual subterranean applications only
0.5%	Dry baits	Plains Desert Yellow-faced Northern Southern Mazama Mountain Townsend's Botta Camas	2	Manual subterranean applications only
0.31%-0.5%	Dry baits	<i>Geomys</i> spp. <i>Thomomys</i> spp.	3	Restricted Use Pesticides Subterranean applications
0.5%	Dry baits	<i>Thomomys</i> spp.	2	Restricted Use Pesticides Subterranean applications
0.5%	Dry baits	Plains Yellow-faced Northern Southern Mazama Mountain Townsend's Botta Camas	2	Restricted Use Pesticides Subterranean applications
0.35%	Dry bait	Unspecified	1	Restricted Use Pesticide Subterranean applications
98.4%-100%	Technical		1	Manufacturing use

* Strychnine alkaloid pocket gopher baits are classified as "Restricted Use Pesticides" if their labels permit applications by machine-drawn burrow builders. All strychnine alkaloid pocket gopher baits must be applied underground.

Table 3. (Continued)**ZINC PHOSPHIDE**

Conc.	Product Form	Species	No. of Products	Use Considerations and Restrictions
2%	Dry baits (bulk)	<i>Geomys</i> spp. <i>Thomomys</i> spp.	6	Subterranean use
2%	Dry bait (placepack)	<i>Geomys</i> spp. <i>Thomomys</i> spp.	1	Subterranean use
2%	Dry baits	<i>Geomys bursarius</i> <i>Geomys pinetis</i> <i>Pappogeomys castanops</i> <i>Thomomys</i> spp.	2	Restricted Use Pesticides*

* Products are classified as "Restricted Use Pesticides" due to directions on labels for using burrow builders and claims for control of species other than pocket gophers for which zinc phosphide baits are "restricted."

FUMIGANTS**ALUMINUM PHOSPHIDE (Phostoxin)**

Conc.	Product Form	Species	No. of Products	Use Considerations and Restrictions
55%-60%	Tablets, Pellets, or Bags	Unspecified	16	Restricted Use Pesticides for treating burrows

GAS CARTRIDGES (many active ingredients)

Conc.	Product Form	Species	No. of Products	Use Considerations and Restrictions
Various	Ignitable cartridges	Unspecified	4	For treating burrows

Table 4. Pesticides federally registered to control commensal rodents: Norway rats, roof rats, house mice.

CHRONIC TOXICANTS

BRODIFACOUM (Talon) - 3-[3-(4'-bromo[1,1'-biphenyl]4-yl)-1,2,3,4-tetra-hydro-1-naphthalenyl]4-hydroxy-2H-1-benzopyran-2-one

Conc.	Product Form	No. of Products	Species Claimed			Use Considerations and Restrictions
			Norway rat	Roof rat	House mouse	
0.005%	Dry baits (bulk)	7	X	X	X	In and around buildings
0.005%	Dry baits (in placepacks)	14	X	X	X	In and around buildings
0.005%	Dry baits (in bait trays)	2	X	X	X	In and around buildings
0.005%	Dry baits (in nonprotective bait dispensers)	4			X	In and around buildings
0.005%	Dry bait (in tamper-resistant bait stations)	1			X	In and around buildings
0.005%	Weather-resistant baits	2	X	X	X	In and around buildings, sewers
0.25%	Concentrate	1				Formulating use
90%	Technical	1				Manufacturing use

BROMADIOLONE (Maki, Contrac) - 3-[3-(4'-bromo[1,1'-biphenyl]4-yl)-3-hydroxy-1-phenylpropyl]-4-hydroxy-2H-1-benzopyran-2-one

Conc.	Product Form	No. of Products	Species Claimed			Use Considerations and Restrictions
			Norway rat	Roof rat	House mouse	
0.005%	Dry baits (bulk)	7	X	X	X	In and around urban buildings; indoor use only in other areas
0.005%	Dry bait (bulk)	1			X	In and around urban buildings. Indoor use only in other areas.
0.005%	Dry baits (in placepacks)	5	X	X	X	In and around urban buildings. Indoor use only in other areas.
0.005%	Dry bait (in non-protective bait dispensers)	1			X	In and around urban buildings. Indoor use only in other areas.
0.005%	Weather-resistant baits	3	X	X	X	In and around urban buildings. Indoor use only in other areas.
1.0%	Concentrates	2				Formulating use
93.5%-96.5%	Technicals	2				Manufacturing use

CALCIUM SALT OF PMP - 2-isovaleryl-1,3-indandione, calcium salt

Conc.	Product Form	No. of Products	Species Claimed			Use Considerations and Restrictions
			Norway rat	Roof rat	House mouse	
2.18%	Tracking powder	1	X	X	X	

CHLOROPHACINONE (RoZol) - 2-[(p-chlorophenyl)phenylacetyl]-1,3-indandione

Conc.	Product Form	No. of Products	Species Claimed			Use Considerations and Restrictions
			Norway rat	Roof rat	House mouse	
0.005%	Dry baits (bulk)	5	X	X	X	
0.005%	Dry baits	2	X	X	X	
0.005%	Weather-resistant bait	1	X	X	X	
0.2%	Tracking powders	2	X	X	X	Restricted Use Pesticides
0.28%	Mineral oil concentrate	1	X	X	X	For mixing dry baits
2%	Concentrate	1				Formulating use
96.03%	Technical	1				Manufacturing use

Table 4. (Continued)**CHOLECALCIFEROL* (Quintox) 9,10-secholesta-5,7,10(19)-trein-3-betaol**

Conc.	Product Form	No. of Products	Species Claimed			Use Considerations and Restrictions
			Norway rat	Roof rat	House mouse	
0.075%	Dry bait (bulk)	1	X	X	X	In and around buildings
0.075%	Dry bait (bulk)	1			X	In and around buildings
0.075%	Dry bait (placepacks)	1	X	X	X	In and around buildings
0.075%	Dry bait (placepacks)	1			X	In and around buildings

* Cholecalciferol is the only chronic poison listed in this table that is not an anticoagulant.

DIPHACINONE (Ditrac, Ramik) - 2-(diphenylacetyl)-1,3-indandione

Conc.	Product Form	No. of Products	Species Claimed			Use Considerations and Restrictions
			Norway rat	Roof rat	House mouse	
0.005%	Dry baits (bulk)	13	X	X	X	
0.005%	Dry baits (in placepacks)	6	X	X	X	
0.005%	Dry bait (in non-protective bait stations)	1			X	
0.005%	Weather-resistant dry baits	13	X	X	X	Can be used in damp/moist areas
0.005%	Weather-resistant dry baits	11	X	X		Can be used in damp/moist areas
0.1%	Concentrates	3	X	X	X	Mixing dry baits
0.1%	Concentrates	2	X	X	X	Manufacturing use
0.2%	Tracking powders	2	X	X	X	Restricted Use Pesticides
2.0%	Concentrate	1				Formulating use
98.0%-98.6%	Technical	3				Manufacturing use

SODIUM SALT OF DIPHACINONE

0.1%	Concentrate	1	X	X	X	Mixing dry baits
0.106%	Concentrates	2	X	X	X	Mixing liquid baits

PIVALYL (Pival, Pindone) - 2-pivalyl-1,3-indandione

Conc.	Product Form	No. of Products	Species Claimed			Use Considerations and Restrictions
			Norway rat	Roof rat	House mouse	
0.025%	Dry baits (bulk)	6	X	X	X	
0.025%	Dry baits	2	X	X		
0.30%	Concentrate	1	X	X	X	Mixing liquid and dry baits
0.50%	Concentrates	2	X	X	X	Mixing dry baits
100%	Technical	1				Manufacturing use

SODIUM SALT OF PIVALYL

0.14%	Concentrates	2	X	X	X	Mixing liquid baits
1.5%	Concentrate	1	X	X	X	Mixing liquid baits
100%	Technical	1				Formulation use

PIVALYL AND SODIUM SALT OF PIVALYL MIXTURE

0.11% Pivalyl 0.15% Sodium salt	Dry bait	1	X	X	X	
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Table 4. (Continued)**WARFARIN - 3-(α -acetylbenzyl)-4-hydroxycoumarin**

Conc.	Product Form	No. of Products	Species Claimed			Use Considerations and Restrictions
			Norway rat	Roof rat	House mouse	
0.025%	Dry baits (bulk)	23	X	X	X	In and around buildings
0.025%	Dry bait (bulk)	1			X	In and around buildings
0.025%	Dry baits (in placepacks)	4	X	X	X	In and around buildings
0.025%	Dry baits (in bait trays)	2	X	X	X	In and around buildings
0.025%	Dry bait (in nonprotective bait stations)	1	X	X	X	
0.025%	Weather resistant	1	X	X	X	In and around buildings and in sewers
0.054%	Dry bait (in nonprotective bait stations)	1			X	In and around buildings
0.3%	Concentrate	1	X	X	X	Mixing dry baits
0.5%	Concentrates	2	X	X	X	Mixing dry baits
0.5%	Concentrates	4				Formulating use
5%	Concentrate	1				Manufacturing use
50%	Technical (encapsulated)	1				Manufacturing use
99.9%-100%	Technicals	5				Manufacturing use

SODIUM SALT OF WARFARIN

0.54%	Concentrate	1	X	X	X	Mixing liquid baits
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ACUTE TOXICANTS**BROMETHALIN (Assault, Vengeance) - N-methyl-2,4-dinitro-N-(2,4,6-tribromophenyl)-6-(trifluoromethyl) benzenamine**

Conc.	Product Form	No. of Products	Species Claimed			Use Considerations and Restrictions
			Norway rat	Roof rat	House mouse	
0.005%	Dry bait (bulk)	1	X		X	In and around buildings, alleys
0.01%	Dry baits (bulk)	2	X	X	X	In and around buildings, alleys
0.01%	Dry bait (bulk)	1			X	In and around buildings, alleys
0.01%	Dry baits (in placepacks)	3	X	X	X	In and around buildings, alleys
0.01%	Dry bait (in placepacks)	1	X	X		In and around buildings, alleys
0.01%	Dry bait (in placepacks)	1			X	In and around buildings, alleys
0.01%	Dry bait (in nonprotective bait stations)	1			X	Indoor use only
0.01%	Weather-resistant bait	1	X	X		In and around buildings, alleys
1.5%	Concentrate	1				Formulating Use
2%	Concentrate	1				Formulating Use

Table 4. (Continued)

REDSQUILL						
Conc.	Product Form	No. of Products	Species Claimed			Use Considerations and Restrictions
			Norway rat	Roof rat	House mouse	
10%	Bait in caulking tube	1	X	X		
ZINC PHOSPHIDE						
Conc.	Product Form	No. of Products	Species Claimed			Use Considerations and Restrictions
			Norway rat	Roof rat	House mouse	
1.0%	Dry bait	1	X	X	X	Restricted Use Pesticide - structural
1.88%-2%	Dry baits	2	X	X	X	Restricted Use Pesticides - sugarcane
1.88%-2%	Dry baits	5	X	X	X	Restricted Use Pesticides - sugarcane and other uses
1.88%-2%	Dry baits	3	X	X	X	Structural uses only
2%	Dry bait	1	X		X	Structural uses only
2%	Dry bait	1	X	X	X	Restricted Use Pesticide - structural
10%	Tracking powders	2			X	Restricted Use Pesticides - indoor use
63.2%	Concentrate	1	X	X		Restricted Use Pesticide for making baits
74.7%	Concentrate	1	X	X	X	Restricted Use Pesticide for making baits
80%-94%	Technicals	2	X	X	X	Restricted Use Pesticides for making baits
80%-94%	Technicals	5				Manufacturing use
FUMIGANTS						
ALUMINUM PHOSPHIDE (Phostoxin)						
Conc.	Product Form	No. of Products	Species Claimed			Use Considerations and Restrictions
			Norway rat	Roof rat	House mouse	
55%-60%	Tablets, pellets, or bags	18	X	X	X	Restricted Use Pesticides for treating burrows
CHLOROPICRIN (Chlor-o-pic)						
99%	Liquids	2	X	X	X	Restricted Use Pesticides for treating structures
GAS CARTRIDGES (Many active ingredients)						
Various	Ignitable cartridges w/fuse	2	X			For treating burrows
METHYL BROMIDE (Brom-o-gas)						
98%-100%*	Gases	16	X	X	X	Restricted Use Pesticides for treating structures
* Some products contain small amounts of chloropicrin.						
REPELLENT						
DENATONIUMSACCHARIDE (Ro-pel)						
0.065%*	Liquid	1	X	X	X	Taste repellent used on trees, poles, fences, shrubs, garbage, and other objects

* Also contains 0.035% thymol

Table 5. Pesticides federally registered to control *polynesian rats*.*

ACUTE TOXICANT

ZINCPHOSPHIDE

Conc.	Product Form	No. of Products	Use Restrictions and Considerations
1.88%-2%	Dry baits**	5	Restricted Use Pesticides for use in sugarcane fields

* In the United States, this species is found only in Hawaii.

** Prebaiting is recommended.

Table 6. Pesticides federally registered to control *native mice (voles, deer mice, and others)*

TOXICANTS

ZINCPHOSPHIDE

Conc.	Product Form	Species	No. of Products	Use Considerations and Restrictions
1.0%	Dry bait	Meadow voles Pine voles	1	Restricted Use Pesticide for post-harvest use in orchards and other sites
1.82%	Dry bait	Voles (<i>Microtus</i> spp.)	1	Restricted Use Pesticide for post-harvest use in orchards and noncrop areas
1.82%	Dry bait	Meadow voles Prairie voles Pine voles White-footed mice	1	Restricted Use Pesticide for post-harvest use in orchards and other sites
1.88%	Dry bait	Meadow voles Pine voles	1	Restricted Use Pesticide for post-harvest use in orchards and other sites
2.0%	Dry bait	Meadow voles Pine voles	1	Restricted Use Pesticide for post-harvest use in apple orchards
2.0%	Dry bait	<i>Microtus</i> spp. <i>Peromyscus</i> spp.	1	Restricted Use Pesticide for use in grape vineyards, orchards, and other sites
2.0%	Dry baits	Meadow voles Pine voles White-footed mice	3	Restricted Use Pesticides for post-harvest use in orchards and other sites
2.0%	Dry bait	Meadow voles Pine voles	1	Restricted Use Pesticide for post-harvest use in orchards and other sites
2.0%	Dry bait	Meadow voles Pine voles White-footed mice Pocket mice	1	Restricted Use Pesticide for post-harvest use in orchards and other sites
2.0%	Dry baits	Meadow voles Prairie voles Pine voles White-footed mice Meadow jumping mice	3	Restricted Use Pesticides for use in grape vineyards, orchards, and other sites
62%	Concentrate	"Orchard mice"	1	For making baits with "cubed apples"
63.2%	Concentrate	Meadow voles Pine voles White-footed mice	1	Restricted Use Pesticide for making baits with "cubed apples" for post-harvest use in orchards

Table 6. (Continued)**FUMIGANTS****ALUMINUM PHOSPHIDE (Phostoxin)**

Conc.	Product Form	Species	No. of Products	Use Considerations and Restrictions
55%-60%	Tablets, pellets, or bags	Voles	16	Restricted Use Pesticides for treating burrows

REPELLENTS**CAPSAICIN**

Conc.	Product Form	Species	No. of Products	Use Considerations and Restrictions
2.5%	Liquid	Meadow voles Pine voles	1	Ornamental trees, shrubs, dormant fruit and nut trees, vines, and certain crops

THIRAM

Conc.	Product Form	Species	No. of Products	Use Considerations and Restrictions
7%	Liquids	"Meadow mice"	2	Ornamental plants and trees
20%	Liquid concentrates	"Meadow mice"	3	Nursery stock, ornamentals, fruit trees, and other sites

NOTE: Labels vary in the use of common or scientific names for native mice. This table generally portrays species claims as they appear on the labels. Scientific names are used in this table only if common names for species do not appear on labels. The term "pine vole" refers to *Microtus* (or *Pitymys*) *pinetorum*. "Meadow vole" technically refers only to *Microtus pennsylvanicus*, but at times has been applied to other *Microtus* species (except *M. pinetorum*). *Peromyscus* species include deer mice and white-footed mice, and related types. Pocket mice are Heteromyid rodents of the genus *Perognathus*. Jumping mice are of the genus *Zapus*. "Orchard mice" — a poorly descriptive term — is taken to include voles and *Peromyscus* species.

Table 7. Pesticide federally registered to control *muskrats* and *nutria*.

TOXICANT				
ZINC PHOSPHIDE				
Conc.	Product Form	Species	No. of Products	Use Considerations and Restrictions
63.2%	Concentrate	Muskrats Nutria	1	Restricted Use Pesticide for making baits to be placed on floating rafts

NOTE: This is a grouping of convenience due to ecological similarities between muskrats and nutria. It is not a taxonomic grouping.

Table 8. Pesticide federally registered to repel *porcupines*.

REPELLENT				
CAPSAICIN				
Conc.	Product Form	Number of Products	Use Considerations and Restrictions	
2.5%	Liquid concentrate	1	To be applied to maple sap collection equipment	

Table 9. Pesticides federally registered to control *prairie dogs*.

TOXICANTS				
ZINC PHOSPHIDE				
Conc.	Product Form	Species	No. of Products	Use Considerations and Restrictions
1.88%-2.0%	Dry baits*	Black-tailed White-tailed Gunnison	7	Restricted Use Pesticides

* Prebaiting is recommended.

FUMIGANTS				
ALUMINUM PHOSPHIDE (Phostoxin)				
Conc.	Product Form	Species*	No. of Products	Use Considerations and Restrictions
55%-60%	Tablets, pellets, or bags	Black-tailed White-tailed Gunnison	16	Restricted Use Pesticides for treating burrows

* Labels claim "Prairie dogs (except Utah prairie dogs)."

GAS CARTRIDGE (many active ingredients)				
Conc.	Product Form	Species	No. of Products	Use Considerations and Restrictions
Various	Ignitable cartridge	Unspecified	1	For treating burrows

Table 10. Pesticides federally registered to control *native rats (woodrats, cotton rats, kangaroo rats, and others).*

TOXICANTS				
ZINC PHOSPHIDE				
Conc.	Product Form	Species	No. of Products	Use Considerations and Restrictions
2.0%	Dry baits	Cotton rats Rice rats Florida water rats Merriam's, Ord's, & banner-tailed kangaroo rats	3	Restricted Use Pesticides for use in sugarcane (first three claims) and rangeland vegetation and noncrop areas (latter three claims)
2.0%	Dry bait	Cotton rats	1	Trees and grassy areas (implied)
2.0%	Dry bait	Cotton rats	1	Sugarcane
2.0%	Dry bait	Cotton rats Rice rats	1	Sugarcane

Table 11. Pesticides federally registered to control *ground squirrels.*

TOXICANTS				
ZINC PHOSPHIDE				
Conc.	Product Form	Species	No. of Products	Use Considerations and Restrictions
1.0%	Dry bait*	Columbian Richardson's 13-lined	1	Restricted Use Pesticide
1.88%	Dry bait*	California Richardson's 13-lined	1	Restricted Use Pesticide
2.0%	Dry bait*	California	1	Restricted Use Pesticide
2.0%	Dry baits*	California Columbian Richardson's 13-lined	3	Restricted Use Pesticides
2.0%	Dry bait*	Belding's California Columbian Golden-mantled Richardson's 13-lined Townsend's Uinta Washington	1	Restricted Use Pesticide

* Prebaiting is recommended.

FUMIGANTS

ALUMINUM PHOSPHIDE (Phostoxin)

Conc.	Product Form	Species	No. of Products	Use Considerations and Restrictions
55%-60%	Tablets, Pellets, or Bags	Unspecified	16	Restricted Use Pesticides for treating burrows

GAS CARTRIDGES (many active ingredients)

Conc.	Product Form	Species	No. of Products	Use Considerations and Restrictions
Various	Ignitable cartridges	Unspecified	6	For treating burrows

Table 12. Pesticides federally registered to control *woodchucks* and *yellowbelly marmots (rockchucks)*.**FUMIGANTS****ALUMINUMPHOSPHIDE (Phostoxin)**

Conc.	Product Form	Species	No. of Products	Use Considerations and Restrictions
55%-60%	Tablets, pellets, or bags	Woodchucks Yellowbelly marmots	16	Restricted Use Pesticides for treating burrows

GAS CARTRIDGES (many active ingredients)

Conc.	Product Form	Species	No. of Products	Use Considerations and Restrictions
Various	Ignitable cartridges	Woodchucks	4	For treating burrows

NOTE: Consult state and local wildlife laws before using any pesticide to control woodchucks or yellowbelly marmots.

Table 13. Pesticides federally registered to control *chipmunks*.**FUMIGANTS****ALUMINUMPHOSPHIDE (Phostoxin)**

Conc.	Product Form	Species	No. of Products	Use Considerations and Restrictions
55%-60%	Tablets, pellets, or bags	Unspecified	16	Restricted Use Pesticides for treating burrows

REPELLENT**THIRAM**

Conc.	Product Form	Species	No. of Products	Use Considerations and Restrictions
21%	Liquid	Unspecified	1	Shrubs, ornamentals, and dormant fruit trees

Table 14. Products federally registered to control *tree squirrels*.

REPELLENTS

CAPSAICIN

Conc.	Product Form	Species	No. of Products	Use Considerations and Restrictions
2.5%	Liquid concentrate	Gray squirrels "Black" squirrels Fox squirrels Red squirrels	1	To be applied to maple sap collection equipment

DENATONIUM SACCHARIDE (Ro-pel)

Conc.	Product Form	Species	No. of Products	Use Considerations and Restrictions
0.065%*	Liquid	Unspecified squirrels	1	Taste repellent used to protect seeds, bulbs, trees, poles, fences, siding, outdoor furniture, shrubs, ornamentals, grass, flowers, and garbage

* Also contains 0.035% Thymol

NAPHTHALENE

Conc.	Product Form	Species	No. of Products	Use Considerations and Restrictions
100%	Flakes	Unspecified squirrels	1	Attics, wall, and floor voids

POLYBUTENES

Conc.	Product Form	Species	No. of Products	Use Considerations and Restrictions
90%	Tacky gel	Unspecified squirrels	1	Buildings and "adjacent inanimate structures"

Table 15. Federally registered *dog* and *cat* repellents.

PRODUCTS CLAIMED TO PROVIDE INDOOR OR OUTDOOR AREA OR SPOT REPELLENCY, CESSATION OF URINATION OR DEFECATION, OR PROTECTION OF GARBAGE CONTAINERS				
ANISE, OIL OF				
Conc.	Product Form	Species	No. of Products	Use Considerations and Restrictions
1.6%	Liquid	Dogs and cats	1	Outdoor use to prevent defecation, urination, and digging (cats only) in lawns, gardens, and flower and shrub beds
d-LIMONENE				
Conc.	Product Form	Species	No. of Products	Use Considerations and Restrictions
4.015%*	Granular	Dogs	1	Outdoor use to prevent defecation in lawns, flower gardens, driveways, sidewalks, and other areas
* Also contains 0.049% dihydro-5-heptyl-2(3H)-furanone and 0.024% dihydro-5-pentyl-2(3H)-furanone				
METHYLNONYL KETONE*				
Conc.	Product Form	Species	No. of Products	Use Considerations and Restrictions
0.08%	Granular	Dogs and cats	1	Outdoor use to repel from ornamental plants, trees, shrubs, flowers, and vegetables
1.8%	“Water crystals”	Dogs and cats	1	Outdoor use to prevent urination and defecation on or near trees, shrubs, and flowers, or in yards
1.9%	Sprays	Dogs only	1	Indoor use to protect rugs and furniture and/or outdoor use to prevent urination or defecation on or near trees, shrubs, and flowers, or in yards, and (in some cases) to repel dogs and cats from garbage cans and/or trash bags
		Cats only	1	
		Dogs and cats	31	
1.9%	Granulars	Dogs and cats	2	Outdoor use to protect trees, shrubbery, lawns, and flower beds from urination or defecation, and to repel dogs and cats from garbage cans
47.5%-95%	Concentrates or Technicals		3	Manufacturing use
* Methyl nonyl ketone products also contain compounds “related” to methyl nonyl ketone at an aggregate concentration of about 5% of the concentration declared for methyl nonyl ketone.				
NAPHTHALENE				
Conc.	Product Form	Species	No. of Products	Use Considerations and Restrictions
15%*	Granular	Dogs	1	Outdoor use to repel dogs from lawns, flowers, shrubs, and fences
* Also contains 5.0% dried blood, 4.0% thiram, and 0.5% nicotine.				
TOBACCO DUST				
Conc.	Product Form	Species	No. of Products	Use Considerations and Restrictions
70%*	Dry mixtures	Dogs	2	Border treatment for protecting trees, shrubs, and vegetable gardens
* Also contains 15% dried blood and 15% naphthalene.				
NO-CHEW PRODUCT				
BITREX				
Conc.	Product Form	Species	No. of Products	Use Considerations and Restrictions
0.065%*	Spray	Dogs	1	For use on furniture, rugs, and other “household articles”
* Also contains 1.3% thymol, and 1.3% essential oils.				

Table 15 (Continued)**ATTACK REPELLENTS****CAPSAICIN (Oleoresin of Capsicum)**

Conc.	Product Form	Species	No. of Products	Use Considerations and Restrictions
0.35%-1.0%	Sprays	Dogs	4	Protection from attack

DENATONIUM SACCHARIDE (Ro-pel)

Conc.	Product Form	Species	No. of Products	Use Considerations and Restrictions
0.065%*	Liquid	Dogs and cats	1	For use on trees, poles, fences, siding, outdoor furniture, similar objects, shrubs, ornamental plants, grass, flowers, and garbage

* Also contains 0.035% Thymol

Table 16. Pesticides federally registered to control coyotes, foxes, and wild dogs.**TOXICANTS****SODIUM CYANIDE**

Conc.	Product Form	No. of Products	Species	Use Considerations and Restrictions*
88.78%	Powder packed in capsules	1	Coyotes Wild dogs	Restricted Use Pesticide for use in M-44 ejector device (livestock protection only)
91.06%	Powder packed in capsules	1	Coyotes Gray fox Red fox Wild dogs	Restricted Use Pesticide for use in M-44 ejector device (livestock protection only)
91.06%	Powder packed in capsules	4	Coyotes Gray fox Red fox Wild dogs	Restricted Use Pesticide for use in M-44 ejector device (livestock and endangered species protection)
91.06%	Powder packed in capsules	1	Coyotes Gray fox Red fox Wild dogs	Restricted Use Pesticide for use in M-44 ejector device (livestock and endangered species protection, and control of vectors of communicable diseases)

* Consult specific labels and technical bulletins for information pertaining to where products may be used, who may use them, and detailed restrictions on use. Specific training and state certification is required.

SODIUM FLUOROACETATE (Compound 1080)

Conc.	Product Form	No. of Products	Species	Use Considerations and Restrictions*
1.00%-1.04%	Solutions in "Livestock Protection Collar"	6	Coyotes	Restricted Use Pesticides with specific training and state certification required (collars are placed on necks of sheep and goats in fenced pastures)
90.0%	Technical	1	None	May only be used to formulate solutions for federally registered "Livestock Protection Collars"

* Consult specific labels and technical bulletins for information pertaining to where products may be used, who may use them, and detailed restrictions on use

FUMIGANT**GAS CARTRIDGE (many active ingredients)**

Conc.	Product Form	No. of Products	Species	Use Considerations and Restrictions
Various*	Ignitable cartridge	1	Coyotes	For use in dens only

* Also contains 35% charcoal.

Table 17. Pesticides federally registered to control *skunks*.

FUMIGANTS

GAS CARTRIDGES (many active ingredients)

Conc.	Product Form	Species	No. of Products	Use Considerations and Restrictions
Various	Ignitable cartridges	Unspecified skunks	2	For treating burrows

Table 18. Pesticides federally registered to control *bats*.

REPELLENTS

NAPHTHALENE

Conc.	Product Form	Species	No. of Products	Use Considerations and Restrictions
100%	Flakes	Unspecified bats	4	For use in attics and wall voids

Table 19. Pesticides federally registered to repel deer and elk.

AMMONIUM SOAPS OF HIGHER FATTY ACIDS (Hinder)				
Conc.	Product Form	Species	No. of Products	Use Considerations and Restrictions
15%	Liquid concentrate	Unspecified deer	1	Fruit trees, vines, field crops, forage crops, grain crops, ornamentals, nursery stock, vegetables, and noncrop areas
15%	Liquid concentrate	Unspecified deer	1	Flowers, trees, vines, lawns, ornamentals, and vegetables
BONE TAR OIL (Magic Circle)				
Conc.	Product Form	Species	No. of Products	Use Considerations and Restrictions
93.75%	Liquid concentrate	Unspecified deer	1	Grain and forage crops, fruit and shade trees, shrubs, flowers, vegetable gardens, and nursery stock
CAPSAICIN (Hot Sauce)				
Conc.	Product Form	Species	No. of Products	Use Considerations and Restrictions
2.5%	Liquid concentrate	"Deer"	1	Ornamental trees, shrubs, vines, nursery stock, dormant fruit and nut trees, and certain crops
DENATONIUM SACCHARIDE (Ro-pel)				
Conc.	Product Form	Species	No. of Products	Use Considerations and Restrictions
0.065%*	Liquid	Unspecified deer	1	For use on trees, poles, fences, siding, outdoor furniture, similar objects, shrubs, ornamental plants, grass, flowers, and garbage
* Also contains 0.035% thymol				
EGG SOLIDS, PUTRESCENT WHOLE (Deer-Away)				
Conc.	Product Form	Species	No. of Products	Use Considerations and Restrictions
36%	Powder	White-tailed deer Black-tailed deer Mule deer Roosevelt elk	1	Various ornamentals, almond, fruit, and citrus trees Conifer seedlings
37%	Liquid concentrates	White-tailed deer Mule deer Black-tailed deer Roosevelt elk	2	Various ornamentals, nonbearing fruit, and citrus trees Conifer seedlings
THIRAM				
Conc.	Product Form	Species	No. of Products	Use Considerations and Restrictions
7%	Liquid	"Deer"	1	Dormant fruit trees, shrubs, and ornamentals
11%	Liquid	"Deer"	1	Shrubs, fruit trees, ornamentals, and nursery stock
20%-21%	Liquids	Unspecified	5	Dormant fruit trees, shrubs, and ornamentals
42%	Liquids	Unspecified	2	Fruit trees, shrubs, ornamentals, and nursery stock

Table 20. Pesticides federally registered to control *moles*.

TOXICANT				
STRYCHNINEALKALOID				
Conc.	Product Form	Species	No. of Products	Use Considerations and Restrictions
0.5%	Dry bait	Unspecified	1	Subterranean applications
FUMIGANTS				
ALUMINUMPHOSPHIDE (Phostoxin)				
Conc.	Product Form	Species	No. of Products	Use Considerations and Restrictions
55%-60%	Tablets, pellets, or bags	Unspecified	16	Restricted Use Pesticides for treating burrows
GAS CARTRIDGES (many active ingredients)				
Conc.	Product Form	Species	No. of Products	Use Considerations and Restrictions
Various	Ignitable cartridges	Unspecified	4	For treating burrows

Table 21. Pesticides federally registered to control *rabbits*.

REPELLENTS				
AMMONIUM SOAPS OF HIGHER FATTY ACIDS (Hinder)				
Conc.	Product Form	Species	No. of Products	Use Considerations and Restrictions
15%	Liquids	Unspecified rabbits	2	Fruit trees, flowers, vegetables, ornamentals, and other sites
CAPSAICIN				
Conc.	Product Form	Species	No. of Products	Use Considerations and Restrictions
2.5%	Liquid	Unspecified rabbits	1	Ornamentals, dormant fruit and nut trees, fruit bushes and vines, and certain edible crops
THIRAM				
Conc.	Product Form	Species	No. of Products	Use Considerations and Restrictions
7.0%	Liquid	Unspecified rabbits	1	Ornamentals
11.0%	Liquid	Unspecified rabbits	1	Shrubs, fruit trees, ornamentals, and nursery stock
20%-21%	Liquids	Unspecified rabbits	5	Dormant fruit trees, shrubs, ornamentals, and other sites (claims vary somewhat among products)
42%	Liquids	Unspecified rabbits	2	Fruit trees, shrubs, ornamentals, and nursery stock
TOBACCO DUST				
Conc.	Product Form	Species	No. of Products	Use Considerations and Restrictions
70%*	Dry mixtures	Unspecified rabbits	2	Border treatment for protecting trees, shrubs, and vegetable gardens
* Also contains 15% dried blood and 15% naphthalene.				
ZIRAM				
Conc.	Product Form	Species	No. of Products	Use Considerations and Restrictions
23%	Dust (to be applied as is or to be mixed and sprayed)	Unspecified rabbits	1	Flowers, shrubs, and certain garden fruits and vegetables

NOTE: Labels that state "rabbits" are taken to refer to "true rabbits" as well as "hares."

Table 22. Pesticides federally registered to control *birds*.

TOXICANTS				
FENTHION (Rid-A-Bird 1100)				
Conc.	Product Form	Species	No. of Products	Use Considerations and Restrictions
11%	Liquid	Starlings House sparrows Pigeons	1	Restricted to “persons trained in bird control” to be used only in special perches placed where stipulated on label
STARLICIDE (Compound DRC-1339)				
Conc.	Product Form	Species	No. of Products	Use Considerations and Restrictions
0.1%	Dry bait	Starlings Blackbirds	1	For use around livestock and poultry operations under direction of personnel trained in bird damage control
97%	Technical	Starlings Blackbirds	1	For formulation, by state and federal agencies, into “experimental baits suitable for starling and blackbird control”
98%	Technical with use directions	Starlings Brewer’s blackbirds Red-winged blackbirds Common grackles Brown-headed cowbirds	1	Restricted Use Pesticide for use by or under direct supervision of US Department of Agriculture employees in cattle, poultry, or hog feedlots
98%	Technical with use directions	Herring gulls Great black backed gulls Ring-billed gulls	1	Restricted Use Pesticide for use by or under direct supervision of US Department of Agriculture employees in or near nesting colonies of certain types of birds within coastal areas between March 1 and June 30
98%	Technical with use directions	Pigeons	1	Restricted Use Pesticide for use by or under direct supervision of US Department of Agriculture employees on flat rooftops or within fenced areas from which the public and pets, domestic animals, and most non-avian wildlife can be excluded
FRIGHTENING AGENTS				
4-AMINOPYRIDINE (Avitrol)				
Conc.	Product Form	Species	No. of Products	Use Considerations and Restrictions
0.03%	Dry bait	Common grackles Red-winged blackbirds Yellow-headed blackbirds Cowbirds Starlings	1	Restricted Use Pesticide to be used to protect ripening sweet corn and field corn
0.03%	Dry bait	Common grackles Red-winged blackbirds Rusty blackbirds Yellow-headed blackbirds Cowbirds Starlings	1	Restricted Use Pesticide to be used to protect ripening sunflower fields
0.3%	Concentrate		1	Formulation and repackaging
0.5%	Dry baits*	House sparrows Grackles Cowbirds Red-winged blackbirds Yellow-headed blackbirds Rusty blackbirds Brewer’s blackbirds Starlings	3	Restricted Use Pesticides for use in, on, or in the area of structures, nesting, feeding, and roosting sites
0.5%	Dry bait*	House sparrows Grackles Cowbirds Red-winged blackbirds Yellow-headed blackbirds Rusty blackbirds Brewer’s blackbirds Starlings Pigeons	1	Restricted Use Pesticide for use in, on, or in the area of structures, nesting, feeding, loafing, and roosting sites

Table 22. (Continued)**4-ANIMOPYRIDINE (Avitrol) (Continued)**

0.5%	Dry bait*	Pigeons	1	Restricted Use Pesticide for use in, on, or in the area of structures, feeding, nesting, loafing, and roosting sites
0.8%	Dry bait*	Starlings	1	Restricted Use Pesticides for use in, on, or in the area of feedlots, structures, nesting, feeding, and roosting sites
1.0%	Dry bait*	House sparrows Grackles Cowbirds Red-winged blackbirds Yellow-headed blackbirds Rusty blackbirds Brewer's blackbirds Starlings	1	Restricted Use Pesticides for use in, on, or in the area of feedlots, structures, nesting, feeding, and roosting sites
1.0%	Dry bait*	Crows	1	Restricted Use Pesticide for use in, on, or in the area of structures, feeding, nesting, and roosting sites
25%	Concentrate powder to be mixed*	Herring gulls	1	Restricted Use Pesticide to be applied at, in, or near sanitary landfills
50%	Concentrate powder to be mixed*	Starlings	1	Restricted Use Pesticide to be used in or near feedlots

* Prebaiting is recommended

REPELLENTS**CAPSICUM (Ground red peppers)**

Conc.	Product Form	Species	No. of Products	Use Considerations and Restrictions
12%*	Granulars	Horned larks House finches Unspecified sparrows Starlings	2	For use on certain fruit, vegetable, and grain crops (specific crops claimed as sites differ between labels)

* Also contains 5% ground garlic

DENATONIUM SACCHARIDE (Ro-pel)

Conc.	Product Form	Species	No. of Products	Use Considerations and Restrictions
0.065%*	Liquid	Unspecified birds	1	Taste repellent used to protect seeds or bulbs

* Also contains 0.035% thymol

LINDANE

Conc.	Product Form	Species	No. of Products	Use Considerations and Restrictions
25.08%	Powder	Pheasants	1	Seed treatment for various agricultural crops
75.0%	Powder	Pheasants	1	Seed treatment for various agricultural crops

* Also contains 12.5% captan and "related derivatives."

NAPHTHALENE

Conc.	Product Form	Species	No. of Products	Use Considerations and Restrictions
100%	Flakes	Unspecified birds	1	Attics, floor and wall voids

PETROLEUM NAPHTHENIC OILS

Conc.	Product Form	Species	No. of Products	Use Considerations and Restrictions
79.65%*	Aerosol	Pigeons Starlings House sparrows	1	For treating ledges where birds roost or land
86.0%**	Paste	Pigeons Starlings "Nuisance birds"	1	For treating ledges where birds roost or land, and trees and shrubs

* Also contains 1.65% polyisobutlyenes

** Also contains 2.0% polyisobutlyenes

Table 22. (Continued)

POLYBUTENES				
Conc.	Product Form	Species	No. of Products	Use Considerations and Restrictions
42.8%	Semi-liquid	Starlings House sparrows Pigeons	1	For use on buildings and adjacent inanimate structures
49.0%	Liquid	Pigeons House sparrows Starlings Grackles Cowbirds Brewer's blackbirds Common crows Ring-billed gulls Herring gulls California gulls	1	For interior use on beams, girders, struts, supports, and other places where birds roost or land
49.7%	Paste	Pigeons Starlings House sparrows Gulls	1	For treating ledges where birds roost or land
80%	Paste	Pigeons House sparrows Starlings Grackles Cowbirds Brewer's blackbirds Common crows Ravens Ring-billed gulls Herring gulls California gulls	1	For use on structures where birds roost or land
90.0%	Paste	Pigeons	1	For use on buildings and adjacent inanimate structures
93.5%	Paste	Pigeons House sparrows	1	For treating structures where birds roost or land

NOTE: The heading "Polybutenes" is applied here to a variety of related compounds which are used to discourage birds from perching on treated areas due to the tackiness and other irritating tactile properties of these substances.

Table 23. Pesticide federally registered to repel snakes.

SULFUR				
Conc.	Product Form	Species	No. of Products	Use Considerations and Restrictions
28.0%*	Dry mixture	Rattlesnakes Checkered garter snakes	1	For use in areas around houses, cabins, trailers, garages, utility houses, barns, wood piles, sand piles, trash cans, and flower beds

* Also contains 7.0% naphthalene

Editors

Scott E. Hygnstrom
Robert M. Timm
Gary E. Larson