

Improving Rodenticide Stewardship in Vermont

Registered products

Product use reports

Current regulation

Education/Outreach Efforts

Collection of information on improving rodenticide
stewardship

Commensal rodents



Mus musculus



Rattus norvegicus

- Well adapted to living with humans
- Omnivorous
- Rapid reproduction rate –
 - *M. musculus* – reproduction at 2 months, 18-21 days gestation, can have a litter every month, 6-13 pups
 - *R. norvegicus* - reproduction at 2-3 months, 21-25 days gestation, 3-6 litters per year, 6-10 pups

CDC lists thirty diseases transmitted or spread by rodents.

<https://www.cdc.gov/healthy-pets/rodent-control/index.html>

- Directly spread - Bacterial diseases spread by contamination of food, or by urine or feces of rodents
- Indirectly by fleas and ticks on rodents – plague; murine typhus

Food contamination –

Foraging habits result in contamination – deposit urine and feces on food sources
Track bacteria into food areas

Property damage –

Burrowing
Gnawing of wood, wires
Vehicle wiring

Agriculture –

crop destruction
feed contamination
stored product destruction



The American Housing Survey (AHS), sponsored by the Department of Housing and Urban Development (HUD), Rodent Prevalence – 2019

2019 Rodent Estimates - Counties			
Name	Housing Unit Estimate	Rodent Estimate	Percent
Bennington County, VT	21206	5069	23.90%
Caledonia County, VT	16518	5038	30.50%
Chittenden County, VT	71291	12286	17.23%
Essex County, VT	5229	1672	31.97%
Franklin County, VT	22835	6706	29.37%
Grand Isle County, VT	5383	1576	29.29%
Lamoille County, VT	13954	4040	28.95%
Orange County, VT	15611	5384	34.49%
Orleans County, VT	17949	5109	28.46%
Rutland County, VT	34637	7770	22.43%
Washington County, VT	31002	6981	22.52%
Windham County, VT	30948	6352	20.53%
Windsor County, VT	35188	8373	23.79%

Vermont leads with 24.1% of households experiencing rodent issues, followed by South Dakota (23.2%) and North Dakota (22.9%). Other states with high rates include Iowa (22.2%) and Maine (21.2%).

<https://cinch.io/counties-with-the-worst-rodent-problem/>

First Generation ARs

Warfarin

Diphacinone

Chlorodiphacinone

Second Generation ARs

Brodifacoum

Bromodialone

Difenacoum

Difenthialone

Non-ARs

Bromomethalin

Cholcalciferol

Zinc Phosphide

Number of 1st gen products registered	47
Number of 2nd gen products registered	69
Number of zinc phosphide products registered	19
Number of cholecalciferol products registered	11
Number of bromomethalin products registered	80

Second Generation Anti-Coagulant Rodenticides (SGAR)

Total pounds by year

Active Ingredient	2021	2022	2023	2024
Brodifacoum	0.419	0.453	0.391	0.391
Bromadiolone	0.629	0.409	0.606	1.110
Difenacoum	0.0004			
Difethialone	0.583	0.058	0.218	0.173

First Generation Anti-Coagulant Rodenticides (FGAR)

Total pounds by year

Active Ingredient	2021	2022	2023	2024
Chlorophacinone		0.115	0.004	0.054
Diphacinone	0.069	0.017	0.015	0.071
Warfarin		no reported use		

Non Anti-Coagulant Rodenticides

Total pounds by year

Active Ingredient	2021	2022	2023	2024
Bromethalin	0.048	0.058	0.046	0.046
Cholecalciferol	0.068	0.050	0.084	0.786
Zinc phosphide	3.356	1.827	2.48	0.684

NOTE TO PHYSICIAN

If swallowed or absorbed through the skin, this material may reduce the clotting ability of the blood and cause bleeding. If ingested, administer Vitamin K₁ intramuscularly or orally. Repeat as necessary based on monitoring of prothrombin times.

TREATMENT FOR PET POISONING

If animal eats bait, call veterinarian at once.

NOTE TO VETERINARIAN

Anticoagulant Bromadiolone: For animals ingesting bait and/or showing poisoning signs (bleeding or elevated prothrombin times), give Vitamin K₁. If needed, check prothrombin times every 3 days until values return to normal (up to 30 days). In severe cases, blood transfusions may be needed.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. See outer package label for complete DIRECTIONS FOR USE including USE RESTRICTIONS and BAITING INSTRUCTIONS. It is illegal to sell this product unless it is accompanied by a complete set of its accepted labeling.

INDIVIDUAL SALE IS PROHIBITED BY LAW

>2006-8

CONTRAC[®]

RAT & MOUSE BAIT READY TO USE PLACE PACS

KILLS RATS, MICE & MEADOW VOLES*

Kills Warfarin Resistant Norway Rats

Norway rats, roof rats and house mice may consume a lethal dose in one night's feeding with first dead rodents appearing four or five days after feeding begins.

ACTIVE INGREDIENT:
Bromadiolone (CAS #28772-56-7): 0.005%
OTHER INGREDIENTS†: 99.995%
†Contains Denatonium Benzoate TOTAL 100.000%

**KEEP OUT OF REACH OF CHILDREN
CAUTION**

**SEE LABEL ON OUTER PACKAGING FOR
ADDITIONAL PRECAUTIONARY INFORMATION**

See back panels for First Aid and additional precautionary statements.

NET WEIGHT: 1.5 oz (43 g)

EPA REG NO. 12455-75

EPA EST. NOs. 12455-WI-
Superscript is first

*Not permitted for use against the
rat, Eastern harvest mouse, Golde
White-throated woodrat, Southern
Manu



**FIRST AID
HAVE LABEL WITH YOU WHEN
OBTAINING TREATMENT ADVICE**

IF SWALLOWED:

- Call a poison control center, doctor, or 1-877-854-2494, or 1-800-858-7378** immediately for treatment advice.
- Have person sip a glass of water if able to swallow.
- Do not induce vomiting unless told to do so by the poison control center or doctor.
- Do not give anything by mouth to an unconscious person.

IF ON SKIN OR CLOTHING:

- Take off contaminated clothing. Rinse skin immediately with plenty of soap and water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

IF IN EYES:

- Hold eye open and rinse slowly and gently with water for 15-20 minutes.

grams/pac	oz/pac	Concentration	Total gms/pac	Total oz/pac
43	1.5	0.00500%	0.0021500	0.000075

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Current regulations

- SGARs are Class A (state restricted use)
 - Purchase and use by certified operators
 - Use reported annually
 - Outdoor use requires a tamper resistant bait station
- FGARs are Class B or C
 - Sold pre-packaged or limited refill amount (one pound)
 - Sold in farm supply stores up to 8 lbs
 - Outdoor use requires a tamper resistant bait station

Number of pest control companies

89 Active Companies

Number of persons certified in pest control

272 Active Commercial

9 Active Government

Directions For Use

Bait stations are mandatory for outdoor, above-ground use. Tamper-resistant bait stations must be used wherever children, pets, non-target mammals, or birds may have access to the bait placement location.

DO NOT SCATTER BAIT IN OPEN AREAS

Directions For Use

This product must be used in and within 100 feet of man-made structures constructed in a manner so as to be vulnerable to commensal rodent invasions and/or to harboring or attracting rodent infestations.

Examples of such structures include homes and other permanent or temporary residences, food processing facilities, industrial and commercial buildings, trash receptacles, agricultural and public buildings, transport vehicles (ships, trains, aircraft), docks and port or terminal buildings and related structures around and associated with these sites.

Fence and perimeter baiting, beyond 100 feet from a structure as defined above, is prohibited.

This product must not be applied directly to food or feed crops.

Consumer Education Efforts



**To explore the Vermont Agency of Agriculture, Food and Markets, please visit: [www.agriculture](http://www.agriculture.vermont.gov)

ALERT: RODENT BAIT **REQUIREMENTS FOR USE OF MICE OR RAT BAIT**

BAITS USED TO CONTROL MICE, RATS, AND MEADOW VOLES ARE PESTICIDES AND MUST BE USED PROPERLY.

IMPROPER USE CAN RESULT IN POISONING OF CHILDREN, PETS, DOMESTIC ANIMALS, OR WILDLIFE.

IT IS ILLEGAL TO USE THESE BAIT **WITHOUT A BAIT STATION!**

ALWAYS READ AND FOLLOW LABEL DIRECTIONS FOR USE

INDOORS

PLACE BAIT WHERE CHILDREN, PETS, DOMESTIC ANIMALS, AND WILDLIFE CANNOT REACH THE BAIT.



OUTDOORS

BAITS MUST BE PUT INTO A TAMPER RESISTANT BAIT STATION



THE VERMONT AGENCY OF AGRICULTURE, FOOD AND MARKETS
INVESTIGATES REPORTS OF PESTICIDE MISUSE.
INCIDENTS CAN BE REPORTED TO 802-461-7160



Rodenticide Stewardship

- ❑ **Use IPM Strategies** – baits should not always be the first step in rodent control
- ❑ **Don't overapply** - apply labeled amount for target pest
- ❑ **Maintain bait stations**- applicators are responsible for maintaining bait stations
 - *If a bait station is damaged and baits can be accessed, it is the responsibility of the applicator to remove the damaged station and replace it*
 - *Remove bait stations when no longer being serviced*



AAFAM and VT F&W began discussions on improving rodenticide stewardship

Had discussions and received information from:

- Vermont PMPs
- Rodenticide Task Force
- Researchers from University of California, Cornell, Botstiber Institute for Wildlife Fertility Control

- Reviewed regulatory efforts by
- EPA
- California DPR
- Massachusetts

Some pre-liminary take-aways:

- Exposure to wildlife from ARs is documented
- Highest exposure is in suburban interface areas
- Bait stations alone did not reduce wildlife exposure
- Reducing rodent populations is the most effective way to reduce wildlife exposure
- Monitoring and timing of applications is most effective

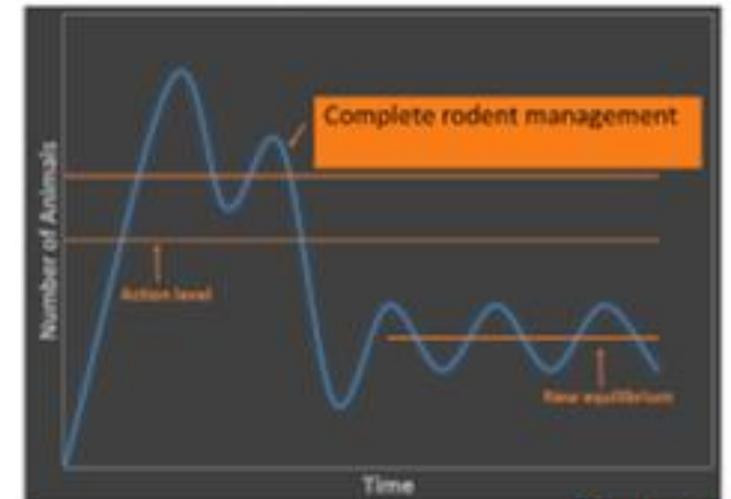
Minimizing Risks to Non-Targets



Rodenticide
TASK FORCE

Minimizing Risks to Non-Targets

Ideal
scenario



Rodenticide
TASK FORCE

Some pre-liminary take-aways:

Restricting ARs will raise costs of rodent control

- exclusion efforts can cost hundreds to thousands of dollars structure
- trapping only services increase service costs up to ten-fold
- removing access to effective rodenticides could increase the potential for illegal or dangerous control methods

Developing effective rodent control depends on using multiple strategies – including rodenticides

- reducing access to resources
- monitoring of population
- timing of control measures to reduce population increase
- removing rodenticides when not needed

Monitoring technology has improved

ERM – multiple systems available

Most appropriate for commercial properties

Education and outreach needed for general public

Questions

Steven Dwinell – 802-522-6973
steve.Dwinell@vermont.gov

Dave Huber -802-461-7160
david.huber@vermont.gov