

# CONTRAPEST

## A VETERINARIAN'S GUIDE

The Inadvertant Ingestion of ContraPest by Non-Target Animals



SENESTECH

# VETERINARIAN GUIDE

The intended purpose of this brochure is to be an aid to veterinarians tasked with treating animals that have inadvertently ingested ContraPest either directly or indirectly through a target species.



## EARLY RODENTICIDES: INGREDIENTS AND EFFECTS

Early rodenticides have been used to control rodent populations since the early 1940's. First generation rodenticides utilized anticoagulants, which cause internal hemorrhaging in rodents. These products had high concentrations of active ingredients and required multiple feedings over the course of several days to deliver a lethal dose.

Second generation anticoagulants, created to combat resistance, have lower concentrations of active ingredients, are more potent, and are

designated to be lethal after a single ingestion. Due to the long half-life of second-generation anticoagulants, they can bioaccumulate and persist in rodents longer before breaking down.

Lethal rodenticides also make rodents slower, less coordinated and easy prey for other animals.<sup>1</sup>



## NON-TARGET CONSUMPTION: TREATMENT AND RESULTS

The long half-life of rodenticides, combined with their effects on target species, make the potential for accidental consumption by non-target species a substantial concern. Medical treatment for ingestion can range from mild intervention such as inducing vomiting and administering Vitamin K to supportive care. In some of the more severe cases, ingestion of the rodenticide can result in complications like cerebral or pulmonary hemorrhaging, disseminated intravascular coagulation (DIC), and even death.

## NEXT GENERATION RODENTICIDE: FERTILITY MANAGEMENT

SenesTech, Inc., a biotechnology company based in Phoenix, Arizona, has created a non-lethal liquid contraceptive for use in Norway rats, *Rattus norvegicus* and roof rats, *R. rattus*.

A goal of the company was to develop an effective product that would have minimal side effects on non-target species if the product were consumed unintentionally. ContraPest is the result of years of research to produce such a product.

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**“..an effective product that would have minimal side effects on non-target species...”**

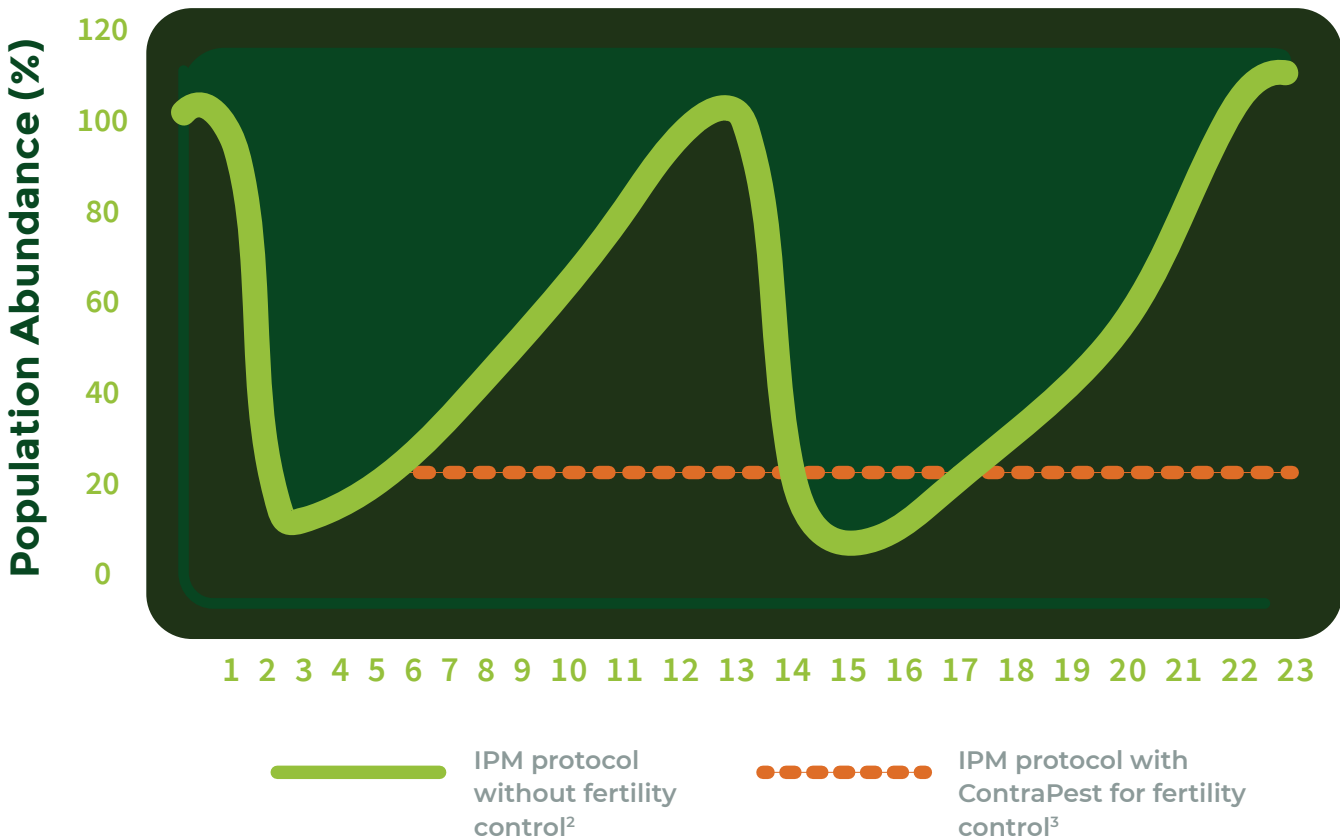


Rodents are highly prolific and can rebound from lethal rodenticide campaigns in 3-6 months. ContraPest controls rodent populations by targeting their ability to reproduce. ContraPest is not a sterilant and does not cause permanent loss of fertility in rodents. ContraPest interrupts the maturation of spermatozoa and oocytes. As a result, conception is not achieved and litter sizes are greatly reduced.

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### The Rebound Effect





Consumption of ContraPest is not shown to cause changes in behavior or illness in rodents, making them less susceptible to predation and reducing risk of secondary exposure. By decreasing their reproductive capacity, rodent populations can be greatly reduced over time with sustainable results. Efficacy of ContraPest can be measured in the same manner as other pest management solutions: fewer rat sightings, reduced damage and losses, and less disease transmission over time.

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## CONTRAPEST: INGREDIENTS & CATEGORIZATION

ContraPest is registered with the US EPA (Reg. No. 91601-1) and due to being a slight dermal irritant is designated as a Category 3. This designation requires applicators to wear gloves, long-sleeved shirts and long pants when handling ContraPest.

ContraPest contains two active ingredients, 4-Vinylcyclohexene diepoxide (VCD) (0.09604%) and Triptolide (0.00118%). The low concentration of the active ingredients is specific to Norway and roof rats. The half-life in the blood for these two active ingredients is 12-18 minutes respectively. The compounds are metabolized into inert metabolites that are excreted primarily in the urine with a small amount in the feces. With a low concentration of actives, a short half-life and no behavioral changes in rodents, the risk of secondary exposure is greatly reduced.



INTENDED FOR PROFESSIONAL USE ONLY  
Keep Out of Reach of Children  
**CAUTION**  
Net Contents: 13.53 fl oz. (400 ml)  
CP-03-25-21

contrapest SENESTECH  
Active Ingredients:  
4-Vinylcyclohexene diepoxide 0.09604%  
Triptolide 0.00118%  
Other Ingredients 99.90278%  
Total: 100.00000%

Manufactured by:  
SenesTech, Inc.  
777 Phinocle Peak Rd.  
Suite B-106  
Phoenix AZ 85027  
EPA Reg. No. 91601-1  
EPA Est. No. 91601-AZ-1  
Patent 9,956,235  
Batch Code: See Stamp

## CONTRAPEST QUICK FACTS



Active Ingredients:  
VCD & Triptolide



Target Species:  
Norway & roof rats



Active Ingredient  
Half-Life = 12-18 minutes



Reduced secondary  
exposure



No behavioral changes in  
rodents once consumed



Metabolizes in urine &  
small amounts in feces

## IN THE EVENT OF SECONDARY EXPOSURE: RISK & TREATMENT

Should secondary exposure occur, the low concentration and short half-life of the actives mitigate the risk of an animal being exposed to an effective dose. Because of these features, there is minimal potential for ContraPest to enter the food chain, when used as directed.

The low amounts of active ingredients (A.I.) in ContraPest and the short half-life of each A.I. should only cause transient issues to the reproductive organs of intact animals and should have no effect on other organs. Medical intervention of non-target animals should not be needed.

In a number of tests with non-target species, no adverse effects have been found. Dogs are sensitive to the toxic effects of triptolide with an LD50 of 60 ug/kg<sup>4</sup>. In a contracted avian toxicology study based upon OCSPP Guideline No. 850.2100, no adverse effects were observed. No information has been found on the LD50 in cats.

**ContraPest is the world's first and only rodent contraceptive. ContraPest fertility management is the pest control difference.**

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## EARTH-FRIENDLY AND EFFECTIVE

SenesTech endeavors to provide products to the marketplace that solve rodent infestation issues through fertility control without placing animals, humans, or our environment at risk of further harm. ContraPest fertility management is the pest control difference.

## CITATIONS

- 1 - "Rodenticides." National Pesticide Information Center, [npic.orst.edu/factsheets/rodenticides.html](http://npic.orst.edu/factsheets/rodenticides.html).
- 2 - Innes J, Warburton B, Williams D, Speed H, Bradfield P. 1995. Large-scale poisoning of ship rats (*Rattus rattus*) in indigenous forests of the north island, New Zealand. *New Zealand Journal of Ecology*, 19(1):5-17
- 3 - SenesTech Unpublished internal data.
- 4 - Cheng, You-lan, et al. "Some Toxicities of Triptolide in Mice and Dogs." *Acta Pharmacologica Sinica*, vol. 2, no. 1, Mar. 1981, pp. 70-72.



## AGRIBUSINESS



## COMMERCIAL



## MUNICIPALITIES



## RESIDENTIAL



SenesTech is always here to answer any questions and support our customers. If you have any questions about ContraPest, how to deploy or how to implement into your current rodent control program, please do not hesitate to reach out.

**For more information,  
contact us today.**

E: [info@senestech.com](mailto:info@senestech.com)

P: 1-866-886-RATS ( 866-7287)

VETGUIDE03\_MLTRAPR2021

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ContraPest® is registered federally as a General Use Product when used as directed. However, in some states, due to applicator expertise, it is a Restricted Use Product. Please check with your local state regulatory agency to determine restriction status. Read and follow all label instructions for target species Norway and roof rats. PROTECTA EVO EXPRESS® is a registered trademark of Bell Laboratories, Inc.