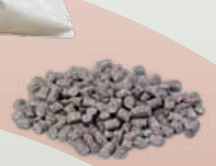
PROZAP®

TECHNICAL BROCHURE

Prozap Zinc Phosphide Pellets

EPA Reg. No..... 61282-49



Prozap Zinc Phosphide Oat Bait

EPA Reg. No..... 61282-14

Read the label for complete use directions, restrictions and limitations. Never leave open containers of treated bait unattended.

Prozap Zinc Phosphide Pellets and Prozap Zinc Phosphide Oat Baits are restricted use pesticides.

NEOGEN® CORPORATION

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 AN118-0611

PROZAP® Zinc Phosphide Pellets and Oat Bait

Fast-acting, cost effective rodenticides for the control of voles, prairie dogs, rats, mice and other rodents

TECHNICAL BROCHURE

The severe impact of rodent outbreaks in agricultural and industrial areas

Rodent problems in the United States are highly varied and involve both introduced and native species in rural and urban settings. Crops, rangeland, forests, agricultural and industrial structures and residential dwellings have sustained extensive damage. Rodents of one species or another may cause damage at any stage of plant growth from the seed to the harvestable commodity. Often crop damage does not stop there and some of the most serious damage and losses are caused by rodent contamination that occur post-harvest in transportation and storage. Rodents are implicated in the transmission of many types of infectious diseases to humans and domestic animals.

A responsible approach to rodent control

Rodents can reproduce very quickly and disperse readily. Management intervention is required when rodent outbreaks reach levels that are economically or aesthetically unacceptable or health risks are high. Total extermination of any rodent pest is virtually impossible in most situations. Managers are typically faced with extended control programs.

Integrated control programs consist of preventative measures including sanitation, habitat manipulation, mechanical controls such as trapping and the use of rodenticides.

Prozap products are fast-acting and cost effective

It is imperative for producers and managers to protect their investments from costly rodent damage in an effort to maximize profits. Prozap Zinc Phosphide Pellets and Prozap Zinc Phosphide Oat Bait offer quick-acting control of rodents during severe outbreaks. These fast-acting formulations provide an economical approach to rodent control due to their high efficiency and low cost.

Low secondary poisoning potential

Proper rodenticide selection is a crucial factor in preventing secondary poisoning. Some fast-acting compounds accumulate in the tissues of poisoned animals and when carnivorous or scavenging species consume the target rodent, they suffer the effects of the rodenticide. Unlike these compounds, Prozap Zinc Phosphide Pellets and Prozap Zinc Phosphide Oat Bait have low secondary poisoning potential because the active ingredient does not accumulate in the tissues of the target animals. Zinc phosphide reacts with the acidic conditions in the gut to form phosphine gas. The gas results in direct irritation of the gastrointestinal tract along with cardiovascular collapse, resulting in death. Phosphine gas does not accumulate in the tissues of the target animals. The primary source of zinc phosphide to a carnivorous or scavenging animal is the digestive tract of the poisoned animal, where unreacted zinc phosphide may remain. When given a choice, non-target species typically refuse to eat the contaminated digestive tract resulting in fewer secondary poisoning occurrences than other fast-acting compounds.

Prozap Zinc Phosphide Oat Bait and Prozap Zinc Phosphide Pellets are labeled for use for either above and/or below ground applications in a wide spectrum of sites including:

- Grape vineyards
- Macadamia nut orchards
- Nursery stock (ornamental and non-bearing fruit trees)
- Orchards and groves
- Rangeland
- Sugarcane
- Reduced tillage and no-till corn*
- Non-crop areas including golf courses, lawns, parks, rights-of-way
- Alfalfa fields
- Timothy hay fields**
- In and around buildings including homes, agricultural and industrial buildings and other man-made structures

*Prozap Zinc Phosphide Pellets only.

**Prozap Zinc Phosphide Oat Bait only.

An at-planting or pre-planting application for use in reduced tillage and no-till corn

Farmers that utilize reduced tillage and no-till practices in corn are to be commended for their special efforts in soil conservation. Unfortunately, these tillage programs often provide rodents with an ample habitat frequently resulting in high-density populations. The lack of tillage allows undisturbed establishment of burrows. Damage occurs in these fields after herbicide applications destroy much of the rodents' food source of the rodents, forcing them to choose crop seeds and young plants as an alternative food. Damage from voles, mice, thirteen-lined ground squirrels and kangaroo rats can drastically reduce profits. Prozap Zinc Phosphide Pellets are highly effective against these pests and the product is the only rodenticide federally registered for use in corn. Research indicates that zinc phosphide pellets in the furrow at planting can be more effective than broadcast treatments; in addition, furrow application protects non-target wildlife from bait exposure.

NOTE: The pellets must not be crushed during application this application requires a Positive Placement Kit (PPK) metering system that is capable of metering the pellet through the insecticide box.

Attractive, high protein baits

In apple orchards, voles forage for fruit, strip bark and girdle trunks. Their feeding activity can result in reduced fruit production, or even death of entire trees caused by disease or girdling. Naturally available food supplies in orchard situations are high in sugar and carbohydrates. Rodents search for food sources that provide a balance of nutrients for optimum health and high reproductive potential. Voles instinctively seek high protein diets when preparing for winter. Many fast-acting formulations are relativity low in protein. Prozap Zinc Phosphide Pellets contain 19-24% protein, a high protein source that is inherently attractive to rodents.

In native rangeland and pastures, prairie dogs forage upon available vegetation resulting in loss of profit potential. Prairie dogs, like voles, seek high protein diets for optimum health and maximum reproductive potential. Prozap Zinc Phosphide Oat Bait contains 14-22% protein, a source of protein that is highly desirable to prairie dogs.

The use of food grade oats

Most manufacturers use animal grade oats when preparing oat baits because the grain is relatively inexpensive. Animal grade oats carry a lower market price due to high levels of mold and insects, rendering them unfit for human consumption. The use of food grade oats in baits is advantageous since oat quality is superior. Prozap Zinc Phosphide Oat Bait contains only highly-palatable food grade oats. During processing the oats are dehulled, steam rolled and kiln dried to prepare a highly digestible, appetizing bait. The oats are heated just high enough to kill all bacteria, mold spores, and insect eggs, producing a sterile product.

NOTE: Due to the manufacturing process, the oats used in Prozap Zinc Phosphide Oat Bait are not viable and will not produce undesired oat plants.

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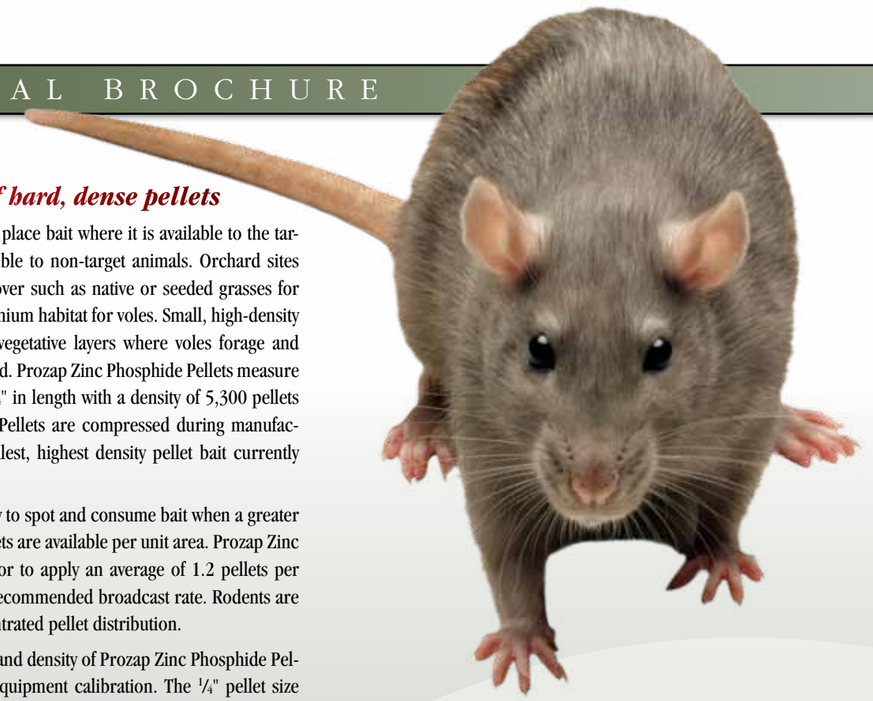
The many advantages of hard, dense pellets

It is the applicator's responsibility to place bait where it is available to the target pest and is inaccessible as possible to non-target animals. Orchard sites frequently contain a thick ground cover such as native or seeded grasses for soil erosion control, providing a premium habitat for voles. Small, high-density pellets readily filter through dense vegetative layers where voles forage and non-target animal exposure is reduced. Prozap Zinc Phosphide Pellets measure approximately ⅛" in diameter and ¼" in length with a density of 5,300 pellets per pound. Prozap Zinc Phosphide Pellets are compressed during manufacturing and offer customers the smallest, highest density pellet bait currently available.

Above ground feeders are more likely to spot and consume bait when a greater number of uniformly distributed pellets are available per unit area. Prozap Zinc Phosphide Pellets allow the applicator to apply an average of 1.2 pellets per square foot when using the highest recommended broadcast rate. Rodents are likely to find the bait with this concentrated pellet distribution.

The consistent size, shape, hardness and density of Prozap Zinc Phosphide Pellets provide the applicator ease in equipment calibration. The ¼" pellet size helps to prevent shattering and dust formation when being loaded into mechanical spreaders or during application. Prozap Zinc Phosphide Pellets aid the applicator in applying proper rates and help to reduce dust exposure.



Reducing accidental game bird poisoning

As stewards of the land, it is essential to protect beneficial wildlife such as turkey and pheasants from accidental poisonings due to bait ingestion. Some baits supply zinc phosphide on cracked corn. Cracked corn is highly attractive to game birds because it is similar to some of the natural foods they eat. The use of Prozap Zinc Phosphide Pellets in areas with game birds can be advantageous because turkeys and pheasants are known to avoid ingestion of foreign foods such as pellets. This instinctual feeding behavior may aid in reducing accidental poisonings compared to the use of zinc phosphide cracked corn baits.

Flexible application methods

Prozap Zinc Phosphide Pellets and Prozap Zinc Phosphide Oat Bait can provide effective rodent control in many situations. Some infestations are better controlled by an above ground broadcast application, while other control efforts are more effective using in-furrow treatment at the time of planting. These products allow the user to choose the most effective application methods. Labeled application methods include:

- Broadcasting by aircraft, ground driven equipment or hand (gloved)
- In-furrow applications at the time of planning (reduced tillage and no-till corn)*
- Artificial burrow-builder machines beneath the soil surface
- Spot treatments using bait stations or trail baiting
- Burrow treatments

*Prozap Zinc Phosphide Pellets only.

NOTE: Prior familiarization with the untreated bait base can markedly improve intake of treated baits with certain rodent species. Refer to product labels for pre-baiting instructions.

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