

Purina Mills develops new rodenticide

ST. LOUIS, MO. — With the USDA predicting a substantial grain surplus this year, and with cool weather and reduced food sources forcing farm rats and mice indoors, many hog producers will begin rodent baiting to protect their livestock and on-farm grain supplies. But, warn rodent control experts, current rodenticides may be ineffective, because of a growing number of anticoagulant-resistant rodents.

According to Dr. William Jackson, Professor of Biological Sciences at Bowling Green State University in Ohio, evidence now suggests that rats and mice in many parts of the country are resistant to popular multiple-feeding rodenticides, including warfarin-based products.

"In nationwide tests, we noticed a resistance rate between 5 and 30 percent when these anticoagulant baits were extensively used," he says. "In fact, some areas reported a resistance level as high as 70 to 100 percent. This suggests that the products currently being used may be ineffective and that larger numbers of rodents are surviving with the resistant trait, which will be passed on to their offspring."

The problem becomes more serious, Jackson notes, since these rodents are surviving to contaminate this year's harvest. "Over one winter, a single rat will consume \$12 worth of grain and pollute five to seven times that amount with its urine, droppings and hair," he says. "When you consider that one female rat can

produce a litter of five to eight baby rats every two months, the current resistance problem can multiply quickly if not met head-on."

When left uncontrolled, rodent damage to buildings and livestock is common. "Rats burrow and gnaw away insulation from barns and hog units," Jackson notes. "They also chew on electrical wiring, which could be the cause of many fires of unknown origin."

In addition, farm animals that eat grain contaminated by rodent feces or drink urine-tainted water may contract any one of several diseases, including leptospirosis and salmonellosis. Besides infecting the animal, such diseases are easily transmitted within the herd.

"With large numbers there will be intense competition for food, as well," Jackson adds. "Rats will eat broken and cracked eggs, drag chicks into burrows and may even attack laying hens."

The surviving birds often produce fewer eggs and may die later, if wounded. Hens stressed by rat infestations also tend to produce eggs with more blood spots, he adds.

Another problem may be the inability of the farmer to sell his grain next spring. "If the local elevator accepts the contaminated grain, they may be cited by the FDA at the next inspection," Jackson notes. "Since it's almost impossible to get all the pollutants out, prevention on the farm is the best defense."

But, because they have more

grain on hand than cash, many hog producers may feel that a rodent control program doesn't pencil out. Jackson, however, points out that the opposite is true. "If one looks at the potential damage that could occur, it really is a 'pay me now or pay me more later' situation," he says.

Currently, there are three types of rodenticides for on-farm control, according to Chuck Dickerson, manager of rodent control research with Purina Mills, Inc. "Acute" rodenticides, like strychnine, are poisons that cause rodent death immediately. Besides their high potency even to non-target animals, these poisons often cause rodents to die in or very near the rodenticide itself, make other rodents shy away from the poison. Those products containing warfarin are examples of "multiple feeding" baits, which kill the rodent after several feedings and allow the rodent to die away from the bait.

"With the resistance problem clearly in mind, Purina has developed a new rodenticide which offers several advantages over both acute and multiple dose baits," Dickerson notes.

The product, Assault rodenticide, is considered a single dose bait, but unlike acute rodenticides, is slower acting and therefore rodents usually will not die in or near the poison. "This is extremely important since other rodents will not approach or consume remaining bait if a dead rodent is lying near it."

The new rodenticide is also

economical and effective, Dickerson continues. "Just 1½ ounces will kill six rats or more than 20 mice. In addition, in on-farm tests, Assault was nearly 100 percent effective against anticoagulant resistant rodents."

However, Dickerson says that a truly effective rodent control program should include a three-pronged approach of "rat proofing" buildings, sanitizing facilities, and baiting infested areas.

To "rat proof" a building, Dickerson suggests hog producers first use sheet metal or cement to seal off all openings around pipes entering buildings or areas where rodents have already gnawed through. In addition, housings on aeration and drying equipment should be covered when not in use to prevent rodents from entering the bins.

Next, clean out debris and garbage and remove any spilled grain from around feeders or storage bins. "It's also important to get rid of any weeds or rubbish from around the outside of buildings," Dickerson adds. "These are ideal hiding places for rat burrow systems and could conceal existing rodent entryways."

Correct bait placement is the third and crucial stage in the control program, says Dickerson. "A potent single dose product should be placed where rodent

traffic is evident," he says. "Greasy marks along the walls and rat droppings or hair or telltale signs of an infestation."

Once spotted, Dickerson suggests that hog producers make a checklist and a diagram of these points, so that problem areas can be easily pinpointed. "Then, set out a control portion of the grain that the rodent normally eats and check it regularly to measure the extent of the infestation," he says. "The speed at which they consume the grain will give you a good idea of the primary area and intensity of infestation."

Once a population level has been determined, an adequate amount of bait should be distributed, placing bait packets throughout the facility. These should be checked and replenished regularly," says Dickerson.


With Assault rodenticide, dead rodents should begin to appear within 48-72 hours, Dickerson adds. "But, baiting should continue year-round, or new rodents will reinfest the area, and the cycle will begin again."

By using this three-pronged program and rodenticide effective against anticoagulant resistant rats and mice, hog producers can help protect their harvest and prevent costly damages to their facility. "A little prevention right now will make all the difference next spring," Dickerson concludes.

New herbicide unveiled by Dow

MIDLAND, MI — TORDON* 1 Plus 2 Mixture is a new herbicide available from The Dow Chemical Company for non-crop and industrial vegetation control. The product contains a mixture of picloram and triclopyr esters and is specially designed for use as a basal bark treatment to control unwanted woody plants in non-crop areas such as fence rows and around buildings. It is also well-suited to right-of-way treatments on roadsides, power lines, railroads and pipelines.

According to Dow, Tordon 1 Plus 2 is particularly effective against hard-to-control species like ash and oak, plus root suckering species such as locust, willows and sassafras. Due to the use of ester formulations in the mixture, the product is highly soluble in oil, which provides improved bark penetration. Once inside the bark to the cambium layer (growth ring), the herbicide translocates throughout the plant's vascular system, killing the entire plant including the root system.



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