Tribal Pesticide Program Council Winter 2021-22

IPM & Rodenticides: Safely Eliminating Unwanted Winter Visitors

Winter is the time of year when mice and rats are most likely to try to get into homes, schools and various dwellings in search of warmth, food and resources to build a nest. The presence of rodents indoors can have a huge impact on human health and safety as they can potentially transmit disease (hantavirus, plague), cause allergies and be the source of destruction to buildings through behaviors such as chewing electrical wires that in turn can start a fire. The first line of defense for prevention or elimination of a rodent infestation is a non-chemical Integrated Pest Management (IPM) approach which includes keeping living/working spaces clean, preventing rodent access and getting rid of nesting materials. This approach may incorporate lethal (or live) traps and even utilize cats as mousers. When an infestation has become extensive and these non-chemical measures are not able to eliminate the problem, it may become necessary to use rodenticides. These chemicals come in block, paste or pellet form and are placed into a tamper-resistant bait station. For infestations in larger structures such as a school, the services of a professional rodent exterminator will be necessary for safe elimination of the problem. Ultimately, reliance on poison bait stations alone is not likely to control an infestation; for best success all of the non-chemical IPM measures should be utilized in addition to rodenticides.

The most common rodents found in dwelling infestations are house mice, roof rats and Norway rats, which can be identified by nearly hairless tails. All of these are considered exotic, have a strong sense of smell, reproduce often and are mostly nocturnal. In the western U.S., there are also native species of mice, woodrats, pocket gophers, rice rats and voles that occasionally will be found indoors.

Norway Rat
Rattus norvegicus

House Mouse
Mus musculus

Roof Rat
Rattus rattus

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IPM & Rodenticides *(continued)*

Schools are highly susceptible buildings for attracting rodents due to the abundance of food sources, warmth, nesting materials and places to hide. Signs of infestation include rodent droppings (near food packages, cupboards, or under the sink), piles of nesting material (dried plant material, shredded paper), signs of chewing on food packages, or stale smells coming from hidden areas.

An IPM approach is the best and safest way to prevent and eliminate a rodent infestation. A combination of non-chemical control measures can often discourage rodents from coming and staying indoors and lead to a decrease the amount of rodenticides used. An IPM program includes sanitation, exclusion, habitat modification and lethal control. In both schools and homes, any areas containing accessible food and water should be kept clean and items stored off the floor. Any potential access points around the outside of a building can be sealed with wire mesh screens, steel wool or fillers. Materials that are attractive to rodents for nesting resources such as cotton or shredded paper should be kept in an enclosed container. Lethal snap or glue traps baited with peanut butter or honey can be placed in areas with signs of infestations.

For classrooms, traps need to be in tamper resistant containers, or traps can be put down at night and pulled up in the morning before students arrive. Cats are another effective form of rodent control; a good mouser will catch and eat mice from in and around a house or building. While using an IPM program may require more up-front costs, over time the cost will be lower because the underlying problem has been addressed.

Both U.S. Environmental Protection Agency (EPA) and U.S. Food and Drug Administration (FDA) have regulations that require the use of tamper-resistant containers when using rodenticides around food handling areas, children, pets and other non-target wildlife. Specifically EPA requires that rodent baits must be in block, paste or pellet forms and be placed in tamper-resistant bait stations. Ready-to-use bait station products that contain rodenticide bait are available for home use.

IPM & Rodenticides *(continued)*

For difficult infestations that cannot be eliminated by non-chemical measures alone, rodenticides may be necessary. These are powerful chemicals combined with attractive edible substances placed in a tamper resistant bait station and are designed to kill rodents over a period of several days. Rodenticide bait stations need to be located in a place inaccessible to pets and children, monitored frequently and carefully disposed of when no longer needed.

There are two categories of rodenticides, anticoagulants and non-anticoagulants. Anticoagulants are blood thinners that prolong blood clotting in the affected animal, death occurs within 4-10 days after a rodent begins feeding on the bait. First generation anticoagulants were developed prior to the 1970's and are registered to control rats and mice in the U.S. through multiple doses over several days. These include Chlorophacinone, Diphacinone and Warfarin. Second generation anticoagulants are faster-acting single dose chemicals developed after the 1970's and are only for agricultural and commercial/structural pest control and not available to residential consumers. The non-anticoagulant chemicals used in the U.S. are Bromethalin, Cholecalciferol, Zinc phosphide and Strychnine, and each of these causes death in rodents in a different way. In addition to rodents, all these chemicals are also toxic to pets, wildlife and people and therefore the more toxic baits are not available for home use and only available to a licensed professional applicator.

The use of rodenticides and other pesticides around schools is particularly concerning and should always be handled by a professional. Children are more susceptible than adults to the harmful effects of chemicals and can become ill from improper application or if a product is chosen that poses more of a risk to people.

There are numerous online resources for dealing with rodent infestations and safe handling of rodenticide bait stations. Each situation is unique and may require a variety of control measures. Most often, eliminating rodents from inside of buildings can be accomplished through following a comprehensive IPM approach.

https://www.epa.gov/rodenticides

https://schoolipm.tamu.edu/forms/pest-management-plans/ipm-action-plan-for-rodents/

https://www.jppestservices.com/blog/rodent-infestation-risks-schools

https://www.nps.gov/common/uploads/teachers/lessonplans/rodenticides_FactSheet.pdf

http://npic.orst.edu/ingred/ptype/rodenticide.html

Updates and Announcements

Conferences

AAPCO Annual Conference

The Association of American Pesticide Control Officials (AAPCO) will hold it's annual meeting and conference on March 6-10, 2022 in Alexandria, VA. For more information visit https://aapco.org/2015/07/31/aapco-2/

Trainings & Courses

2022 Pesticide Applicators in Indian Country Virtual Training

The EPA is offering free, two-day training webinars to certify participants as private applicators of restricted-use pesticides in Indian Country on February 9-10 and May 11-12. For more information visit https://www.epa.gov/pesticides/epa-offers-virtual-training-pesticide-applicators-indian-country

Tribal PIRT

The Muscogee Nation will host a Tribal Pesticide Inspector Residential Training (PIRT) on May 17-19 at the River Spirit Resort & Casino in Tulsa, OK. For more information visit https://www.epa.gov/compliance/pesticide-inspector-residential-training-pirt

Comprehensive Combo PREP

The Pesticide Regulatory Education Program (PREP) Network will provide a comprehensive combination course in Fort Collins, CO on April 4-7. For more information visit https://agsci.colostate.edu/agbio/prep/

Structural and Public Health Pest Control Issues PREP

The PREP Network will provide a course on structural and public health pest control issues on June 13-16 in Davis, CA. For more information visit https://agsci.colostate.edu/agbio/prep/

Meetings

TPPC Spring Meeting

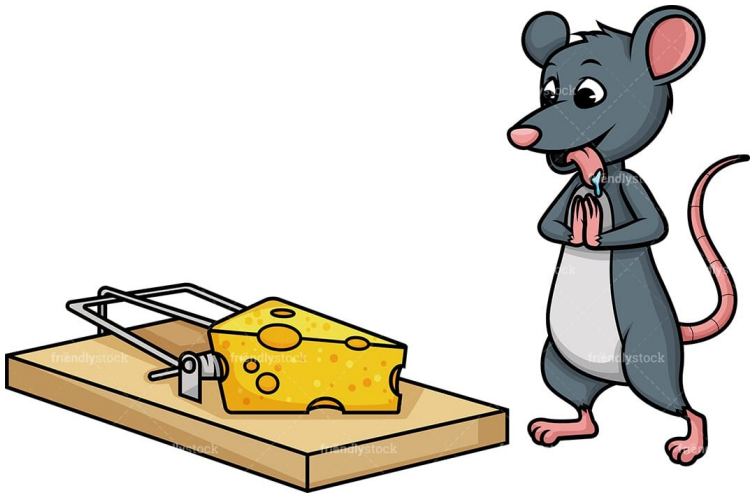
The first Tribal Pesticide Program Council biannual meeting of 2022 will be held April 19-21 at White Earth Nation in Minnesota. We are tentatively planning for a hybrid in-person and virtual conference. More information will be available soon at our website: tppcwebsite.org

SFIREG Joint Working Committee Meeting

The State FIFRA Issues Research and Evaluation Group (SFIREG) will hold a joint working committee meeting April 11-12 (location TBD). For details see https://aapco.org/2015/07/29/working-committees/

Full SFIREG Meeting

SFIREG will hold its semi-annual full meeting on June 6-7 (location TBD). For more information visit https://aapco.org/2015/07/30/sfireg-3/



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The TPPC is a member-based organization with more than 74 members and 46 Tribes and tribal organizations as of January 2022, whose activities are funded by a cooperative agreement with the EPA. The Council serves as a tribal technical resource, and provides a forum for dialogue between Tribes and the EPA on program and policy development relating to pesticides issues and concerns. Assistance provided to Tribes includes support in building tribal pesticide programs and conducting pesticide education and training, and the preparation of resources for Tribes interested in specialized issues such as Integrated Pest Management and pollinators. Through its interaction with the EPA, the TPPC keeps Tribes informed of developments in the regulation of pesticides and pesticide use, and provides feedback to the EPA on such matters from a tribal perspective (though it is important to note that communication between the EPA and the TPPC does not substitute for direct government-to-government consultation).

For information about how to join the TPPC, contact Mark Daniels at mark.daniels@nau.edu or (928) 523-8897.