

Pest Management News

Dr. John D. Hopkins, Associate Professor and Extension Entomologist – Coeditor
Dr. Kelly M. Loftin, Associate Professor and Extension Entomologist – Coeditor

Contributors

Dr. Becky McPeake, Professor and Wildlife Extension Specialist
Dr. Bob Scott, Professor and Extension Weed Scientist

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Integrated Pest Management for Residents in Multifamily Housing

John D. Hopkins

When residents of multifamily housing facilities begin noticing pests and thoughts of “Do-It-Yourself” pest control come to mind, **Don’t Do-It!** Do not use bug sprays or “bug bombs”! Save your money and leave pest control to the professionals. The facility manager should be immediately notified when a resident sees any kind of pest (cockroach, mouse, etc.). There is usually a trained person on the building staff or a contracted pest control company that will properly handle any pest problem.

All too often, store-bought sprays or do-it-yourself (DIY) fixes may only kill a few of the pests that are seen. The hidden ones are left to reproduce and continue the problem. Worse yet, many individuals fail to read and properly follow label instructions and thus could be exposing their family and themselves to excessive pesticide residues. Report pests to the facility manager and let the trained professionals take care of the pest situation.

There is something that a resident can do to help minimize pest problems. The following list of suggestions can help to keep insect pests and rodents out of your home:

1. **Get rid of clutter** - Clutter does not cause pest infestations, but it gives them places to hide once they arrive, making them hard to find and kill. When de-cluttering, sort items into three piles: keep, donate, or throw away.
2. **Vacuum** - Vacuuming does a fine job of sucking up insects. It also gets rid of the crumbs that some pests eat and the allergens they leave behind. A “HEPA filter” vacuum is recommended. Don’t let insects escape from the vacuum. Throw away the vacuum cleaner bag or the contents of the canister by sealing in a trash bag and disposing of it in an outside dumpster. Think you have insects hiding? Try flushing them out with the air from a hair dryer. Be ready with the vacuum when they run out! Vacuuming won’t get rid of an infestation, but it can help get rid of a lot of insect pests.

3. **Lock ‘em out** - Seal up all the openings where pests get in; look under sinks, around the pipes, around windows, and under doors. Mice can fit through a hole the size of a dime and rats can fit through a hole the size of a quarter! Fill out a work order to have maintenance seal these openings, install door sweeps at the bottom of doors, and fix broken window screens.



A mouse or rat could easily slip under this door

4. **Don’t feed ‘em** - Pests need food and water to survive. We don’t want to make life easy for them. Mice, rats, cockroaches, ants, and many other pests go where they find food and water. They will happily eat food we leave out – including pet food. You can:

- Clean-up dishes at night
- Store food in the fridge or in sealed containers
- Only eat in the kitchen or dining area
- Use a garbage can with a tight fitting lid and empty it regularly
- Put in work orders to fix leaky pipes or faucets

5. **Trap ‘em** - Sticky traps won’t get rid of an all the insect pests, but they will show pest control professionals where the pests are before they get out of hand.

6. **Inspect everything that comes into your home** - Stowaways come in packages, luggage, furniture, and food.

7. **Use a clothes dryer*** - High heat can kill pests including fleas and bed bugs. Keep clothing or bedding bagged on the way to the laundry room or laundromat to prevent spreading insect pests. Wash and dry clothing and bedding on the hottest setting for a full cycle and bring your laundry home in a *different* bag (throw away 1st bag in an outside dumpster). You can skip the washer and just place the items in a dryer on the hottest cycle for 30 minutes. This dryer-only method saves time and money and you can use it with dry-clean-only items.

**Using a clothes dryer for bed bug control does not take the place of a pest management professional. Report suspected bed bugs so facilities management can help!*

No, the efforts listed above will not take the place of a professional but they can make a huge difference. The best time for do-it-yourself pest control is *before* you see any pests! Have all these tips be part of your weekly routine.

More information on what you can do for specific pests can be seen by visiting StopPests in Housing’s “Pest Solutions” page: <http://www.stoppests.org/pest-solutions/>.

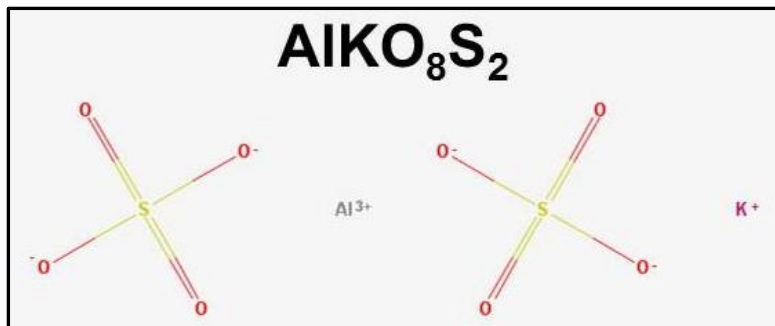
Potassium Alum for Control of the American Cockroach: A Novel Use

John D. Hopkins

Dr. Elham Salama, of Benha University in Egypt, recently published (Salama, Elham M. 2015. A novel use for potassium alum as controlling agent against *Periplaneta americana* (Dictyoptera: Blattidae). J. Econ. Entomol. DOI: <http://dx.doi.org/10.1093/jee/tov239> First published online: 12 August 2015 (10 pages) how a common chemical compound performed as an insecticide against one of the most common pests worldwide, the American cockroach (*Periplaneta americana*). Potassium alum, also known as potassium aluminum sulfate and potash alum, has current commercial uses in water purification, in leather tanning, as an agent to set fabric dyes, as a flame retardant in textiles, as an antibacterial agent in deodorants, as an additive to baking powder, and is used medically as an astringent to reduce bleeding. The compound's potential as an insecticide was previously unknown.

Potassium alum crystals are water-soluble and, after a period of starvation, American cockroach adults and nymphs were fed the compound while control cockroaches were given white bread. The cockroaches did not exhibit a significant preference for either food source. The insecticidal effects of potassium alum consumption were characterized as chronic rather than acute with time to mortality ranging from 4 days in nymphs to up to a month for adults. Gravid females that fed on potassium alum yielded smaller oothecae and non-functional eggs.

This compound is not registered as an insecticide in the United States but this research, hopefully, will lead to a more in-depth exploration of its feasibility as a future environmentally friendly insecticide. Previous uses as mentioned above have been shown to have no deleterious effects on plant, animal, or human ecosystems.



Head Lice Resistant to Pyrethroids

Kelly M. Loftin

You have likely seen the headlines such as “Super Head Lice” and “Head Lice Growing Resistant” or viewed a local newscast about head lice. What is all this about? A paper delivered at the American Chemical Society’s Annual Meeting and reported in *Smithsonian.com* described an increase in pyrethroid resistance in head lice. Dr. Kyong Yoon, a researcher at Southern Illinois University-Edwardsville and lead author of the study, evaluated a large number of lice samples across the U.S. for a gene mutation linked to pyrethroid resistance. Dr. Yoon reported “What we found was that 104 out of 109 lice populations we tested had high levels of gene mutations, which have been linked to

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resistance to pyrethroids.” The study indicated that lice populations in at least 25 states have developed this type of insecticide resistance and Arkansas is one of those states.

Why is this significant? The mutation is responsible for *kdr* (or knockdown resistance) that can result in control failure when using pyrethroid insecticides such as permethrin. Permethrin is the active ingredient found in many over-the-counter treatments used to control head lice. This type of pyrethroid resistance has been identified in a number of important pests including mosquitoes, cockroaches, house flies and horn flies.



Head louse. Dani Barchana, Self-employed, Bugwood.org.

Should we panic? Absolutely not. I know we may be concerned about our elementary school children returning this fall and getting infested with head lice. But, if a child becomes infested, it is not the “end of the world” and effective treatments using integrated pest management exist that can control the infestation. We simply need to be more diligent in our control efforts. In addition and when necessary, other products that do not contain permethrin are available to control head lice infestations. Examples of these newer products available through prescription include Natrobe™ (spinosad), Sklice® (ivermectrin) and Ulesfia® (benzyl alcohol). These newer products being prescription treatments are likely more expensive than over-the-counter treatments.

Although head lice infestations often result in anxiety and irritation, the medical community generally regards head lice as a nuisance. Head lice generally spread from person to person through direct contact. This is the main reason head lice infestations are common in elementary schools. Children sit, play and work in close proximity to one another providing ample time and opportunity for lice to walk from head to head. Head lice do not hop, fly, or jump, they crawl. They can also be transferred from person to person through infested hair brushes, combs, hats and bedding. Head lice can only survive a day or two off the human head. Their entire life is spent on a haired head. Nits (eggs) are usually laid on hair no more than ¼ inch from the scalp. Nits seen more than 1/4 inch from the scalp are likely already hatched or dead. However, it is best to examine nits with a magnifying glass to see if they have hatched because in warmer climates or on people that wear hats, viable nits are occasionally found farther than ¼ inch from the scalp. The first sign of a head lice infestation is usually scratching and should be followed by careful examination for nits or crawling lice.



Nit Comb, Whitney Cranshaw, Bugwood.org.

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Simple Steps to Control Head Lice:

1. Use medicated (louse) shampoo if viable eggs or active lice are observed. When using non-insecticidal shampoo, multiple shampooing is necessary.
2. Remove nits using a specially designed nit comb (*see photo on previous page*). This is likely the most important step in controlling lice. Combing with a nit comb should be repeated daily as long as live lice or nits are observed.
3. Remove nits from potentially infested clothing. Clothing and bedding should be washed in hot water and dried in a hot drier. Items that cannot be washed (plastic helmets, ear plugs, etc.) can be placed in plastic bags and placed in a freezer for at least 10 hours.
4. Check the infested person daily for nits until the infestation is gone. Once the infestation has been controlled, check weekly for reinfestation.

Rat and Mouse Control

Becky McPeake

Most rodents play a beneficial role in nature and live in areas where they rarely come into contact with people. Notable exceptions are house mice (*Mus musculus*), Norway rats (*Rattus norvegicus*), and roof rats (*Rattus rattus*), also called commensal rodents. These rodents live in close association with humans, even depending on us for their survival. Commensal rodents consume and damage food, contaminate food with their urine and feces, and transmit diseases to humans.

Identifying the type of commensal rodent is important when implementing control methods.

Norway rats are the largest and most aggressive of the commensal rodents. They weigh 10 to 17 ounces and are 12 to 18 inches in length. Norway rats tend to inhabit lower portions of structures and nest in burrows, but will climb when necessary. Roof rats are 8 to 12 ounces and 13 to 17 inches in length. They climb and live in the upper portions of structures, and can tightrope along electrical wires to gain entry into a home. House mice are the smallest of the three, weighing about 1 ounce or less, and 6 to 7 inches in length.

Indirect signs of commensal rodents are a characteristic strong odor of urine and visual inspection of droppings. House mice droppings are cylinders of 1/8 to 1/4 inches in length and pointed on both ends. Rat droppings are 1/2 to 1 inch long and blunt on one end. Tracks can be detected by dusting talc or flour on floors along the base of walls. Both urine and hairs are fluorescent under black light.

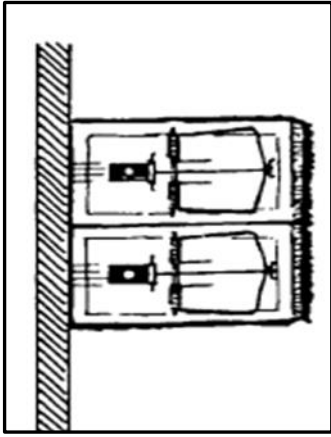


Commensal rodents damage stored food and grains, consume garden crops, transmit diseases, and gnaw doors, woodwork, walls, pipes and wiring, which sometimes results in fires.

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Placing two traps perpendicular to the wall doubles your chances of success.

When one or two commensal rodents are in a home, snap traps are the most economical and efficient way to remove these invaders. Increase your odds by placing two traps side by side and perpendicular to the wall, with the trigger side of the trap closest to the wall. Place traps in areas where you have seen them, their feces, or other visible sign.

Sometimes grease marks where their fur rubs the wall are seen. A study conducted by the National Wildlife Research Center indicates house mice are most attracted to bacon grease, peanut butter, and cheese. Place one of these on the trigger. If the rodent licks off the bait but doesn't trigger the trap, tie or glue a sunflower seed to the trigger. Another trick is to glue a square piece of cardboard to the trigger to increase the size of the trigger area.

Use disposable gloves when removing dead rodents from traps. Place the carcass in a zip lock bag and dispose with the trash. Or use the bag as a glove by turning the bag inside out. Place your hand in the bag and grab

the carcass. Pull the bag over the rodent without touching it, and zip the bag shut.

Live box traps can be used to capture and release rodents outdoors. Put a small amount of batting, wood chips, or anything they might use for nesting material in the back of the live trap. Bait the trap with peanut butter, seeds, or even water in a small container. Release the rodent a mile or more from your home and away from other homes. Another rodent may re-enter your home if entry ways have not been sealed.

Lethal poisons can be effective if applied according to directions. Commensal rodents which do not consume enough poison will learn to avoid bait. Those which consume a lethal dose may not die immediately. Often they die in inaccessible places, such as behind a wall, where an odor will linger until the body fully decomposes. Pets and non-target wildlife species can become ill or die from consuming poisoned rodents. For these reasons, poisons typically are not the best option.

For large infestations of commensal rodents, three approaches are recommended:

- (1) sanitation/habitat removal;
- (2) population reduction, and
- (3) exclusion.

These three approaches need to be conducted simultaneously to improve effectiveness. Trash and open food sources need to be removed from inside and outside the home. Use metal, sealed garbage containers and store food in rodent-proof containers. Eliminate accessible open water sources, such as a pet's watering bowl. Without food and water, rodents become more attracted to traps. Set multiple traps where commensal rodents are present. Excluding rodents from entry is key. Population reduction methods will be ineffective if new rodents continue entering the home and finding food sources. Wood piles, old boards, overgrown shrubbery, and other hiding places need to be removed from outside the home, making commensal rodents more prone to predation.

Additional resources are available at Extension's Dealing with Wildlife website at <http://www.uaex.edu/environment-nature/wildlife/dealing-with-wildlife/>.

Name That Weed

Bob Scott

This month's weed goes by many common names. Like cotton it is a member of the mallow family, which gives it one of its names. But only one common name is accepted by the Southern Weed Science Society. Common in some areas less so in others this weed is found all throughout the Southern and eastern half of the United States. Cotyledons are Ovate to heart shaped, but the leaves have pubescence on both sides and the distinct shape shown in the pictures are its most identifiable features in the vegetative stage, along with its stout stem, which often can make you think it's a baby tree of some kind! Its fruit is Star shaped with brownish grey seed that are distinctively kidney shaped with fine bumps on the surface. A common weed in cotton and soybean in Arkansas before Roundup Ready pretty much took care of it. Be the first to name this weed (common name) and email it to me at bscott@uaex.edu and win a prize!



To The Readers

Please offer any suggestions for Urban or Livestock Integrated Pest Management topics (insect pests, plant diseases, weed problems, wildlife control problems) that you would like to see – **OR** – feel free to submit an article that you have prepared. Kelly and I will be glad to include it (subject to editing). Send feedback to jhopkins@uaex.edu or kloftin@uaex.edu

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