

## Keeping Apartment Homes Pest-Free, Without Toxic Pesticides

# Scram

BY KATHY SEIKEL

**No resident likes insects and rodents living inside their apartment. Common sense measures and regular, routine maintenance can keep pests away, reducing the need to spray.**

One of the trickiest environmental challenges for apartment dwellers and apartment managers alike is pest management—finding the best way to control unwanted invaders while minimizing the use of potentially toxic pesticides. Pests, such as cockroaches, mice and rats, can be particularly troublesome in multifamily housing or other densely populated buildings where they are hard to control. Pest problems in one apartment, left unchecked, can spread to neighboring apartments.

However, as vexing as most people find the pests in apartment buildings, many are unaware of the environmental and health risks that can be associated with pesticides—the chemicals used to keep pest populations in check.

### Minimizing Pesticides

Pesticides are chemicals designed to kill, mitigate or repel pests. Many pesticides are toxic to pests by their very nature. When used improperly, pesticides can prove toxic for people, as well.

Potential health risks associated with exposure to pesticides include short-term, or so-called

acute, effects and longer-term, or chronic, effects. Exposure to high levels of pesticides, usually because of misapplication, may lead to acute effects, such as headaches, dizziness, muscle twitching, weakness and nausea. Long-term or excessive exposure to some pesticides has been linked to cancer, reproductive effects and effects on the central nervous system. A number of studies are under way to determine whether pesticides cause the illnesses that have been identified.

The Environmental Protection Agency (EPA) is responsible for regulating the distribution and use of pesticides in this country. A big part of this function is the registration—or licensing—of pesticides. Before registering a new pesticide or a new use for an already registered pesticide, the EPA must first ensure that, when used according to EPA-approved label instructions, the pesticide can be used with a reasonable certainty of causing no harm to human health and unreasonable risk to the environment. To make these determinations, the EPA requires applicants to submit more than 100 different scientific studies and tests about a pesticide.

The EPA believes the evaluation and registration process is protective of individuals and





the environment so long as the product is used according to label instructions. Even so, the agency stresses the importance of reducing unnecessary exposure to pesticides.

### High-Risk Groups

Certain groups of people may be more sensitive to the effects of chemicals than the general population. EPA risk assessment builds in safety factors to provide extra protection for groups of people who may be more sensitive to the effects of pesticides, including children and older adults. Take extra measures to minimize pesticide use in apartment buildings where residents include children and older adults.

Why are these groups at greater risk than the average person? For children, risk is associated with their size, stage of development and behavior patterns. Pound for pound, children eat more food, drink more water and breathe more air than adults. Children exposed to the same concentration of a chemical in the air compared with an adult will receive proportionately larger amounts of the chemical in relation to their body weight.

Children's organ systems—the nervous system, reproductive system, immune system, etc.—are still developing and can be more vulnerable to damage through exposure to environmental toxins. Lastly, children's behavior heightens their risk. Children live in different spaces than adults. Infants and toddlers tend to be physically closer to floor areas where pesticides may have been applied or where pesticide residues may have collected.

Older adults may be more susceptible to the effects of pesticides because advanced age often leaves them with compromised immune systems, making it harder for their bodies to function when exposed to environmental toxins.

Different exposure patterns, age-related changes in metabolic processes, lifetime accumulations of



persistent toxicants, and reduced reserve capacity in different organ systems are some of the critical characteristics that may make older adults susceptible to toxicant-induced dysfunction or degeneration.

Older adults are also more likely to have medical conditions that may leave them more susceptible to chemicals. And, they are more likely to be taking medication that potentially could interact with pesticides.

### Controlling Pests Without Pesticides

EPA recommends using an overall pest management strategy, often called “integrated pest management” or IPM, for control of pests in apartment buildings.

IPM is a common sense approach that uses a variety of methods to control pests. Chemical pesticides may be part of an IPM program, but they are just one tool among many used for effective pest management. Because IPM relies on a variety of techniques to control pests rather than relying exclusively on the use of pesticides, it can reduce health and ecological risks associated with the use of potentially toxic chemicals. The goal of IPM is to reduce exposure to both pests and pesticides.

The first step in an IPM program is to prevent pests from becoming established. Understanding how pests live often can prevent problems simply by denying pests food, shelter and water—the resources they need to survive and reproduce. Sometimes, prevention is as simple as blocking pests access into a building or paying extra attention to sanitation and maintenance.

Prevention begins with building managers and extends to other people in the building, including custodians, plumbers, electricians and, most importantly, the residents themselves. In fact, experts agree that a successful IPM program requires not only the collaborative efforts of people involved in management and maintenance of the building but also the understanding and cooperation of residents.

Fred Whitford, noted IPM expert and coordinator for pesticide programs at Purdue University, likens pesticides to medicines, asking “What happens after a physician diagnoses a patient with high blood pressure? The doctor writes a prescription and tells the patient to come back for another checkup. But, while prescribing the high blood pressure medicine is important, a good physician doesn't stop there. The doctor advises the patient to lose weight,

change his or her diet, get more exercise and reduce stress. The

blood pressure medicine leads to immediate control over the situation, while changes in life style and behavior improve the patient's long-term health: the one-two punch for getting well. In the same way, a prescribed medicine can alleviate immediate health



threats and a prescribed pesticide can kill a cockroach, a mouse or bacterium.”

Pesticides alone often prove to be a temporary solution, resulting in repeated treatments that fail to address the root cause of the problem, meaning eliminating the conditions pests need to survive: food, water and a place to hide. Don't invite pests over for food and drinks! Eliminating the conditions that make an apartment building an attractive home for pests is the first key step to controlling a pest problem. This also will minimize the need for repeated applications of pesticides.

### Facilities Management

Good facilities management is essential to IPM, and the apartment building manager should play a key role.

Many property managers work on a “complaints called-in basis,” said Richard Kramer, technical director for American Pest Management Inc., a pest control company located in Takoma Park, Md. Under that type of system, the property manager records and schedules pest management services for apartments from which complaints have been registered. The number of service requests may be contractually limited.

Kramer recommends a different approach: a building-wide rotational service inspection schedule. Using this approach, the apartment building is subjected to a systematic and thorough inspection periodically. For maximum effectiveness, these inspections should include each and every apartment in the building. Routine inspections are key to effective monitoring, the method by which pest management experts keep an eye on pest levels to make sure they do not get out of hand.

Kramer does not advise regularly scheduled chemical treatments. He considers them a waste of money and unlikely to result in a permanent fix to the pest problem. Yet, he admits that pesticides are an important tool in the war against residential pests, saying that, in the real world, even the best-managed IPM programs may require the judicious applications of pesticides to eliminate stubborn pest problems. The following are seven essential components to good facilities management:

**Monitoring.** Monitoring is the periodic estimation of relative pest population levels, building conditions and other factors that might influence the successful management of pest problems. Information gained through monitoring is critical for determining whether control measures—chemical or otherwise—are necessary.

In many apartment buildings, maintenance technicians are more familiar with the buildings they manage than anyone else that works in the building. They are the ones most likely to see pests or evidence of pests and the conditions that enable pest infestations, and they are the ones most likely to be blamed if a resident sees pests. Maintenance technicians should be familiar with pests and signs of pest problems. Many successful IPM programs have involved maintenance technicians as “scouts”

for pests by teaching them to look for signs, such as rodent droppings, feeding damage and cast skins of insects.

Electricians are also important for an effective monitoring program because they often go into areas of buildings that others do not frequent, such as crawl spaces and inside drop ceilings. If electricians notice pests or evidence of pests in such areas, they should immediately inform the pest control manager for the building.

Plumbers are also an important part of the IPM team because they are in the best position to spot leaks, humidity, condensation and standing water that can lead to pest problems. By the nature of their work, carpenters, roofers and other tradespeople can offer additional insight into pests and structural conditions that allow pests to thrive.

**Reduce access to and through buildings.** The first defense against unwanted visitors—pests included—is making sure they do not get into the building. If there are apartments with pest infestations, spread of the infestation can be minimized to the extent the passageway from these apartments to the rest of the building can be blocked. Pest management experts recommend regular inspections of the building exterior to spot holes where pests may gain entry. Other steps to keep insects and rodents from entering or traveling through your building include:

- Fix broken windows, screens, vent covers or holes in exterior walls as soon as possible. A mouse can fit through a hole as small as the diameter of a dime.
- Doors and windows that do not completely close must be fixed immediately to prevent pests from getting in. Doors that do not seal at the bottom should be fitted with weatherproof sweeps, or the bottom should be extended, or the threshold built up to insure the gap is less than 1/4 inch.
- Automatic door closers should be considered for frequently used doors that tend to be left open, and for doors that are near rooms or outdoor areas where food or trash is present.
- Do not leave doors to buildings propped open, particularly near kitchen areas or dumpsters.
- Place screens over air intake and exhaust vents for heating ventilation and air conditioning (HVAC) systems to prevent insects and rodents from entering buildings. Whenever possible, use screens on doors, hatches, skylights and other openings. Cover fan and vent openings with galvanized mesh with openings of 1/4 inch or smaller.
- Carefully review HVAC components, such as piping and duct work, where they meet floors, walls or ceilings, and close openings pests could enter to prevent these from becoming runways for pests. The most commonly used materials for this are caulk, sheet metal, knitted copper mesh or steel wool, spray foam insulation and cement. Knitted copper mesh, steel wool and cement are among the best materials to plug openings of 1/4-inch or greater. Rodents can gnaw through softer substances.
- Plug gaps and openings where wires and conduits come through walls, ceilings, floors, the backs of cabinets, etc. to prevent rodents and insects from using electrical wires and conduits as a means to



Reduce sources of water for pests, including keeping drains and downspouts free-flowing and keeping gutters unclogged.

## 8 Ways Residents Can Keep Pests Away

Clutter provides shelter for pests—places for roaches and mice to breed and hide. Clutter also makes it virtually impossible to do effective pest control even when chemical applications are needed. Here are some helpful tips for residents:

1. Store food in sealed plastic or glass containers.
2. Keep the kitchen clean and free from cooking grease and oil.
3. Don't leave unwashed dishes standing in the sink overnight.
4. Don't leave food or water in pet bowls for long peri-

ods of time. Feed the pet and remove the food or water immediately.

5. Fix leaky plumbing and do not let water accumulate anywhere in the apartment. Don't let water accumulate in trays under houseplants or under the refrigerator.
6. Put food scraps or refuse in tightly covered trash cans.
7. Check for pests in packages or boxes before carrying them into the apartment.
8. Keep the level of clutter down. Stacks of newspapers, magazines or cardboard provide excellent shelter for roaches and other pests. ■

gain access to, and travel throughout, buildings.

- Eliminate pest access in plumbing systems. Seal around sill cocks, sewer lines and other openings. Use caulk, knitted copper mesh, steel wool or foam insulation to block access around pipe openings. These materials are often used in combination with hinged metal "collars" designed specifically to cover gaps around plumbing and other service conduits.

**Reduce sources of water.** Take steps to reduce sources of water for pests:

- Fix leaking pipes and faucets as soon as possible. A five-gallon bucket under a slow leak may seem an easy solution to a plumbing problem. However, it provides a watering trough for rats, mice and cockroaches and may be a moisture source for supporting mold growth.
- Keep roof drains and downspouts open and free flowing.
- Keep gutters clean and unclogged. Standing water and debris in gutters provides water for rats, carpenter ants, mosquitoes and other pests.
- Fix clogged or slow drains as quickly as possible.
- Replace water damaged wood as soon as possible.
- Insulate pipes in areas that might be prone to condensation. Condensation is a significant source of water for pests.
- Empty mop buckets and store mops head up.

**Manage your recycling program.** While recycling is meant to improve the environment, it can contribute to environmental problems, particularly those related to pests, if it is not handled correctly. Some key concepts that managers in charge of recycling activities should understand and practice include:

- Wash recyclable containers. Food and drink left on or in recyclables will help support insects and rodents. Use soapy water to wash bottles, cans, wrappings and other items that have food residues clinging to them before placing them in recycling bins.
- Use metal bins when practical. Pests can gnaw through many types of plastic containers.
- Line bins used to store food and beverage



Provide an adequate number of Dumpsters and trash receptacles to avoid content overflow. Outdoor trash receptacles should have self-closing lids.

containers with garbage bags and clean bins weekly with detergent and hot water.

- Equip storage bins with tight fitting lids to keep rodents and insects out.
  - Arrange for all recyclables to be picked up as frequently as possible. This keeps pests from being able to rely on a steady source of harborage or breeding area. Constant disruption of pest habitats helps keep populations from becoming established.
- Manage your garbage.** Steps to keep garbage pest-free include:
- Store Dumpsters and trash cans on concrete or asphalt surfaces as far away from the building as possible, but never within three feet of a building wall or fence.
  - Provide adequate numbers of Dumpsters and trash receptacles to avoid overflow of contents. Outdoor trash receptacles should have self-closing lids.
  - Inspect trash rooms regularly and clean up spills promptly.

**Remove pests without pesticides.** If a pest insect infestation is large, vacuuming is a quick way to reduce the population immediately. A strong vacuum can be used to pick up live cockroaches, as well as their egg cases and droppings, and rodent droppings, hair and debris contaminated with rodent urine. IPM experts recommend using a vacuum equipped with high efficiency air particulate (HEPA) filter to reduce the amount of cockroach, mouse or other allergens that can become airborne during cleaning. Elimination of rodent pests, such as mice and rats, can often be accomplished without chemicals by using simple snap traps.

### **Solicit the support and cooperation of building**

**residents.** Effective IPM in a multi-family housing dwelling requires the cooperation of all residents. The Safer Pest Control Project, a Chicago-based nonprofit organization working to reduce the unnecessary use of pesticides, implemented a number of successful pest control programs in Chicago Public Housing using an IPM approach.

An important key to their success, said Jill Viewieg, Project Manager, was getting building residents involved in the effort.

By soliciting the support of these community leaders, Viewieg and her team encouraged building residents to take ownership of the project. Community leaders attended training sessions on IPM and, in turn, provided other residents with important information about sanitation and clutter management.

As an enticement for residents to attend the training provided by resident leaders, goody bags, including useful supplies in the war against pests—cleaners, bag clips and caulk guns—were provided. Viewieg said that getting building residents involved in the project helped ensure that new procedures set up for managing pests would remain in place after her team's contract ended.

### Pest Control Contractors

As with any other contractor, a professional pest manager is responsible for adhering to the terms of the contract. Consequently, it is important that a contract include explicit requirements for implementing an IPM approach to pest management in your building.

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### Apartment Managers Pest Control Kit Available

For information on integrated pest management, call the National Service Center for Environmental Publications at 800/490-9198 or e-mail [ncepimal@one.net](mailto:ncepimal@one.net).

Many experts recommend that a good IPM contract include requirements for maintaining and using detailed pest sighting and pesticide use records, conducting inspections, consulting with the building manager or another individual charged with overseeing pest management, and providing specific recommendations for correcting pest-promoting conditions.

Don Rivard, a pest control consultant who led several highly successful IPM programs in Boston public housing programs, stresses the importance of contracting with pest control companies that keep meticulous records of pest sightings and analyze this information to develop a building-specific pest management strategy.

"Building managers are urged to beware of pest control companies that use a pro forma approach to pest control instead of one designed to address pest problems for a particular building," he said. Finally, Rivard stressed the importance of close oversight of pest control contractors and making sure property managers understand the basics of IPM.

Fred Whitford, PhD., IPM coordinator, Purdue University, West Lafayette, Ind., is an entomologist, professor and trainer. He advises that apartment managers make sure the pest control companies they contract with are qualified to do the job. In all states, an individual or company providing pest management services must be licensed. However, in many apartment buildings, pest management is carried out by maintenance staff as a collateral duty. In these situations, licensing requirements may not come into play, depending on state rules. Whitford advises property managers to know state and local requirements and check the credentials of any company or individual offering pest management services.

If maintenance staff handles pest management, it's important to ensure they follow pesticide label instructions to the letter. Misapplication of pesticides can pose serious risks for staff and residents. In a series of misuse incidents during the 1990s, the highly toxic agricultural pesticide methyl parathion was used in private homes and apartment buildings in eight states. These homes were decontaminated by EPA at a total cost of more than \$80 million, and 23 individuals were arrested on federal and state charges of illegally selling or using agricultural pesticides in residential areas.

### Making Residents Happy

Managing apartment buildings is a complex and challenging job. Not only must managers manage buildings, they must manage people, and dealing with residents' complaints about pest problems can take a lot of time. In today's competitive market place, it's more important than ever to deal with pest problems quickly and effectively so residents are pleased with their apartments and don't move away because of pest infestations. ■

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