

Brookings School's Integrated Pest Management in Schools Newsletter

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Pest Vulnerable Areas Inside Schools

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Imagine you are minding your business, preparing the day's meals for hungry students, when out of the corner of your eye you spot an ugly brown insect on the counter...a much loathed cockroach! What can you do to get rid of this and other unwanted pests that might invade your school? The first line of defense is to know what areas of your school are most vulnerable to pests and then how to make these areas unfit for their survival.

The kitchen is the most common places for pests because it has everything they need---food, water, and shelter. Good sanitation is a key component to preventing pests, so be sure to keep kitchen floors, counters, sinks, and drains clean. In the kitchen storeroom, unpack food items and store them on metal shelves. Discard cardboard packing boxes and avoid using wooden pallets. Small roaches love to live in the corrugated areas of cardboard. Also keep pipes in good working order and fix leaks when they are discovered. Seal around pipes and caulk other cracks and crevices to deprive pests of harborage areas in wall voids.

Classrooms, concession stands, and teacher's lounges may also have cupboards, microwaves, and refrigerators where food is stored, and students and teachers may bring their lunches or snacks daily into these areas. Students may also eat in the gym at athletic events or 'store' food in lockers. Keeping crumbs picked up, throwing away uneaten food, and keeping appliances clean can greatly reduce the chance for pests to survive in these areas.

Some classrooms also keep pets. Pet food, cages, and waste are very attractive to pests. Keep birdseed, fish food, or hamster feed in sealed plastic or glass containers. Keep the pet's area clean and dry.

Bathrooms and boiler rooms sometimes have problems with moisture; run dehumidifiers or fans in these areas as needed. *(Continued on the next page)*

House Mice: Nature's Houdini

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Most people know that the house mouse (*Mus musculus*) is difficult to control because of its incredible reproductive rate. In a single year, a female can raise 5 to 10 litters, of 5 to 6 young each. In turn, the young born 18-21 days after mating can themselves reproduce in about 2 months.

But mice present more challenges than just a rapid reproductive rate. They are also incredibly gifted in their physical abilities. Appreciation for these abilities is critical in order to properly exclude mice from buildings and other structures.

To help identify ways mice may gain entry into a structure, their capabilities must be understood. For example, mice can:

- run along or climb electrical wires, ropes, cables, vines, shrubs, and trees to gain entry to buildings;
- climb almost any rough vertical surface such as wood, brick, concrete, and weathered sheet metal;
- crawl horizontally along pipes, augers, conveyors, and conduit; and
- gnaw through a variety of materials, including aluminum sheeting, wood, rubber, vinyl, plastic, and concrete block;
- jump 18 inches vertically;
- drop 8 feet and scurry away unharmed;

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Seal around pipes going into walls or floors, and fix leaks promptly.

Trash cans should be emptied daily. Dumpsters should be kept closed and away from the building to discourage flies and wasps from entering the building. Screens should be kept on windows to exclude flying pests.

Keep janitorial closets, offices, classrooms, and storage areas clean and uncluttered to prevent pests. Janitorial wet mops should be hung to dry after use; dry mops and brooms should be vacuumed and hung on the wall.

Sweeps should be installed/adjusted/replaced under doors to keep rodents and insects out. A gap the size of a pencil eraser is all that is needed for a mouse to get in the building.

And if you happen to see a sticky trap in a pest vulnerable area, leave it alone, as it is being used to monitor for pests. Prevention is the key to good pest management. Working together, all school employees can help reduce or eliminate pest vulnerable areas and ultimately reduce pests!

- enter openings about ¼-inch in diameter;
- travel up to 1½ miles; and
- hang upside-down, then travel some distance on ¼-inch wire mesh or 12-gauge wire.

If these abilities weren't enough, mice can perform all these things on a 1/10 of an ounce of food per day. So next time you see a crack or crevice, you think is too difficult for a mouse to reach, think again.

For additional information:

Controlling Rats

<http://www.ianrpubs.unl.edu/sendIt/g1737.pdf>

Controlling House Mice

<http://www.ianrpubs.unl.edu/sendIt/g1105.pdf> .



Cockroaches and Human Health **Clyde Ogg** **University of Nebraska-Lincoln**

Did you know cockroaches have been implicated in cases of Salmonella food poisoning? They can also carry Staphylococcus, Streptococcus and other bacterial pathogens on their bodies.

You see, cockroaches eat just about anything including discarded food. Disease bacteria can remain in the cockroach digestive system for a month or more. Later, human food or utensils can become contaminated with cockroach feces. Cockroaches can also physically transfer germs by crawling over bacteria-laden substances and later walking over dishes and eating utensils.

Some people are allergic to cockroaches. In infested areas, proteins in crushed cockroach body fragments and feces become part of dust. After inhaling dust in a cockroach-infested area, sensitive children and adults develop allergic symptoms: runny nose, itchy eyes and sneezing.

Some people who are allergic to cockroaches may develop asthma, which can be a life-threatening medical condition. About 20 million Americans have asthma, which has greatly increased in the last few decades. Although asthma may have several potential causes, cockroach allergens in the indoor environment are a major asthma trigger. Research has shown 23 to 60 percent of urban dwellers with asthma were allergic to cockroaches.

Studies have shown most asthmatics that are allergic to cockroach allergens will have an asthma attack after a single breath of allergens. Other asthma triggers include dust mites, animal dander, mold, and tobacco smoke. People with asthma may react to more than one allergen so identifying and reducing exposure to all allergens are needed to manage asthma effectively.

Integrated pest management takes steps to reduce or eliminate cockroach and other pest populations, thus helps to reduce exposure to allergens and may prevent asthma attacks.

School IPM Newsletter in collaboration with

•Brookings Public Schools

•South Dakota State University

•South Dakota Department of Agriculture

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