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COMBATING THE



HOUSE mouse

The house mouse is the most common rodent infesting schools today. Though not native to North America, having arrived with early settlers from Europe and elsewhere, the house mouse has adapted brilliantly to life with humans. They invade and contaminate our dwellings, our places of work, and even cause significant economic damage to food stores and crops in agricultural areas.

The adorable house mouse is 5 to 8 inches long and light brown, grey or sometimes black with a lighter belly. He is equipped with a naked tail and ears larger than his cousin, the deer mouse.



house mouse

The deer mouse (a.k.a. "white-footed mouse") has a furry tail, white feet, and a gray to brown body that contrasts sharply with his white belly. Deer mice will invade outbuildings in rural areas, and are less common in urban environments. The deer mouse "is the most widely distributed and abundant mammal in North America and currently the primary reservoir host of Hantavirus" (Corrigan, 2001).

Though considered harmless and cute by some, just consider these house mouse facts:


- * Able to transmit *Salmonella*, a bacteria responsible for food poisoning.
- * Urinates several hundred - even several thousand - "micro droplets" per day!
- * Can produce from 25 to 60 young each year!
- * May transmit the following parasites to humans and pets: ringworm, mites, tapeworm and ticks.

Access & Infestation...HOW do they get inside??



Mice may infest schools year round, but as the house mouse cannot hibernate he is more likely to invade structures in the fall. While in search of food and shelter from colder temperatures, mice are drawn to buildings - which initially offer them cover. From there it only takes a hint of warmth or the scent of food from an access point to invite a *permanent* mouse resident.

Modes of entry include open windows and doors, cracks and any small openings around piping, air ducts, roofing, and doors.

Any hole 1/4" or larger can accommodate a mouse. That means if you can stick a pencil into a hole this size  a mouse can also get through it!

Like many types of pests, mice are hitchhikers and can be inadvertently brought indoors in stored boxes (especially corrugated cardboard boxes) and palettes. Arts & crafts supplies, Christmas ornaments, blankets and clothes, are all commonly stored materials with mice. They can also access building roofs via overhanging shrubs and trees, and will climb vertical surfaces and wires if need be.

Mice owe their success to being highly adaptable; they base their foraging activity on when humans are least present (allowing them to escape our awareness), they can survive on just about any kind of food so their dietary needs adapt readily, and they can go without water for considerable periods if necessary. This adaptability and secretive nature makes infestations difficult to perceive until numbers are considerable.

Once mice have gained entrance, they can do serious damage by contaminating food and gnawing at materials.

Evidence of mice (other than sighting the animal itself) includes damage to food containers, nesting materials, and the small, tapered fecal pellets left in areas where the mouse feeds or is harbored - i.e. **CLUTTERED AREAS!**



Every school has their fair share of "clutter bugs", no not insects, but teachers and members of staff who "have too much STUFF" to allow good sanitation standards to be maintained.

Additional evidence of mice includes grease trails and smidge marks along the patrol path of their territory - around wall skirting, entrance holes, etc. Also, mouse urine fluoresces, so the hundreds of micro droplets they lay down each day can be viewed using a black light in an otherwise dark room.

Keep mice out of schools and homes by:

- 1) Repairing or sealing all openings that allow entrance.
- 2) Removing indoor and outdoor debris that could harbor mice such as woodpiles, clutter, and mulch piles.
- 3) Clearing high weeds - since weeds and seeds serve as food and shelter for mice during warm weather.
- 4) Cleaning up food scraps and storing foods appropriately to prevent easy access to food. All pet foods, bird seed and human food should be stored off the floor and in freezer zip lock bags or plastic containers with lids.

MOUSE MANAGEMENT



PREVENTION

* Sanitation – keeping floors and shelves free of food debris is critical. The “Breakfast in the Classroom” program does not have to be at odds with IPM. For example, choose foods like bagels over muffins to minimize crumbs. Make sure floors are swept or vacuumed regularly, especially areas under furniture on rollers. Corner cleaning is imperative.

* Mouse-proof buildings – school staff should notify maintenance of holes and entryways. Corners, doors, and around piping are common entry points. Remember to look up at ceilings and down low, too!

TRAPPING

A trapping program *combined with prevention methods* should be implemented if an infestation is apparent.

Glue boards are inhumane and only catch immature mice, allowing adults to continue breeding.

When immature mice become trapped on glue boards, instances have occurred where students were exposed to very upsetting noises and sights as confused faculty or staff try to discover the source of the distress. Mice take a long time to die stuck on traps, so use the more humane and effective approach.

We recommend mechanical traps to control light to moderate infestations of mice.

Victor traps can be placed along the base of walls and in corners of rooms where mice are suspected. Traps should be set in the evening and collected the following morning prior to the arrival of students.



Careful inspection should be done before ending trapping as multiple infestations are not uncommon.

BIOLOGICAL CONTROLS

- * Snakes prey on mice and limit their populations.
- * Raptorial birds – owls, hawks, and shrikes rely on small rodents as part of their diet.



Mice may breed year-round and a female may have 5 to 10 litters per year.

Arizona IPM News



Protecting children’s health is serious business. It requires awareness and dedication on the part of the entire school community – not a simple feat! So it’s important that successful IPM efforts instituted by principals, custodians, maintenance, teachers, and other school personnel (and students!) be recognized and rewarded.

For the second month in a row, we are pleased to announce recognition efforts for IPM Schools in Arizona. **Mesa Public, Kyrene, and Washington Elementary** school districts have been nominated for the **National Children’s Environmental Health Recognition Award**. This award is given by the U.S. Environmental Protection Agency, and is designed to recognize schools who have demonstrated a “...commitment to protect children from environmental risks.” An award ceremony will be held in Washington DC, March 2005.

Congratulations guys, it is a bug deal to be nominated for such awards. Good luck with your nominations!

Pest Management is People Management

IPM is the first of several Children’s Environmental Health programs that will be implemented using the Monroe Model process. The next layer of the program will facilitate the adoption of **Tools for Schools** which focuses on improving indoor air quality.

Information sources:

Illinois Department of Public Health, Prevention & Control website:
<http://www.idph.state.il.us/envhealth/pchousemouse.thm>

Pest Press – Marc Lame, Indiana University.
<http://www.mccsc.edu/~jjochim/ipm.html>

“Rodent Control: A Practical Guide for Pest Management Professionals” –
Dr. Bobby Corrigan

University of Florida Entomology and Nematology Department’s School IPM website (<http://ifas.ufl.edu>)

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Few bugs are bad! More than 95% of all insect species are beneficial to humans.