



Horticultural Tips: Basic Tree Care

by Chris Feeley, Extension Urban Forester, Iowa State University

Now that Arbor Day is over and the new trees are planted around your school, it's time to sit back, relax, and watch those trees grow. Right? Well, not exactly. I receive numerous phone calls from people wanting to manage pest problems on newly planted trees, when problems could have been prevented by making the trees "happy." Trees planted in our landscapes perform better, look better, and are less susceptible to pest problems if we provide some of the basic requirements for good growth and function. Two of these basic requirements for newly planted trees are watering and mulching.

Watering sounds fairly straightforward, but it is often done improperly. Watering should be done during the first year after planting and be considered for the second year. Water every 10–14 days if natural rainfall has been less than 1 inch. Watering too frequently (earlier than 10–14 days) can drown the roots, causing them to suffocate, which slows root expansion or may kill the root system. Water slowly and with sufficient quantity to ensure that the entire root system is soaked. Make sure that the original root ball and surrounding soil also are soaked.

Mulching is one of the best cultural practices for enhancing the growth and vigor of your trees. Mulching around trees aids in cooling soil



Keep mulch 3–6 inches from tree trunk.



Mulch out to the dripline to protect fine feeder roots.

temperature, conserving soil moisture, improving soil structure, and controlling competing weeds. In addition, mulching keeps the lawn mowers and trimmers away from the trunk of the tree, preventing potentially fatal wounds. Wood chips and shredded bark are the preferred mulches. When mulching, avoid placing the mulch in contact with the main stem of the tree, mulch to a depth of 3 to 4 inches, and mulch out to the dripline (area from the trunk to the tips of the

branches) of the tree. Over time, fresh mulch must be incorporated.

Approximately 85 percent of my pest management calls involve trees that are under moderate-to-severe stress. Remember, many of the tree pests are opportunistic and can only successfully colonize stressed trees.

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Update on School Lesson Plans

Erica Jenkins of the Community and School IPM, Michigan State University Pesticide Education Program recently released, *Exploring Urban Integrated Pest Management: Activities and Resources for Teaching K-6*. This resource provides teachers with background information, hands-on activities, worksheets, and resources that engage students in real-world learning about IPM.

The curriculum has been road-tested in Michigan, where school IPM is required by state law. This resource equips teachers to enrich regular classroom activities or can serve as the basis for a year-long theme on IPM. The publication is available at <http://www.pested.msu.edu/CommunitySchoolIpm/curriculum.htm>

Exterior Pests: Why weeds?

by Robert Hartzler, Extension Weed Scientist, Iowa State University

Weeds are common pests of school grounds, frequently infesting turf, playgrounds, and parking lots. Some of the undesirable characteristics of weeds on school grounds are their lower tolerance to heavy traffic compared with turfgrass species, ability to degrade sidewalks and other paved areas, and the poisonous or irritating nature of some weed species.

Often, the first reaction to weeds is herbicide treatment. This approach may provide quick gratification, but in most situations, the weeds return quickly. Determining why weeds have invaded the area and creating an unfavorable environment for their establishment and survival can achieve a more permanent solution.

Creating an unfavorable environment. The best way to reduce weed problems is to limit the availability of light, water, and nutrients. Actively growing sod can outcompete most weeds for light and other limiting resources, so promoting vigorous growth of turfgrass is an effective weed management tool. Proper mowing and fertilization play key roles in maximizing the competitiveness of turf against weeds.

Mulches are an excellent preventative tactic for ornamental plantings and areas with too much shade or activity to support turfgrass. Preventing weed establishment in these areas also eliminates a source of infestation for other areas on school grounds. Organic mulch should be spread 3 to 4 inches in thickness to be a deterrent to weed colonization. Placing landscape fabric under the mulch provides an additional barrier to weeds.

A common problem in schoolyards is compaction due to heavy foot traffic. Aerating soils invigorates turf growth and reduces weed problems, especially along sidewalks and in play areas. Weeds also invade cracks and other open areas in sidewalks and parking areas. The root growth of plants in these areas can promote further degradation of pavement. Sealing cracks is the best way to eliminate weeds in these areas.

In summary, the first step in an integrated weed management program is identifying why weeds are able to invade the habitat. Modifying these sites so that they are less favorable for weeds usually is more efficient and less costly than controlling the weeds after they become established.



Weeds quickly invade openings in paved surfaces and can speed degradation of these surfaces.



Proper mowing maximizes competitiveness of turf against weeds.

Interior Pests: Fly Management

by Ken Holscher, Extension Entomologist, Iowa State University

Flies can occasionally be found in and around schools. The first and most important step in responding to potential fly problems is to accurately identify the fly, or flies, causing the problem. Proper identification is essential to understanding the life cycle and behavior of each type of fly so that appropriate management tactics can be taken.



House fly.

House flies are opportunistic pests attracted to odors produced from food or breeding materials, such as garbage. Thus, the presence of house flies in schools points to improper collection and disposal of garbage, particularly food scraps and other refuse collected from cafeterias. House flies are most common in schools during August and September, and again in late May and early June. Collecting garbage in heavy-duty plastic bags, sealing these bags with ties, and removing the bags from the school daily are important in the management of house flies. If bags must be stored in outside dumpsters, the dumpsters should be located away from the school building(s) and have tight-fitting lids that remain closed. Keeping entrance doors closed and making sure windows have tight-fitting screens also help prevent entry of house flies into schools.

Flies that appear inside the school in late winter or early spring are probably either **cluster flies** or **face flies**. These flies resemble house flies, but they differ

drastically in behavior. Unlike house flies, both cluster flies and face flies survive the winter as adults. In late September or early October, these flies may travel several miles in search of a suitable location to overwinter and are attracted to large silhouettes on the horizon; thus, a school, house, or other large building in the country or on the edge of town may attract large numbers of these flies. They enter buildings through cracks in windows or through vents. If outside temperatures increase for brief periods during the winter or early spring, cluster flies and face flies can become active and enter classrooms or other school areas. These flies, unlike house flies, do not feed, reproduce, or lay eggs within the school and cannot live within the school, so cluster or face flies within schools quickly die. Locating, eliminating, or minimizing entry points into the school can be effective in managing cluster flies and face flies.

Blow flies may, at times, be found in and around schools. These flies resemble house flies but differ in having a metallic shine. Depending on the species, these flies may be a metallic blue, green, or bronze. Blow flies only develop in dead animal flesh. Thus, the presence of these flies within the school suggests a dead rodent or bird nearby. Blow fly problems are typically sporadic and short lived. Locating and properly disposing of any dead animals in or around the school prevents occurrence of blow flies.

Will IPM be required in schools?

by Mark H. Shour, School IPM Coordinator, Iowa State University Extension

National discussion about pesticide use in and around schools has been lively since 1999. Senator Liebermann (Connecticut) requested that the United States General Accounting Office (GAO) investigate pesticide use in schools, and the GAO report, *Pesticides: Use, Effects and Alternatives to Pesticides in Schools* (November 1999), indicated that there was an absence of data concerning this issue at state and federal levels.

Amendments to federal legislation have been considered from 1999 to the present, including prohibition of certain pesticide use in schools, establishment of IPM as the pest management

scheme for public schools, requirement of prenotification, and posting related to pesticide use. Although the report was successful in bringing the issues to public attention, supporters have been unsuccessful in passing legislation. The most recent effort was the School Environment Protection Act (SEPA) that was struck as an amendment from the Farm Security and Rural Investment Act (May 2002).

Some type of federal legislation over pesticide use on school property is foreseeable. Formal school IPM programs exist as mandates in Illinois, Louisiana, Massachusetts, Maryland, Michigan,

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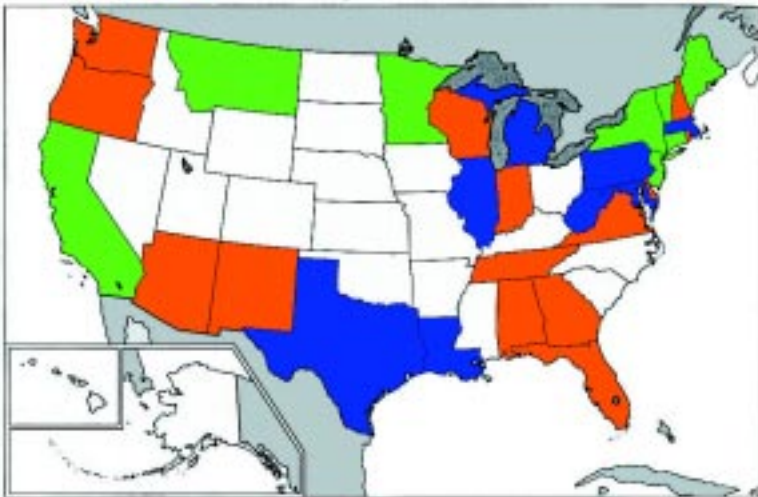
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Pennsylvania, Texas, and West Virginia) and as voluntary efforts in California, Connecticut, Maine, Minnesota, Montana, New Jersey, New York, and Vermont) (see map). Another 13 states (see map, orange) have shown strong interest in pesticide use in schools. The remaining 20 states show varying interest. A national effort to standardize pest management in the school environment is anticipated.

Currently, it is unsure whether federal law will mandate IPM in all public schools. If each state would enact some voluntary or mandatory rules, there would be lessened interest in a federal measure. But even so, many activist groups test or fine-tune rules pertaining to pesticide use. Gene Harrington, Manager of Governmental Affairs for the National Pest Management Association, stated, "School pesticide use appears to have incredible staying power, and the mere enactment of school

pesticide use legislation or rules may not signal the end of the debate. If a particular measure does not meet the activist groups' litmus test, they work to oppose it or refine it the following year."

Until the legislative issues are resolved, it is best for school administrators and maintenance directors to shift from calendar-based pesticide application to a management plan that integrates all reasonable control measures to prevent or solve pest problems on school property.



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