# School IPM 2015

## Reducing Pest Problems and Pesticide Hazards in Our Nation's Schools

School IPM 2015 Newsletter: May 2013

**In This Issue**



**Receiving a forwarded copy? Know of others who should receive this newsletter?**

join our mailing list

Find us on Facebook

Join the Schoolbugs listserv to ask questions, learn from others and share successes and challenges.

SCHOOL IPM LISTSERV

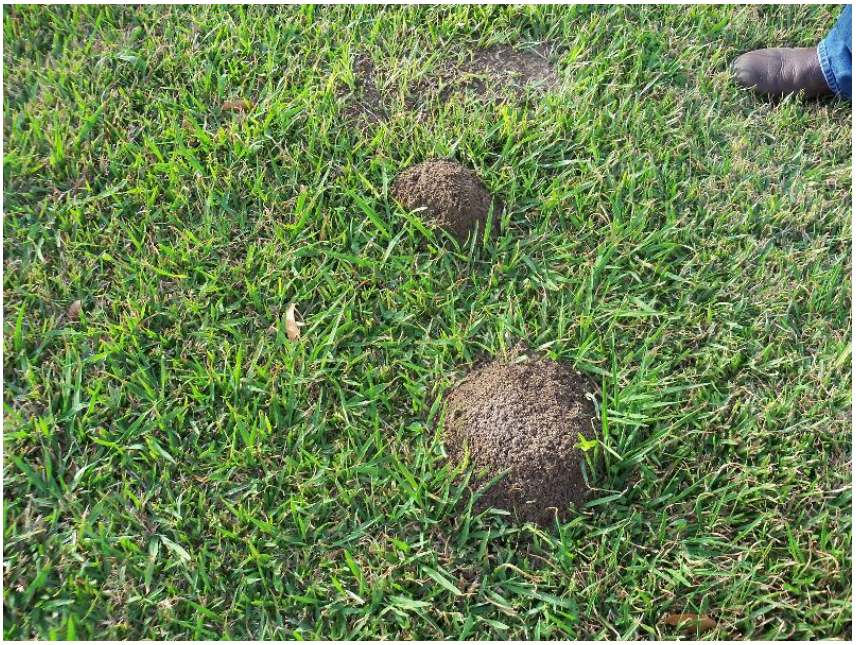
*View this newsletter as a PDF.

### Greetings from School IPM 2015!

Every day, 49 million children attend school in the United States, served by nearly seven million teachers and staff. But they're not alone. Schools are also frequented by a number of pests including cockroaches, mice, dust mites and more. Asthma is epidemic among children, impacting nearly 6% of school children nationally with rates as high as 25% in urban centers. Cockroaches are potent asthma triggers.

Integrated Pest Management (IPM) is a prevention-based, highly effective approach proven to reduce pest complaints and pesticide use by up to 90% in schools and other public buildings. IPM practices such as sanitation and exclusion also improve food safety, fire safety and energy conservation. Our newsletter highlights real-life examples of IPM in practice and can help you start an IPM program in your school district. For more information, visit www.schoolipm2015.com.

### Take the Sting out of Fire Ants!



Fire ant mounds are fluffy piles of soil that have no central opening like most ant mounds. Photo courtesy of Texas A&M AgriLife Extension.

The red imported fire ant, a native of South America, is established in the southern United States. Its sting can cause white, fluid-filled pustules which may become infected if scratched. For most people, fire ant stings

## What's New This Month

The IPM Institute produced a new pest press on IPM tactics for managing Canada geese on school grounds. Strategies include prohibiting feeding, habitat modification, harassment techniques, nest and egg destruction, and trapping and relocation.

## Upcoming Events

**June 12, 2013**
California DPR School IPM Training Workshop
Templeton, CA
More Information

**August 8, 2013**
California DPR School IPM Training Workshop
Eureka, CA
More Information

**September 18-19, 2013**
Texas School IPM Coordinator Training
Tyler, TX
More Information

**October 15-16, 2013**
Texas School IPM Coordinator Training
Katy, TX
More Information

## Quick Links

*School IPM 2015 Homepage*

*Get Involved!*

*About School IPM 2015*

*Make a Contribution!*

are simply uncomfortable. About one percent of the population is hypersensitive to insect venom. The elderly, young children and those with compromised immune systems are also more vulnerable to fire ant venom.

Most stings result from inadvertently stepping on a fire ant nest, or mound. The ants respond to pheromones released by the first attacking ant and rush to protect the nest. Dr. Bastiaan Drees, professor and extension entomologist for Texas A&M AgriLife Extension, comments that in addition to being a danger to those sensitive to stings, "Fire ant mound-building can damage turf, and fire ants compete against other ants that provide beneficial services," including removing and decomposing plants and other debris.

Fire ants are resilient, surviving both flooding and drought. Fire ant nests can extend underground to the water table, providing access to water during drought. If their nests flood, the ants form a large ball with their bodies surrounding the queen and float until they come to rest on solid ground.

Schools in areas where fire ants are present should educate staff and students about the risks of fire ant stings, and how to recognize and avoid fire ants and mounds.

An IPM program for fire ants can include a combination of monitoring, and cultural, biological and chemical methods. Drees suggests monitoring for ant populations by placing slices of hot dog throughout potentially affected areas. Check the hot dogs for ants after 45-60 minutes of exposure in the early morning.

Correct timing of control measures impacts effectiveness. "Insect growth regulators (IGRs) applied in the spring or early summer will achieve maximum control in about two months as opposed to three to six months for applications made in the fall," says Drees. IGRs do not kill ants, but rather keep worker ant populations from developing for several months after treatment.

Other management options include broadcast applications, individual mound treatments or a combination of these. Granular insecticide baits are particularly useful, given that nests may be located completely underground, beneath cement slabs or on adjacent property, and thus not accessible to contact insecticides. Drees suggests setting a threshold before applying a broadcast bait, such as 20 mounds per acre. Treat mounds individually if there are fewer than your threshold. School grounds used by children may need a lower threshold to reduce risks of stings. Map out the campus and apply more resources to areas with higher traffic.

Broadcast treatments can provide 80-90% control. Use a handheld seeder or vehicle-mounted applicator to spread the rate indicated on the product label, usually 1-1.5 pounds of bait per acre. "Avoid applicators that grind up the bait which can result in over-application, or cause bait to cake up and plug the flow out of the hopper," comments Drees. Follow up broadcast applications with individual mound treatments when necessary. Before choosing a product, make sure it is registered for the site on which it is to be used.

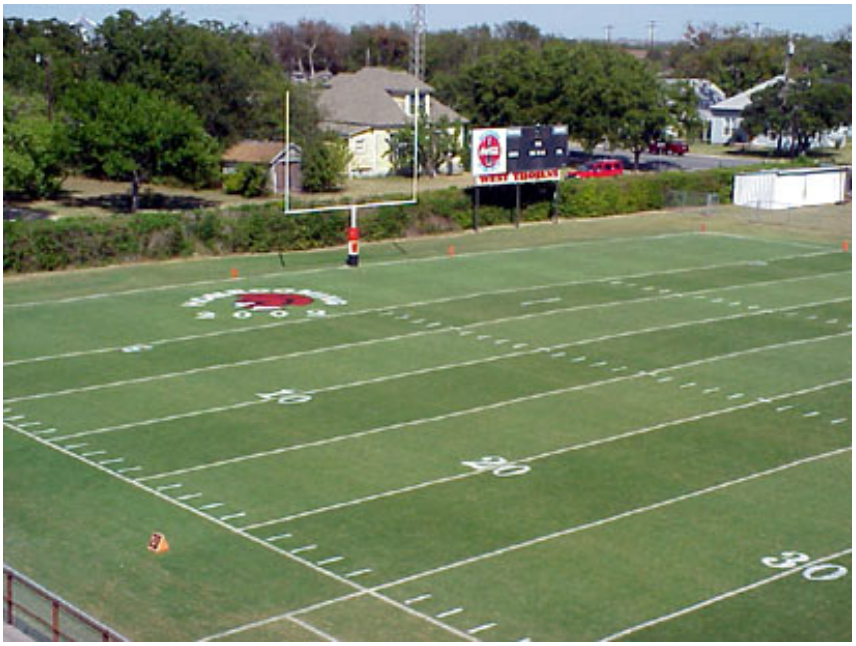
Drees recommends a community-wide management program if possible. Schools should try to work with neighboring property owners to reduce fire ant migration from properties that have no management programs in place.

Fire ants typically nest outdoors, so plan on managing the exterior source of ants when they become a problem indoors. Simply removing ants when found indoors, or baiting indoors, is not likely to resolve the problem. Manage the ant nests outdoors, and of course eliminate points of entry when possible.

For more information on fire ants, see the eXtension fire ant website, Texas Imported Fire Ant Research and Management Project, and a recent webinar hosted by the Urban CoP eXtension.

## Southern Region Turf Management

By: Jodi Schmitz and George Bernardon, regional vice president of grounds management at SSC Service Solutions



West Independent School District in West, Texas. Photo courtesy of Texas A&M AgriLife Extension.

Soil types, climate and turfgrass varieties in the southern region require different turf management tactics than in colder areas. Schools should devote the majority of their resources to the most heavily used turfgrass areas and those that require high-quality grass such as competitive athletic fields. Note that some recommendations in this article are based on native or hybrid Bermuda grass--management may be different for other grass varieties.

**Fertilizer and soil health**

Soil is the lifeline of the plant. Soil tests can diagnose plant issues in the same way blood tests can help identify what is ailing us. Test soil to identify pH and nutrient composition, which will identify any additional nutrients or amendments required to optimize turf plant health. Bermuda grass should have a pH from 6.0-7.0, with 6.3 being perfect. If the pH of the soil is low, add lime. Having the correct pH allows for the maximum uptake of vital nutrients such as nitrogen, phosphorus, potassium and micronutrients. Slower-releasing organic fertilizers may be more appropriate for well-established turfgrass. Synthetic fertilizers can make nutrients available more quickly to meet immediate needs. Apply fertilizer in the spring and lightly if at all in the summer and fall. Instead of using sand as a topdress, consider a clean compost, applying no more

than ¼ inch per application per year. Always use core aeration in conjunction with topdressing to improve integration of the compost into the soil.

Competitive athletic fields and other turf areas that need to look pristine can be overseeded in the fall using cool season turfgrass varieties. Overseeding, or applying grass seed into existing turf, is not a long-term solution for bare spots in the turf in this case. These grasses will grow during the fall and winter and die once the weather gets warmer. Make sure to choose varieties recommended by your local extension office and overseed at the recommended time of year. All other turfgrass areas should be watered well and fertilized according to soil test results to encourage existing turfgrass to spread vegetatively and fill in bare spots.

**Mowing**

Mowing practices are important for the health of the turf. Raise mowing height to two inches, which can reduce the frequency of mowing, shade out some weeds, and make the grass height appear more consistent on ungraded surfaces. Try not to remove more than 50% of the total leaf surface with each cut. Change mowing patterns so grass isn't being cut from the same direction each time, which can cause the grass to lean in the direction you mow. Reduce mowing speed to no more than four miles per hour to reduce ripping. Use a blower or make subsequent passes with the mower to disperse any heavy accumulations of clippings.

Keep mower blades sharp to avoid ripping rather than cutting grass blades. Check tire air pressure regularly. More than three pounds difference between the tires will result in an uneven cut, which is both a cosmetic issue and can stress the grass on the low side of the mower. Check regularly for leaks of fuel or hydraulic oil.

**Irrigation**

If possible, irrigate the afternoon after mowing or the next morning. Irrigating during the early evening hours is one of the worst times to irrigate as this results in the turf remaining moist for an extended period of time, potentially increasing disease activity. In southern regions, one inch of water each week is usually sufficient unless the area is in an extended drought. Grass can be slightly stressed for water, which will cause it to grow deeper roots in search of water. Some soil types may require pulse irrigation, which breaks the irrigation into two cycles, allowing time for the first cycle of water to move into the soil profile and reducing runoff.

**Aeration**

Aeration is used to reduce soil compaction, allowing for better drainage and healthier root systems. Aerate during the active growing season, typically in the spring, so that grass can recover quickly and take advantage of the loosened soil. A minimum of 12-15% of the soil surface should be disturbed, or about 18-24 holes per square foot. Use a vertical mow or shatter-tine aerator with slicing tines or knives, which encourages dense turf. For more information on aeration, see "Pulling the plug on turf problems" in *Grounds Maintenance* magazine.

**Weed management**

The goal of weed removal is to allow grass to fill in the areas where weeds previously grew, and block future weeds from growing. Before beginning a weed management program, identify weed types and map out populations. Weed identification is critical to ensure that the correct approach and control products are selected. Avoid broadcast applications if spot treatments limited to affected areas are feasible. Always follow label instructions for any herbicide applications. Carefully evaluate your

results to determine if follow-up may be needed.

## Mole Management Strategies

Moles can wreak havoc on lawns and athletic fields by digging surface-feeding burrows and building molehills. While most mole tunnels are deep underground, this surface activity results in an uneven turf surface and air pockets, which can kill turf.

Moles are small, sturdy mammals with grayish-brown, velvety fur that often has a silvery sheen. Their eyes have fused eyelids, which only allow them to distinguish light from dark. Living primarily underground, they use their snouts to feel and smell their environment and find food, which primarily consists of earthworms and other small invertebrates found in soil.

Moles are active throughout the year, except during extreme cold, heat or drought. They may become more active after rain or irrigation because tunnels are easier to dig in softer soil. Generally only one mole will inhabit a tunnel, except during breeding season.

Trapping can be effective for moles. Mole traps include scissor and harpoon traps; check local regulations to identify any restrictions. Place traps in existing tunnels, straddling the tunnel or hanging above it. Like many mammals, moles become suspicious when new objects are introduced into their environment. Set a plug of soil in the tunnel under the trap. Moles will burrow through the soil, treating it like a soil cave-in.

Before setting a trap, determine if the tunnel is still being used. Many surface burrows are used temporarily and then abandoned. Tamp down short sections of several surface runways. Make a note of the location of tamped down sections and check regularly. Sections that are raised again by the mole are likely in use. Deeper tunnels can be located by probing next to a fresh mound with a pointed stick or metal rod. You will feel the lack of resistance when you have struck a burrow. Keep in mind that mole traps will not be effective on rodents or other garden pests.

Research demonstrating effectiveness of repellants is sparse, particularly for large areas and athletic fields. Mole wheels, vibrating windmills and whistling bottles are available to discourage moles in gardens. There are also electrical devices that vibrate soil or produce sound. Mole repellents containing castor oil have been shown to be effective for eastern moles but little research has been done on other species. Monitor carefully when using repellents because they may simply drive moles to other nearby turf areas.

Grain-based toxic baits are rarely effective because moles typically eat earthworms and insects. Worm-shaped baits and gels that are squeezed directly into the tunnel are available.

For small areas such as gardens, exclusionary fencing is a temporary solution, although moles may eventually find a way in. Bury hardware cloth or ¼-inch wire mesh in a trench at least two feet deep with a six-inch lip of mesh bent at a 90 degree angle away from the planting. Fencing should also protrude about six inches above the surface. Attempting to flood tunnels to drown moles or force them to the surface is generally ineffective. The large size of mole tunnel systems makes them very difficult to completely flood.

For more information on mole management, see the Missouri University IPM Program and the University of California IPM Online.