

School & Home Integrated Pest Management (IPM) Newsletter – August 2014



COLLEGE OF
AGRICULTURE
& LIFE SCIENCES
COOPERATIVE EXTENSION

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Healthy Turf for a Healthy Environment

A healthy lawn is a thing of beauty and an asset to its surrounding environment. Lawn, turf, green, pitch - all referring to areas of managed turfgrass, are important components of landscapes in community environments.

They serve a variety of functions that include:

- Controlling soil erosion
- Absorbing dust, soot and certain airborne pollutants
- Providing cushioning surfaces for outdoor sports
- Adding aesthetic value to the surroundings
- Providing habitats for beneficial organisms
- Reducing heat islands caused by buildings and asphalt
- Source of oxygen



More importantly, they serve as a connecting link between urban spaces and the natural environment. Often, turf and trees are the only plants in a heavily urbanized environment.

What can you do to maintain a healthy lawn, leading to a healthy environment?

Every person who owns a lawn, or works in an environment with turfgrass can have an impact on the environment. This includes homeowners, landscapers, property managers, pest management professionals, school grounds and maintenance personnel, and anyone who lives in a community environment. IPM strategies can be used to create conditions for grass to grow and thrive, and resist damage from insect pests, diseases and weeds while enhancing the turf's beauty and contribute to its environmental benefits.



Golf course tee with Camelback Mountain in back

Developing a healthy lawn care program

- Develop healthy soil: Good soil is the foundation of a healthy lawn. To grow well, your lawn needs soil with good texture, tilth and some key nutrients. Lawns generally grow best in loamy textured soils that have a mix of clay, silt and sand. Heavy clay soils may have slow water infiltration and/or adequate drainage. These conditions can inhibit deep grass roots development.

Whatever your soil type, you can improve it and maintain its texture by adding manure, compost, not collecting grass clippings when mowing, or mulching with other organic matter. Organic matter helps the soil to “breathe” in heavy, clayey soil, while it helps sandy soil retain water and nutrients. If your soil is tightly packed down by years of use or clay content, grass roots will find it hard to penetrate and grow deeply. Most lawns should be aerified at least once during the peak growing season. This is done by pulling out plugs of soil so that air spaces are created, and water and nutrients can travel down to the grass roots.



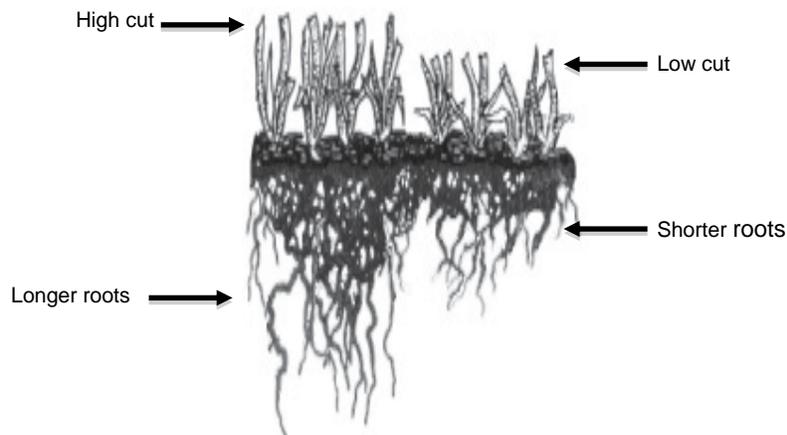
Have your soil tested periodically for its nutrient status. Most lawns need to be fertilized during the growing seasons. Nitrogen (N), phosphorus (P) and potassium (K) are the three primary elements in most lawn fertilizers. Inexpensive urea or ammonium sulfate provide N for the turf greening up rapidly. Most P applications help with roots establishing at seeding or sodding time. Most Arizona soils contain adequate amounts of K. It is important to fertilize soil based on test results, because both over- and under-fertilizing can harm your lawn.

- Choose a grass type that suits your climate and needs: Grasses vary in the type of climate they prefer, the amount of water and nutrients they need, their resistance to pests and diseases, their tolerance for shade, the degree of wear they can withstand and what times of the year they actually best tolerate surface and sub-surface cultivation.

These differences are the basis of selecting either a warm versus cool season grass for turf. Cool season grasses for turfs include the major species of Kentucky bluegrass, perennial ryegrass, tall fescue and to a limited extent, fine fescues. These grasses grow best where summer temperatures are 90-95°F for 5 to 6 weeks, or less. Warm season grasses include the major use of bermudagrass, and to a much lesser extent, St. Augustinegrass and zoysiagrass. These grasses do best in climates that have long-hot summers, and milder winters. There are drastic differences between these grasses on amounts and timings of fertilization, and if and when they need a dethatching cultivation. Before planting a new lawn, do some research to find the best grass type for your climate and its requirements. Seek advice and help from experts who can help you decide. Grass that is well adapted to your area will grow better and resist pests and diseases better. In the low desert of Arizona, bermudagrass varieties provide the best turfgrass surfaces.

- Mow high, often and with sharp blades: Letting your lawn grow a little taller (mowing high) will produce stronger, healthier grass with fewer pest problems. Taller grass has more leaf surface to take in sunlight. This enables it to grow more densely and develop a deeper root

system, which in turn helps the grass survive drought, tolerate insect damage, and fend off diseases. Taller grass also shades the soil surface keeping it cooler, helping it retain moisture, and making it difficult for weeds to germinate and grow.



Different mowing heights and associated root development

The ideal mowing height varies with the type of grass. Where cool season grasses are used, lawns are usually healthiest when kept between 2.5 and 3.5 inches. At low elevations where bermudagrass is used, be aware that low growing dense cultivars are best adapted to mow heights of 1.5 inches or less, and need to be mowed with reel-type mower where the blade is exposed up front (*on left*). Mowing low



Reel-type mower (left), and rotary mower (right)

growing bermudagrass with rotary mower at heights of 1.5 inches or taller produces a weak lawn, since the horizontal shoots turn “vertical”, and the leaves become clustered at the tip of the stem. As a result, all the leaves can be removed when mowing off as little as 0.5 inch of the lawn. Grasses mowed at 1.5 inches or higher use a rotary mower (*on right*). Check with your County Cooperative Extension office for proper mowing heights for specific bermudagrass cultivars.

A good rule of thumb is to mow often enough that you never cut more than one-third of the height of the grass blades. Use a ruler to determine mowing height and to adjust your mower. Mowing more than half of the existing results in scalping the lawn. If you see this condition with the first mow pass, stop and raise the mowing height accordingly.

Keeping your mower blades clean and sharp is important to prevent tearing and injuring the grass, and also saves you time and energy. You can also save time and help your lawn and the environment, by leaving short grass clippings on the lawn where they will be naturally recycled, rather than gathering them in bags and taking them to the dumpster.

- Water deeply, but not too often: Every lawn and grass type has different watering needs, depending on local rainfall, soil type and general health. Healthy, well-established lawns do not require watering daily, even in very dry regions. A good rule of thumb is to water only when the lawn begins to wilt from soil dryness. When surface leaves initially start to “roll up” and become needle-like, and footprints last for more than five minutes, it is time for irrigation.

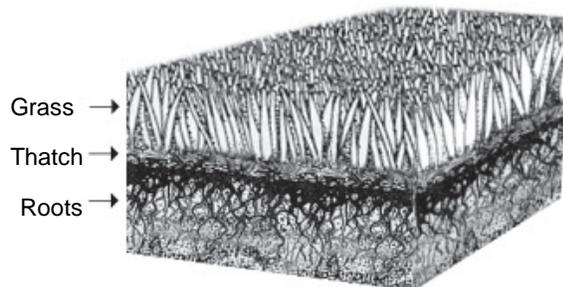
It is best to water only when the lawn really needs it, and when you water, water slowly and deeply. Watering properly helps your lawn grow deep roots that make it stronger and less vulnerable to drought. Most lawns are watered too often but with too little water each time. This trains the grass roots to stay near the surface, making them less able to find moisture during dry spells.



Try to water your lawn in a way that imitates a slow, soaking rain, by using trickle-irrigation, soaker hoses or other water conserving methods. It is best to water in the early morning, especially during hot summer months, to reduce evaporation. Apply about an inch of water, enough to soak 6-8 inches into the soil. Then let the lawn dry out thoroughly before watering it again. When irrigating, make sure your sprinklers are working properly. The sprinkler stream should reach the top of other sprinkler that sprays the same turf area.



- Correct thatch build-up: “Thatch” refers to the layer of dead plant material between grass blades and the soil. Grasses that produce underground rhizome shoots, or above ground runners form a thatch layer. Kentucky bluegrass, bermudagrass, and zoysiagrasses are thatch producers. Some varieties tend to be thicker than others. Ryegrass and tall fescues are bunchgrasses, and are very slow thatch producers since they have no rhizomes or stolons. Over-application of fertilizers can create a thick thatch. If thatch gets too thick (> 0.5 inch), it prevents water and nutrients from reaching the soil and grass roots. This is why the thatch layer has to be broken-up by power raking (dethatching) and aerifying periodically.



Cross-section of a lawn

In a healthy lawn, microorganisms, insects, earthworms, and other soil dwelling organisms help to maintain the thatch layer at an optimum thickness by decomposing it and releasing nutrients back into the soil. If the thatch layer in your lawn is too thick, you can reduce it by power-raking the lawn. Machines are also available for this purpose that slice through the thatch layer and break it up.

- Set realistic goals for your lawn: Your home or school lawn does not need appear to be as perfect as a golf course putting green. This realization will save you time, energy, resources and free you from a lot of stress. Do not strive to have evenly growing grass over every inch of your lawn, there are some areas in which the grass will not grow well, e.g., the base of a tree or against a building. Choose other suitable options for such areas, such as planting shade-loving ornamentals around tree bases, or using wood chips or gravel to cover bare areas.

Accept that every healthy lawn has a small amount of weeds and insect pests, but it also has beneficial organisms that help keep the pests under control. Mow weeds or remove them to prevent the flowering and seeding that will re-infest the lawn in the future.

In areas that receive 25 or more inches of rainfall a year, you can reduce the amount of lawn in your yard by re-naturalizing certain areas (i.e., allowing the lawn to grow as it naturally would). Reduce the frequency of mowing. Apply less fertilizers and pesticides. Spread mulch if you want to reduce the grass within the naturalizing area. With time (2-5 years), this will allow native plants to take root, re-establish their presence through succession, and help restore natural habitat. This also means you'll use less fertilizer and pesticides and you won't have to mow the re-naturalized area. Re-naturalized areas help to absorb rainwater better than lawns and can lead to less storm water runoff from your property.



Mulch around tree avoids constant turf edging, University of Arizona



Turf area adjacent to natural area on golf tee in Flagstaff, AZ

Pest management in your lawn

- A healthy vigorous turf is the first line of defense against most lawn insect pests, weeds, and diseases. If pests and weeds occur, it means the growing conditions are better for the pests than your lawn.
- Correctly identify pests (weeds, pathogens, above or below ground insects, mites or vertebrates).
- Implement cultural management practices to reduce or minimize the problem situation.
- Avoid or reduce stresses on turfgrass by:
 - Improving mowing practices (raise height of cutting)
 - Improving irrigation efficiency (adjust sprinkler heads and run times)
 - Improving fertilizer applications
 - Reducing soil compaction
- Dethatch and aerate the turf to improve turf quality.
- Irrigate in the early morning to limit evaporation and reduce the period of leaf wetness, this also limits diseases and pests.
- Avoid planting ornamentals that attract pests near turf.

- Use chemical treatments as the last resort. Hoe out small populations of weeds, or spot treat for weeds, pests or diseases using the safest products available.

Be kind to the Environment

- Keep your lawn healthy and beautiful.
- Mow frequently and regularly to recycle grass clippings.
- Apply water uniformly and regularly based on actual use by the plant (see Arizona Meteorological Network [AZMET] <http://aq.arizona.edu/azmet/>).
- Use only selective pesticides that will control the target pest or weed(s) only.
- Use a push reel mower when mowing at 1.5 inches or less, or an electric rotary mower to mow taller heights. It's good for the environment and gives you exercise!

See more information at <http://turf.arizona.edu>.

University of Arizona Extension Hires a New Assistant in Extension



Dr. Michael Wierda joined the Arizona Pest Management Center (APMC) in July of 2014 as a new Assistant in Extension, Pesticide Safety Education Program (PSEP). He will be working with the PSEP-IMI (Improvement and Modernization Initiative) Leadership Team, an interdisciplinary team of extension and research faculty from across the College of Agriculture and Life Sciences (CALs) and State Lead Agencies to develop and a Stakeholders Advisory Committee to develop an active, productive, informative, and sustainable PSEP.

Mike earned his Ph.D in Environmental Toxicology from Clemson University (CU) in Clemson, South Carolina. Prior to joining APMC, he was working as a postdoctoral fellow at the University of Arizona testing the suitability of previously developed microsatellite markers in establishing baseline genetic data of AZ Bald Eagles and teaching Introductory Biology at Pima Community College as Adjunct Faculty. Mike

is enthusiastic about educating people with varied backgrounds and perspectives about pesticide safety and hopes to put his prior experience to good use in this new position.

IPM and Health Inspections Video



Northwest Center for Alternatives to Pesticides (NCAP) created an online training video: "Integrated Pest Management and Health Inspections". NCAP has created this Integrated Pest Management (IPM) inspection video for environmental health specialists to promote sanitation and exclusion practices to reduce pests and therefore pesticides. The video showcases an on-site inspection to provide a look into how the principles of IPM overlap with key points of Environmental Health Inspections.

School districts across Oregon are doing important work and have had great success in reducing pesticide use. NCAP worked closely with schools and health specialists in Multnomah County to create the content for the training video. Health inspectors, already performing on sight checks for schools, can now use their knowledge of IPM to encourage these techniques as a way to avoid pesticides. Funding for the video was provided in part by the Western IPM Center. The video may be found online by selecting the video "Integrated Pest Management and Health Inspections" on the NCAP Youtube channel at <https://www.youtube.com/user/NCAPVids>. Or, click on the YouTube icon on the NCAP website at www.pesticide.org

Along with the video, NCAP has an online survey to provide feedback on content and training needs. The survey will be used to improve future videos and determine future training needs for IPM best practices. Please participate in the study by following the below link, the link is also available on the comment section of the video. <https://www.surveymonkey.com/s/GRF2B6W>

Kim Leval, Executive Director of NCAP: "We are pleased to offer this resource aimed at better protecting the health of children by finding healthier ways to prevent and reduce pest problems without the use of pesticides. It is a win-win!"

For more information on alternatives to pesticides and other IPM practices, feel free to contact Megan Dunn at mdunn@pesticide.org.

Upcoming Webinars and Events

Attend Free Sessions of the [Green Strides Webinar Series](#). View archived webinars [here](#).

The [Green Strides Webinar Series](#) provides school communities the tools to reduce their schools' environmental impact and costs; improve health and wellness; and teach effective environmental literacy, including STEM, green careers, and civic engagement.

August 20, 2014, 2:00-3:30 p.m. Eastern / 11:00-12:30 p.m. Arizona: Webinar [School Community Mosquito Management via IPM](#)

August 28, 2014. Thursday, 9:00-12:00 p.m. Arizona: Annual Maricopa County Short Course – “[Dynamics of Weather and Climate Forecasting and the Tools for Turf and Crop Management](#)”. The University of Arizona Maricopa County Cooperative Extension office, 4341 E. Broadway Rd. Phoenix, AZ 85040.

The 20th Annual Maricopa County Short Course will feature “Dynamics of Weather and Climate Forecasting and the Tools for Turf and Crop Management”. Thursday, August 28th from 9 am to noon at the UA Maricopa County Cooperative Extension in Phoenix. Mike Crimmins, UA Extension Climate Specialist, and Paul Brown, UA Extension Biometeorologist, will present about the basics of meteorology, updates on our current monsoon and El Niño and La Niña, and applications for frost management and irrigation management.

Sign up now for the Short Course by going to: <http://turf.arizona.edu>.

For more information about the EPA Schools program, visit:
<http://www.epa.gov/schools/>

For more information about the Community IPM, visit:
<http://www.extension.org/pages/23359/urban-integrated-pest-management-community-page>



For more information about School IPM in Arizona, visit:
<http://cals.arizona.edu/apmc/westernschoolIPM.html>

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