LOUISIANA TURFGRASS ASSOCIATION

Turfgrass Insider — Summer Edition

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Importance of Aerification in Turf

Aeration

Mechanical aeration, simply, is the process of poking holes into the soil. This is done for two main reasons: to increase air exchange between the soil and the atmosphere and to relieve compaction. Aeration can increase nutrient uptake and water penetration into the soil as well. Aeration can be performed by a variety of different tools and can go by many different names, such as aeravation, coring, aerification, and vibra-coring. This information will help you sort through the various options and decide what the best method is for your turf.

Compacted Soil in Turf

Just like turf's leaves, its roots also need air to survive. Over time, soils naturally become more compacted and soil compaction can happen more quickly in areas with equipmant and foot traffic. This compaction reduces the pore space between soil particles, making it more difficult for roots to survive. Turf grown in compacted soil is low in vigor, has poor recovery, and can have weeds present that thrive in compacted soils. Examples of these "indicator" weeds are bluegrass, chickweed, goosegrass, mustard, dandelion, nettle, and plantain.

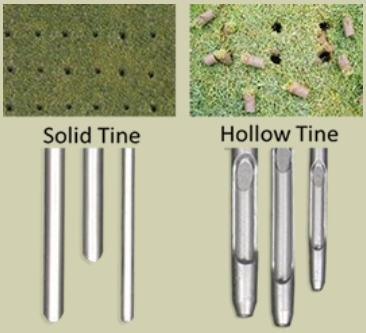
How to Properly Aerate

Aeration helps relieve compaction and increase air exchange, so it is important to aerate deep into the root zone, usually to a depth of 4 to 6 inches. Since deep holes will be created, the operator should be careful to avoid any in-ground hazards, such as irrigation components and tree roots. The frequency of aeration required will depend on the accrual of compaction. Home lawns may only need aeration every couple of years, where heavily used sports turf fields may require several aerations per year. Heavy clay soils usually require more frequent aeration. Aeration should be done uniformly across a turf area. Aeration should be done to healthy turf under fairly dry conditions. This may seem odd since aeration can be used as a rescue method for unhealthy turf, but the idea is to use aeration as a preventative measure.

Solid Tine or Hollow Tine

Solid or hollow tine refers to the mechanical component that is being forced into the soil to perform aeration--they are usually ¼" to $^5/_8$" in diameter. As the names imply, a solid tine is solid, and a hollow tine is hollow. Think of a solid tine like a nail--if you drive a nail into a piece of wood, and remove the nail, a hole is left in the wood. With hollow tine, think of a hole saw (those cup-shaped drill bits for making big holes). You drill through a piece of wood and you're left with a hole in the wood *and* a core from drilling. This is the main difference between solid and hollow tine, with a solid tine one is simply poking holes in the ground, whereas with hollow tine, a "plug" or "core" is removed from the soil. There are pros and cons to each type. Some argue that solid tine aeration is more temporary, whereas others would argue hollow tine aeration creates a mess. While turf managers generally agree hollow tine is superior, their methods of dealing with the cores vary. The cores can either be mulched up with a mower, or picked up and removed. Either way, like most things, turf managers consider environmental conditions and the customer's needs when choosing between solid or hollow tine.

Toro Procore



Air 2 G 2

Air injection

Air injection aeration is highly successful for aerifying soils, especially with frequent use. The A2 G2 has three probes to laterally inject pressurized air up to 12 inches beneath the surface of the soil to fracture the compacted layers that form as a result of foot traffic, mechanical traffic etc. Injected air blasts loosen up compacted soil immediately, but without any disruption to the surface of the turf or to the roots below.

Vibrating or Non-Vibrating (Rigid)

Some aeration tools come with a vibrating option. The tines will vibrate quickly when entering the soil. In theory this helps shatter compacted clay soils. For best results, the vibrating option should be used on fairly dry soils. With sand based fields, the vibrating option yields minimal results.

Post-Aeration Options

Some turf managers take advantage of freshly made holes in their fields. This is a good time to fertilize or add a layer of sand (topdressing). Topdressing after aeration is useful in heavy clay soils. By filling the holes with sand, the soil is being amended creating soil with larger pore space. Golf course greens and tee boxes are often topdressed after aeration.

Aeration Tools

There are aeration tools on the market for virtually any situation, ranging from strap-on shoe spikes to highly technical machines that can inject air or other materials into your soil. There are walk behind units, tractor mount units, pull-behind and ride-on units. Aeration tools range in width, tine type, tine spacing, vibrating or rigid styles, rolling or vertical punching styles, and so on. To decide what tool is best for your situation, consider your turf type, soil type, compaction accrual, turf planting size, and budget. Check with turf equipment sales representatives, turf managers, turf maintenance contractors, and state extension agents for the right tool, and frequency for your needs.

Myles Thibodeaux—Vice President, LTA

Virginia Buttonweed

Virginia buttonweed (*Diodia virginiana*) is one of the worst summer weeds infesting Louisiana turfgrass. The spread of this weed has increased tremendously over the past few years. Due to the summer flooding and tropical sod webworm damage last year and our mild winter, the weed is expected to be even worse this summer and fall. Buttonweed thrives in moist to wet soils and is highly drought tolerant as well. The weed has a prostrate growing habit and forms dense mats that smother out the lawn.

Unfortunately, you can't mow Virginia buttonweed out of the lawn. The weed will set flowers, drop seed, and reproduce no matter how short you mow the lawn. Continue to mow the lawn at the appropriate height for your lawn species. An herbicide-based control program for Virginia buttonweed includes "trimec" type herbicides applied in late winter and early spring to the emerging perennial mother plant when temperatures are under 85 F.

Celsius, Fahrenheit, Avenue South, or metsulfuron (MSM/Mansion and others) are the go to herbicides for summer applications on the weed. Repeated applications of these herbicides suppressed buttonweed in LSU Ag Center research trials. Celsius and metsulfuron are safe for all southern turf except bahiagrass. Celsius can also damage carpetgrass. Severe buttonweed populations may have to be sprayed about every 30 to 45 days during the summer months, so stay vigilant! It's not unusual to spray buttonweed deep into November if we stay warm. Expect some lawn yellowing with these herbicides. Always be sure to read and follow label directions for all pesticides.

ALERT! THESE 3 INSECT PESTS ARE COMMON DURING SUMMER

We had a small outbreak of chinch bugs already early this summer. Sod webworms and armyworms will be hitting lawns soon. Here is some quick information to help you identify and control these destructive insects

St, Augustinegrass — Tropical Sod Webworm

Notched leaves indicates sod webworm damage on St. Aug

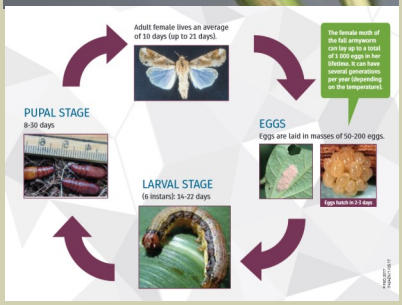
Tropical webworm larvae with green excrement

Sod Webworm Keys

- Damage may start near flowerbeds
- Look for notched leaves & green excrement pellets
- Webworms feed mainly at night and are lethargic compared to armyworms
- St. Aug and carpetgrass are favorites
- 3 to 4 generations per growing season

Insecticides for webworms and armyworms	Common Trade Name
bifenthrin	Talstar, Wisdom, Cross Check etc.
carbaryl	Sevin, Carbaryl etc.
chlorantraniliprole	Acelepryn
dinotefuran	Zylam (only sod webworm listed on label)
spinosad	Conserve
trichlorfon	Dylox

Bermudagrass —Watch for Armyworm Damage



Armyworm Keys

- Moth lays turf egg clusters on turf leaves or possibly shiny objects like goal posts or flags
- Eggs can hatch in 2 days
- Larvae may feed for 2 to 3 weeks
- Chewing mouth parts devour leaves leaving grass without foliage
- Larvae burrow into the soil and pupate transforming into the adult moth
- Watch for birds feeding

St, Augustinegrass —Hot/Dry Weather— Ideal for Chinch bugs

Chinch bug infesting St. Augustinegrass

Chinch Bugs Kill St. Augustinegrass

- Damage often starts near sidewalks

⇒Increased activity and damage during hot dry weather

- Chinch bugs can kill St. Augustinegrass by injecting toxic saliva—looks like area was sprayed with glyphosate
- Up to 4 generations per growing season

Large dead areas appear near concrete areas and eventually throughout the lawn

Active ingredient	Trade names
lambda-cyhalothrin	Scimitar and others
permethrin	Permethrin and others
bifenthrin	Talstar, Wisdom, Cross Check
carbaryl	Sevin and others
tau-fluvalinate	Mavrik
clothianidin	Arena
chlorantraniliprole	Acelepryn

Adult chinch bug

Should You Be Using Plant Growth Regulators

Plant growth regulators (PGR) are tools that have been used for numerous years on turfgrasses to reduce clippings; especially during these past two years of high rainfall when many turfgrass managers are unable to routinely mow areas due to soil saturation. As a result, many crews are either forced to mow which can lead to muddy tracks and chances of increased soil compaction or wait until the soil is drier but are left mowing overgrown areas. In golf course and athletic fields this can be extremely difficult given constant use and because it provides less than ideal conditions for play.
So would PGRs be helpful?

The short answer is yes. Plant growth regulators such as trinexapac-ethyl and flurprimidol are gibberellin inhibitors that reduce cell elongation that in turn reduces vertical turfgrass growth. Meaning the turfgrass will remain shorter for longer periods than left untreated. However, the keys to using these products are knowing the benefits and drawbacks of each chemical.

Trinexapac-ethyl is applied foliarly (Do not water-in) and has been shown to reduce growth 3 to 4 weeks. As the temperatures increases during the growing season, the frequency of application will also need to be increased. Trinexapac-ethyl generally does not burn the grass but should not be applied in the heat of the day to reduce any potential leaf burn. Flurprimidol is root absorbed by the turfgrass. Therefore, you will need to irrigate this product into the soil for it to work. Flurprimidol provides a slightly longer clipping suppression period of 4 to 6 weeks. Flurprimidol generally does not lead to leaf burn but again to reduce any chance do not apply in the heat of the day.

In addition to reducing clippings, PGR also generally lead to darker greener turfgrasses due to concentration of chlorophyll in more compact leaves; increases sward density, and sometimes results in greater traffic tolerance. A few things to keep in mind when deciding to use PGRs 1) over application of nitrogen can reduce the effectiveness of PGRs; 2) application above the manufacturer's labeled rate does not extend the period of suppression; and 3) at the end of suppression period, if no further PGR application is applied, the turfgrass can actually lead to increased clipping growth (often called the rebound effect).

Plant growth regulators are a useful tool. But before you decide to use a PGR make sure you understand how to properly apply them so that PGR help during these rainy summers.

Jeff Beasley

Coastal - a new Herbicide from Sipcam

Coastal Herbicide is a new broad spectrum preemergence and postemergence herbicide from Sipcam Agro that's labeled for St. Augustinegrass, centipedegrass, bermudagrass, and zoysiagrass. Coastal is a pre-mix of prodiamine, simazine, and imazaquin, representing three distinct modes of action (group 3, group 5, and group 2, respectively). With all the herbicide resistance that we are seeing with weeds like annual bluegrass, it's important to make use of multiple modes action. Coastal is a highly effective preemergence herbicide on crabgrass, annual bluegrass and many broadleaf weeds while providing good postemergence activity on several weeds as well. It tank-mixes well with metsulfuron, which really increases the postemergence activity of the herbicide on broadleaf weeds. The window of application for the herbicide is fall through spring (Sept 15 to May 31). I've had the opportunity to evaluate this herbicide in field tests over the past few years. It's always been a top performer in research trials.