



Turfgrass IPM Advisory

Quarterly Turfgrass Pest Update, USU Turfgrass Extension Vol. 16(2), SPECIAL 2023

Turfgrass Integrated Pest Management

An integrative approach to the management of turfgrass insect pests, diseases and weeds is most effective. Prevention is the best strategy!

SPECIAL EDITION!

After 2 of the hottest, driest growing seasons on record, many parks, sports fields, and home lawns are entering the growing season in need of extra attention. This issue of the Advisory focuses on facilitating turfgrass recovery.

Letter from the Editor

Dear Turfgrass Enthusiasts,

We've survived the snowiest winter on record, but that winter followed two of the hottest, driest growing seasons on record. Can you say whiplash?!?!

Now that our turfgrasses are beginning to grow actively again, you may be noticing some weak, thin, and/or damaged turf areas that you'd like to improve and recover. Depending on the degree of damage or weakness, there are several management practices you may employ to improve the color, density, and (most importantly) functionality of your turfgrass areas.

One of these practices is aerification and USU Extension Associate Professor, Sheridan Hansen, has contributed an article on this practice addressing commonly associated questions, types of aeration, and additional resources.

Another important management practice for turfgrass recovery is fertilization. In terms of effort, fertilization provides the most "bang for your buck" toward turfgrass recovery and rejuvenation. Poor turf quality can be improved with proper fertilization and good turf quality can be maintained.



The last recovery practice addressed in this special issue is seeding/overseeding. Thin turfgrass areas, in particular, can benefit from overseeding. You could also plant different species or varieties of turfgrass to improve water use efficiency and reduce water requirements. In either case, the management practices will be similar and are described here.

Wishing you all a very happy summer!

Kelly Kopp, Editor, Turfgrass IPM Advisories
USU Extension Turfgrass Specialist

Aerification

Aerification, commonly referred to as aeration, is one of the best practices for improving turf health. The process removes plugs of soil from turf which then allows for air, water, nutrients, and organic matter to move into the rootzone, which can significantly reduce compaction. Solid-tine aerification, such as long-spiked shoes or forks, can worsen compaction because they move soil to the side of the tine and do not remove a core. .

The best time to aerate is when turf is actively growing. Cool season grasses, such as Kentucky bluegrass and the fescues, can be aerated in spring and late summer to early fall. Warm season species, such as zoysiagrass and buffalograss, should be aerated during the hot summer months. Cores can be raked up, but leaving them in place (mowing over them) will allow them to degrade and break down over time. This degradation contributes to organic matter that may be worked into the openings left by aerification and will help improve water percolation and reduce compaction. Additionally, raking a fine compost into the residual openings can significantly increase organic matter content if desired.

“Should I apply pre-emergent before or after aeration?” is a common question. Pre-emergent chemical applications reduce weed pressure in turf by forming a chemical barrier that kills germinating weed seeds. To ensure the chemical barrier remains intact, apply pre-emergent chemicals after aeration.

Aeration is fairly easy for do-it-yourselfers and many local companies rent core aerators for a minimal fee. Alternatively, you can hire someone to do the job for you. Check local want ads and online newspapers for local companies offering aeration services.

More in-depth information can be found in these resources: [Turfgrass Cultivation \(Aerification\)](#) and [USU Yard and Garden: Lawn Care](#).

Written and Contributed by Sheridan Hansen, M.S.
Extension Associate Professor of Horticulture
Davis County Extension



PC: [Pennington Seed](#)



PC: [Oasis Turf and Tree](#)

Fertilization

Appropriate turfgrass fertilization does more to improve turfgrass recovery and maintain good quality than any other turfgrass management practice. Having said that, overfertilization or careless application of fertilizers to hardscape surfaces such as sidewalks, driveways, or roads may result in turfgrass damage and, potentially, contamination of water by fertilizer runoff. Understanding turfgrass nutrient requirements will help you to be efficient with your fertilizer applications and precise in the timing of your applications.

Turfgrasses require at least 16 different nutrients for growth and development. Nine of these nutrients are needed in much larger quantities than the other 7. These are carbon, hydrogen, oxygen, nitrogen, phosphorus, potassium, calcium, magnesium, and sulfur—also known as macronutrients. Carbon, hydrogen, and oxygen are never deficient in turfgrasses because they are derived from carbon dioxide and water. Nitrogen, phosphorus, and potassium are considered primary turfgrass nutrients and are generally supplied to turf through periodic fertilizer applications. Micronutrients such as manganese, zinc, boron, copper, molybdenum, and chlorine are only required in very small amounts and are not typically supplemented through fertilization. One exception in our climate is iron, which may be supplemented to support turfgrass color and growth.

| Nutrient | Symbol | Function |
|------------|--------|---|
| Nitrogen | N | Component of nucleic acids, amino acids, proteins, chlorophyll, and coenzymes. Affects shoot-root growth, density, color, disease resistance, and stress tolerance. |
| Phosphorus | P | Component of nucleic acids, membranes, adenosine triphosphate, and several coenzymes. Affects rate of seedling development, maturation, and root growth. |
| Potassium | K | Activates enzymes used in protein, sugar, and starch synthesis. Important in maintaining turgor pressure in plants. Affects drought tolerance, cold hardiness, and disease resistance. |

Understanding the importance of various nutrients is the start of an effective turfgrass fertilization program. Selecting a fertilizer and determining how much is required to cover your area is the next step.

Turfgrass (and other) fertilizers may be broadly classified as either organic or inorganic and you may find detailed information on selecting and using both types in [Selecting and Using Organic Fertilizers](#) and [Selecting and Using Inorganic Fertilizers](#). This Excel based tool, [Calculating Fertilizer for Small Areas](#), can also help you determine the amount of fertilizer to apply.

In all cases, it is a good practice to start with [soil testing](#), although standard soil tests do not typically evaluate soil nitrogen. The amount of nitrogen required for your turfgrass will depend on the species, the soil conditions onsite, the maintenance level, and use. Recommended amounts for low maintenance turfgrass areas are 0-1 pound of N/1000 sq. ft., while intermediate maintenance areas require 2-3 pounds of N/1000 sq. ft., and high maintenance areas require 4-6 pounds of N/1000 sq. ft.

For recovery purposes this spring, apply 1 pound of N/1000 sq. ft. and return grass clippings as often as possible when mowing. Clippings contain a large quantity of nitrogen and recycling them back into the turfgrass/soil system returns that N and supports turfgrass growth and recovery.

Overseeding

Spring is not the ideal time for overseeding because of annual weed pressure. However, if your turfgrass area is thin, weak, and/or damaged after 2 very hot and dry growing seasons, you can help it to fill in and recover by following these steps:

1. Mow the area to 1-1.5 inches to reduce competition from established grass and remove clippings with a rake.
2. Apply a fertilizer in accordance with soil test recommendations. Keep in mind that phosphorus is the macronutrient that most affects seedling development, maturation, and root growth.
3. Aerate the area with multiple passes to help increase seed-soil contact, improve germination, and establishment.
4. Apply the seed with a broadcast spreader or drop seeder making at least 2 passes in opposing directions across the area for uniform coverage.
5. If possible, apply a light layer of compost over the area to help retain moisture around the new seed.
6. Water the newly seeded area 3-4 times daily (2-3 minutes at a time) to encourage seed germination.
7. Mow frequently to limit competition from the established turf. Keep mowing height at 1.5 inches for the first two mowings and then raise the height in 1/2 inch intervals at each mowing until you reach your final mowing height (3-4 inches).
8. Six weeks after germination, consider applying 0.75 lb N/1000 sq. ft. to the area to further encourage establishment.

Adapted from “Seeding a Turf Area in the Spring”
Zac Reicher and Clark Throssell



Image Credits: University of California Agriculture and Natural Resources Statewide Integrated Pest Management Program

[Northern Utah Turfgrass Management Calendar](#)

- Recommended scheduling of turfgrass management practices for northern Utah.

[Southeast Utah Turfgrass Management Calendar](#)

- Recommended scheduling of turfgrass management practices for southern Utah.

[Southwest Utah Turfgrass Management Calendar](#)

- Recommended scheduling of turfgrass management practices for southwest Utah.

[St. George, Area Utah Turfgrass Management Calendar](#)

- Recommended scheduling of turfgrass management practices for the St. George, UT area.

[Turfgrass Cultivation \(Aerification\)](#)

- Turfgrass aerification practices and the problems it solves.

[Selecting and Using Inorganic Fertilizers](#)

- A guide to selecting and using inorganic fertilizers with an emphasis on home landscapes.

[Selecting and Using Organic Fertilizers](#)

- A guide to selecting and using organic fertilizers with an emphasis on home landscapes.

[Calculating Fertilizer Rates for Small Areas](#)

- An Excel-based tool for calculating fertilizer rates for small garden and/or landscape areas.

[Turfgrass Cultivars for Utah](#)

- A guide to recommended turfgrass cultivars for use in Utah.

***Precautionary Statement:** All pesticides have benefits and risks, however, following the label instructions will minimize the risk and maximize the benefit. Pay attention to the directions for use and follow precautionary statements. Pesticide labels are considered legal documents containing instructions and limitations. Inconsistent use of the product or disregarding the label is a violation of both federal and state laws. The pesticide applicator is legally responsible for proper use.

Turfgrass IPM Advisory
is published quarterly by Utah State University Extension.

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