UT Extension
W238

TURFGRASS SCIENCE
at the University of Tennessee

Weed Control during the Seeded Establishment of Cool-Season Turfgrasses

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Introduction
The primary cool-season turfgrasses used across Tennessee are tall fescue (*Festuca arundinacea*), Kentucky bluegrass (*Poa pratensis*) and heat-tolerant Kentucky bluegrass (*P. pratensis x P. arachnifera*). Successful establishment of these grasses requires an investment of time, effort and funding. Considering that the failure to control weeds can compromise the short- and long-term success of any establishment project, implementing a proper weed-control strategy is essential.

When to Establish?
Cool-season grasses can be established from seed during the spring, summer and fall of the year; however, establishment during fall is recommended, as temperatures in fall favor cool-season turfgrass seed germination and growth. Additionally, weed and disease pressure tends to be lower during cool fall weather than other times of year, and irrigation requirements are reduced as well.

However, circumstances often require that cool-season turfgrasses be established during non-ideal spring and summer weather. For example, many home construction projects require a lawn to be seeded to pass final inspection. In these situations, steps can be taken to mitigate weed problems.

Ensuring a Successful Establishment
A dense, vigorous turf is less susceptible to weed encroachment than a sparse stand lacking vigor. Certain cultural practices can be implemented to ensure the development of a dense stand of cool-season turf from seed that will resist weed invasion.

These basic steps include:

1. Soil testing before planting to determine soil pH, phosphorus and potassium content.
2. Tilling and leveling the area to be seeded, addressing any potential drainage issues.
3. Uniformly applying fertilizer and lime according to soil test recommendations.
4. Finish grading the area to be seeded.
5. Selecting a high-quality turfgrass seed and applying it at recommended rates.
6. Rolling or lightly raking soil after seeding to ensure sufficient seed-to-soil contact.
7. Managing soil moisture to prevent seeds from drying out during germination.
8. Mowing once shoots develop multiple leaves and the canopy reaches a height greater than the desired height of cut.

Detailed information on the establishment of cool-season turfgrasses in Tennessee can be found at http://tennesseeturf.utk.edu

Control Perennial Weeds Prior to Establishment
Controlling existing vegetation (perennial weeds, etc.) is a critical step in the seeded establishment of any cool-season turfgrass. Apply a non-selective herbicide (e.g., Roundup Pro, or similar) at 1 qt/a (1 lb ai/a glyphosate) seven to 14 days before tilling soil. A second application may be required to control perennial weeds like bermudagrass (*Cynodon* spp.) or any other plants that recover from an initial non-selective herbicide application. Should a second application be required, allow at least seven days before tilling soil. Considering that there are a limited number of selective herbicides available for perennial weed control, these non-selective applications prior to tillage are critical.

Figure 1. Large Crabgrass

Figure 2. Smooth Crabgrass

Weed Management during Establishment

Weed management after seeding is another important component to successfully establishing a healthy stand of cool-season turfgrass. Annual grasses like crabgrass (*Digitaria* spp.) (Figures 1 and 2), goosegrass (*Eleusine indica*) (Figure 3) and foxtail (*Setaria* spp.) are some of the most common and troublesome weeds present during the spring and summer establishment of cool-season turfgrasses. Broadleaf weeds like carpetweed (*Mollugo verticillata*) (Figure 4) and prostrate spurge (*Euphorbia maculata*) (Figure 5) can be problematic as well.

Several herbicides exhibit excellent turf safety and weed-control efficacy during the seeded establishment of cool-season grasses, like tall fescue and Kentucky bluegrass. Herbicides recommended for grassy and broadleaf weed control during the seeded establishment are outlined below. Table 1 is a guide presenting strategies for the proper use of these herbicides during the spring and summer establishment of cool-season turfgrasses.

Herbicides for Grassy Weed Control during Seeded Establishment

Tupersan (active ingredient – *siduron*)

Apply 12 lb/A of Tupersan at seeding for preemergence control of crabgrass and goosegrass. This herbicide exhibits no activity against broadleaf weeds. Both granular and sprayable formulations are available. Most cool-season turfgrasses exhibit tolerance to seedling applications of Tupersan. The residual activity of this herbicide is low and multiple applications are required for extended control.

Figure 3. Goosegrass

Figure 4. Carpetweed

Figure 5. Prostate Surge

Table 1. Herbicides Guide for Spring and Summer Establishment of Cool-Season Turfgrass

Establishment Time	At Seeding	6 Weeks after Seeding (WAS)	12 WAS
Spring	Tupersan, Tenacity or Drive	Tenacity or Drive; Broadleaves as needed	Tenacity or Drive; Broadleaves as needed
Summer	Tupersan, Tenacity or Drive	Tenacity or Drive; Broadleaves as needed	Tenacity or Drive; Broadleaves as needed

Drive XLR8 (active ingredient – quinclorac)

Apply 64 fl oz/A of Drive XLR8 for postemergence control of crabgrass and selected broadleaf weeds [particularly white clover (*Trifolium repens*)] during the seeded establishment of tall fescue. This herbicide will not control goosegrass. If applications are needed during the first 28 days after seedling emergence (DAE), do not add a methylated seed oil (MSO) surfactant to the spray solution, as the addition of MSO will increase the potential for seedling injury. During Kentucky bluegrass, perennial ryegrass (*Lolium perenne*) and fine fescue (*Festuca* spp.) establishment, do not apply Drive XLR8 before 28 DAE.

Tenacity (active ingredient – mesotrione)

Apply 8 fl oz/a of Tenacity for pre- and postemergence control of crabgrass, goosegrass and certain broadleaf weeds during the seeded establishment of tall fescue and Kentucky bluegrass. Tenacity will not control white clover. A sequential, postemergence, application will be required for season-long crabgrass control in Tennessee. To improve efficacy, apply this herbicide with a non-ionic surfactant at 0.25% v/v. Susceptible weeds will turn white seven to 14 days after treatment with Tenacity, and eventually become brown and necrotic. Tenacity can be applied to an array of different cool-season turfgrass species during most stages of establishment; however, this herbicide is currently not labeled for use on home lawns as of spring 2010.

Herbicides for Broadleaf Weed Control during Seeded Establishment

Buctril (active ingredient – bromoxynil)

Apply 1-2 pt/A of Buctril two to four weeks after seedling emergence for control of many broadleaf weeds. This herbicide exhibits no grassy weed activity. Most cool-season turfgrasses exhibit good to excellent tolerance to Buctril.

Quicksilver (active ingredient –carfentrazone)

Apply 1-2 oz/A of Quicksilver no sooner than seven days after seedling emergence for broadleaf weed control during seeded establishment. Repeat applications will be necessary for effective control. Most cool-season turfgrasses exhibit tolerance to seedling applications of Quicksilver.

2,4-D Amine (active ingredient – 2,4-D)

Apply 1.5-2.0 pt/A of 2,4-D amine for control of many broadleaf weeds during seeded establishment. This herbicide should only be applied to seedling turf stands that have been mowed at least twice. Applications during warm weather (>90 F) should be avoided due to the potential for injury not only to the turf, but surrounding vegetation as well. Numerous products are available, with some containing additional active ingredients (e.g., 2,4-D + MCPP + dicamba) that offer a wider weed control spectrum.

Final Thoughts

The best time to establish a cool-season turfgrass is the fall; however, herbicides are available to control annual grasses and broadleaf weeds when establishing cool-season turfgrasses during spring or summer. A successful establishment during these non-ideal times can be achieved, but specialized efforts must be paid not only to weed management, but to disease, irrigation and fertility management as well.

Always refer to the product label for specific information on proper product use, tank-mix compatibility and turfgrass tolerance. For more information on turfgrass weed control, visit the University of Tennessee's turfgrass weed science Web site, http://tennesseeturfgrassweeds.org

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