

TURFGRASS TRENDS

WEED CONTROL IN SEEDLINGS

Season, Zone Dictate Weed Control in Seeded Tall Fescue and Bluegrass

By Scott McElroy, John Sorochan and Greg Breeden

Weed control during establishment of tall fescue and Kentucky bluegrass from seed is difficult for many reasons. First, many herbicides normally considered safe on fully established stands of both grasses can be detrimental to newly developing seedlings. Herbicides containing broadleaf herbicides, such as 2,4-D and dicamba, can injure developing seedlings so severely that if applied to seedlings under the wrong conditions, a delayed turfgrass development can occur.

Second, failure to control weeds from the onset can out-compete developing seedlings and devastate stand development. Weed competition is especially destructive in seeded conditions in spring. The high-density tillering and rapid spread of crabgrass (*Digitaria* spp.) can out compete and eventually kill tall fescue and Kentucky bluegrass seedlings. Weed competition during fall seeded establishment is less competitive. However, weeds like common chickweed, mouse-ear chickweed and speedwells (*Veronica* spp.) also can slow the developing turfgrass.

Through common agronomic practices and the timely use of herbicides, weeds can be successfully managed during establishment of tall fescue and Kentucky bluegrass from seed.

Cultural practices and competition

The competitive advantage in a developing turfgrass stand can be shifted easily from the developing seedlings to the developing weeds. First, get the seeding rate right.

Tall fescue should be seeded at about 6 pounds to 9 pounds per 1,000 square feet. Kentucky bluegrass should be seeded at 2 to 3 pounds per 1,000 square feet. Being frugal on seed can leave a thin, open turfgrass canopy that is easier for weeds to encroach. Overapplying seed can cause the turf to be thin and immature making the seedlings more susceptible to disease. Diseased seedlings can die quickly leaving empty areas for weed invasion.

Second, improper fertilization timing and rates can shift the competitive advantage from the turf to the weeds. Fertilization at seeding should focus mainly on phosphorus (P), potassium (K) and the micronutrients — in other words, fertilize at seeding according to soil test. Nitrogen fertility is not needed until two to four weeks after emergence because nitrogen can be lost to the environment in bare soil conditions. Nitrogen fertility then can be supplemented on a month-by-month basis depending on your climate zone and the time of year you are seeding. Northern climates can fertilize more through the summer months while those in the mid-South

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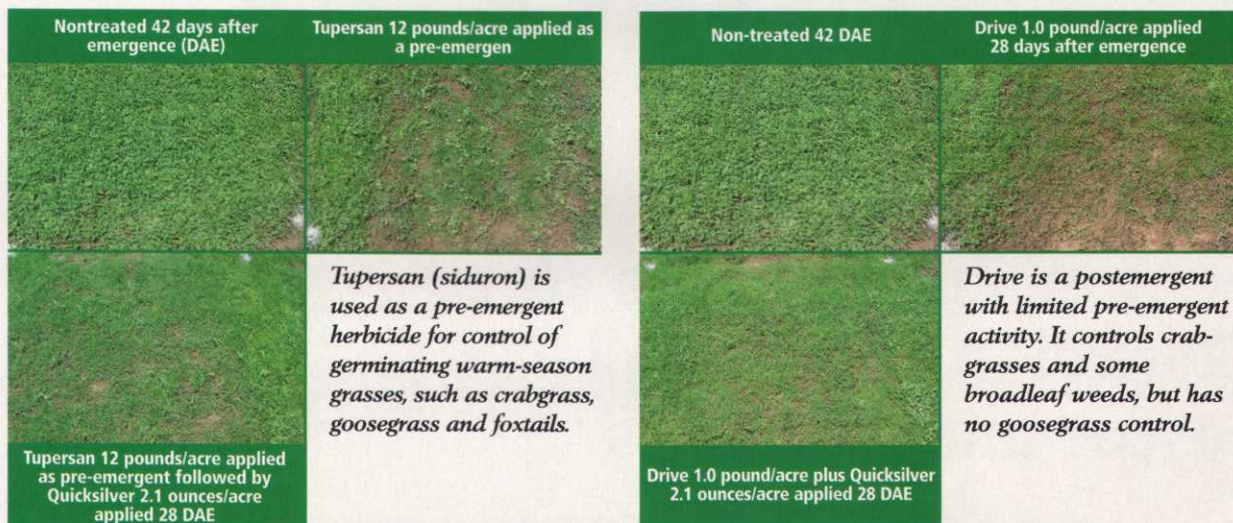


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Nontreated 42 days after emergence (DAE)

Tupersan 12 pounds/acre applied as a pre-emergen

Non-treated 42 DAE

Drive 1.0 pound/acre applied 28 days after emergence

Tupersan 12 pounds/acre applied as pre-emergen followed by Quicksilver 2.1 ounces/acre applied 28 DAE

Drive 1.0 pound/acre plus Quicksilver 2.1 ounces/acre applied 28 DAE

Tupersan (siduron) is used as a pre-emergent herbicide for control of germinating warm-season grasses, such as crabgrass, goosegrass and foxtails.

Drive is a postemergent with limited pre-emergent activity. It controls crabgrasses and some broadleaf weeds, but has no goosegrass control.

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should avoid nitrogen fertility in the summer due to brown patch severity.

Last, mowing practices play a crucial role in shifting the competitive advantage from turf to weeds. Tall fescue should be mowed at approximately 3 inches, while Kentucky bluegrass should be mowed at a height no lower than 1.5 inches.

Decreasing below these heights can cause the turf stand to self thin and can be harmful to a developing turfgrass stand. Similarly, mowing excessively high can cause the lower leaves to senesce (turn brown), decreasing the density of the turf stand. Infrequent mowing can lead to scalping of the turf. Remember sticking to the "1/3 Rule" (remove no more than one-third of the leaf tissue at each mowing) can save the turf a lot of stress.

Chemical weed management

Despite your best efforts of managing weeds using the best cultural practices, you are still going to have to deal with a certain level of weed infestation more often than not. The weed spectrum will vary according to the time of year you choose to establish tall fescue or Kentucky bluegrass from seed.

In the mid-South and for many other northern climates, seeding in late August to early September is best. With a late-summer to early-fall seeding, your primary weeds will be primarily winter annuals with some late-germinating crabgrass. Herbicide options are available for control of these weeds during a fall seeding.

But spring seeding is more challenging. Crabgrass species and goosegrass can be highly competitive under these conditions if not controlled. While herbicide options are available, timing of the herbicides are critical. First, let's review your best herbicide options.

Basically, for seeded establishment of tall fescue and Kentucky bluegrass, you have three main herbicides — Tupersan, QuickSilver and Drive (Table 1, p. 44). Tupersan (siduron) is used as a preemergence herbicide for control of germinating warm-season grasses, i.e., crabgrasses, goosegrass, foxtails and others. It has limited to no post-emergence activity, which limits its usefulness. For Tupersan, remember: It's a pre-emergence that controls only warm-season grass seedlings.

Quicksilver (carfentrazone) is the exact opposite of Tupersan. It is used as a postemergence herbicide for control of broadleaf weeds only. Quicksilver has no pre-emergence activity and is safe on almost all grasses. Quicksilver is a great fit for the seeded establishment arena because it is very effective on newly germinated broadleaf weeds. Larger broadleaf weeds require multiple applications of Quicksilver for effective control. For Quicksilver, remember: It's a postemergent that controls only small broadleaf weeds.

Drive (quinclorac) is somewhat between the other two herbicides. Drive has both postemergence and some pre-emergence activity. It is active on some warm-season grasses and some broadleaf weeds, but not all.

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QUICK TIP

As spring quickly approaches, it's time to look at your spraying equipment. The winter months provide a good opportunity to verify automatic rate control calibration of ground speed and flow rate to insure proper application rates. Also ensure your nozzles can produce the desired application rate. For more information on sprayer technology, visit www.johndeere.com or contact your local John Deere Golf & Turf One Source™ distributor.

TABLE 1

Table 1. Key information related to the use of Drive, Tupersan and QuickSilver during seeded establishment of tall fescue and Kentucky bluegrass.

| Herbicide | Active ingredient | Use rate | Use timing during seeded establishment | | Weeds controlled |
|--------------------------|-------------------|---|--|---|---|
| | | | Tall fescue | Kentucky bluegrass | |
| Drive 75 DF ¹ | quinclorac | 1 lb/a (0.75 lb ai/a) | at seeding, 7, 14, 21, 28 days after emergence | 7 day prior to seeding, 28 days after emergence | postemergence (some pre-emergence) control of crabgrasses, foxtails, some broadleaf weeds |
| Tupersan 50 WP | siduron | 6 to 12 lb/a (3 to 6 lb ai/a) | at seeding | at seeding | pre-emergence warm-season grass control |
| QuickSilver | carfentrazone | 1 to 2.1 fl oz/a (0.015 to 0.031 lb ai/a) | 7 days after emergence | 7 days after emergence | postemergence control of small broadleaf weeds |

¹ According to Drive label, no adjuvant should be added to Drive postemergence applications until 28 days after emergence.



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QUICK TIP

As sure as spring is just around the corner, *Poa annua* seedheads will be popping up in greens and fairways. Reduced flowering through use of plant growth regulators will gradually lower the *Poa* seedbank in the soil and aid in *Poa* reduction. Proxy® plant growth regulator provides excellent *Poa* and white clover seed-head suppression. Apply Proxy approximately 10 days before expected spring flush of *Poa* seedheads.

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Drive is very effective in controlling crabgrass species, but where it falls short is in goosegrass control. Finally for Drive, remember: It's a postemergent and with limited pre-emergence activity, and it controls crabgrasses and some broadleaf weeds but has no goosegrass control.

Recent research

Research at the University of Tennessee has evaluated the use of these three herbicides for their injury to tall fescue and control of various weeds species. For spring seeding, Tupersan or Drive must be used during the establishment phase; otherwise, the amount of desirable turfgrass cover will be unacceptable by the end of the summer.

The deciding factor for which herbicide to use will be based on the amount of goosegrass present. If you suspect that goosegrass will be a problem, then Tupersan is the herbicide to use. If not, postemergence applications of Drive can be utilized according to label recommendations.

Drive and Tupersan are both useful for fall seedings as well, especially if you are opting for an August seeding time to get an early jump on fall. Crabgrasses and other warm-season grasses can be problematic in this type of fall seeding scenario, albeit only for a short time into the fall.

Quicksilver can be integrated into both spring and fall seeding scenarios. In our experience, many different broadleaf weeds such as pigweeds, morning glories, ragweed and your normal compliment of turf broadleaf weeds can germinate in a newly seeded turfgrass stand. It is unknown how these weeds affect the development of the turfgrass stand if left unchecked. But if control is desired, Quicksilver can be highly effective with no injury to tall fescue or Kentucky bluegrass seedlings.

At the University of Tennessee, effective treatments for general weed control during spring- and fall-seeded establishment have been Siduron (12 pounds per acre) applied as a pre-emergence followed by QuickSilver (2.1 fluid ounces per acre) 14 to 28 days after emergence, or simply a tank-mixture of Drive (one pound per acre) plus Quicksilver (2.1 fluid ounces per acre) applied 28 days after emergence.

Both scenarios provide effective general weed control during seeded establishment.

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