

## Turfgrass Establishment In South Dakota

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Turfgrass is often planted without much thought as to what it needs to grow well and remain healthy. Turfgrass gets off to the best start when proper attention is given to:

- preparing the site and soil,
- understanding correct planting techniques for the material being used (seed, sod or plugs), and
- properly caring for the grass after planting.

This publication explains the steps involved in successful turfgrass establishment on any site, whether it is a lawn or sports turf that will be well watered and mowed often or a low-maintenance area. These steps are also important when renovating turf areas or repairing isolated spots.

The successful establishment of turfgrass also depends on:

- selecting a grass type that is adapted to your part of South Dakota.
- making sure your site is appropriate for the grass type you select (soil type, soil depth, amount of shade, supplemental irrigation, etc.), and
- giving the grass the level of care that matches its intended use.

### Grass Options for Planting

The grass species and variety you select also influences your planting options, as well as the site preparation you will need to do and the time it takes for the grass to establish. Table 1 shows the grass species suitable for South Dakota and the ways each can be planted. Table 2 has more detail on planting methods, quantity of planting material needed, and best planting season by method. If planting is contracted out, be certain to check the contract for the extent of services it specifies. Sod producers may grow only certain grass species or varieties of individual species.

**Table 1. An overview of turfgrass establishment methods suited for different grass species available in South Dakota.**

Grass Species#	Seed	Sod	Plugs
Buffalograss	Yes	Yes*	Yes*
Fine Fescue	Yes	Yes*	No
Kentucky bluegrass	Yes	Yes	No
Perennial ryegrass	Yes	No	No
Tall fescue	Yes	Yes*	No
# The cool-season grasses are Kentucky bluegrass, fine-leaved fescues, perennial ryegrass and tall fescue. The warm season species is buffalograss.			
* May not be commercially available in South Dakota.			

**Seed.** Seeding will typically cost less than other planting methods.

The cool-season grasses of Kentucky bluegrass, fine leaf fescues (creeping red fescue, hard fescue, chewings fescue and sheep fescue), tall fescue and perennial ryegrass, where they are adapted, are best planted from mid-August to early September. The goal is to have the seed germinate and develop well before cold temperatures significantly slows its growth prior to winter.

Warm-season grass seed germinates best when the temperature is 70 degrees F to 95 degrees F, so late spring to early summer is the best time to seed buffalograss. This will allow the greatest amount of warm weather growth before the growing season ends. It may be difficult to have buffalograss become fully established before the growing season ends due to the abbreviated warm climate in South Dakota. Seeded types of buffalograss are typically not available as sod. Most of the buffalograss planted in South Dakota is from seed. Vegetative types (varieties that do not produce viable seed or yield enough seed harvest for

commercial seed production) may be available in some states as sod or plugs.

Information on the seed label is important. You can evaluate seed quality by reading the information on the label (see Fig. 1). The label gives the seed test date (which should be within 12 months of purchase, exclusive of the calendar month in which the test was completed) and the percent germination and purity. Both percent germination and purity should be as high as possible, with little weed seed and inert matter contained in the package. Buying “certified seed” ensures that the variety stated to be in the package is indeed the variety in the package. Low-priced seed is often the most costly because it may have a low percent germination or purity. Professional landscapers evaluate seed on the basis of the percent “pure live seed” (not on the label). This number is the product of the percent purity and the percent germination. For example, Kentucky bluegrass seed with 85 percent germination and 98 percent purity contains 83 percent “pure live seed” ( $0.85 \times 0.98 = 0.83$ ). In contrast, Kentucky bluegrass with only 80 percent germination and 85 percent purity contains only 68 percent “pure live seed.” Seed should be stored in a cool, dry place to maintain viability.

Lot # BR549-98-0254 Very Good Grass Buddies Grass Seed Mixture			
Pure Seed	Variety/Kind	Germination	Origin
32.3%	AOK Kentucky bluegrass	85%	OR
23.2%	BeGood Kentucky bluegrass	85%	OR
22.5%	Forevermore Kentucky bluegrass	85%	WA
10%	Quickdraw perennial ryegrass	95%	OR
10%	Creepy creeping red fescue	90%	OR
0.8%	% Crop Seed		
1.1%	% Inert matter		
0.1%	% Weed seed		
Noxious weed seed per LB: none			
“Origin: OR tested 10/13 sell by 10/14 John Doe Seed Company, Somewhere USA”			

Figure 1. A sample of information on a grass seed label.

For more detailed information on how to best understand how to purchase good quality seed refer to the SDSU Extension Publication entitled “*Buying Quality Grass Seed For Lawns, Parks, and Sports Turf In the Northern Great Plains*”.

**Sod.** Turfgrasses that spread by rhizomes and/or stolons can be more easily grown and harvested as sod. Although sod costs more than seed, sodding may not cost more than seeding when the long-term cost of “growing in” seeded turf is considered. Seed usually requires more irrigation, fertilization, weed control and time on site to become fully established than if sodded.

### Advantages of Sodding over Seeding

- The quickest way to establish turfgrass
- Gives immediate soil erosion control
- Eliminates problems with dust and mud
- Minimizes the need for weed control after planting
- Can be used sooner than seeding
- Sod is available for some of the best turfgrass varieties
- Can be used for a total turf installation or the repair of smaller areas

The best time to plant or establish sod is when the turfgrass is actively growing so the sod will root or “knit” down into the soil as quickly as possible. As with seed, buying certified sod, if available, is the best way to be sure you are getting the stated variety. If you are uncertain as to the quality of sod that might be available, ask to visit other properties nearby that have been sodded or visit the sod farm to evaluate the sod quality.

Before ordering or purchasing sod, be sure you are prepared to install it and can irrigate it adequately. Sod is perishable, so plant it right away; it should not remain on the pallet or stack longer than 36 to 48 hours (less time in hot weather). Long periods of time on a pallet causes sod heating within the sod pallet that can damage or kill sod before it is planted!

Sod has traditionally been sold by the square yard, though the trend now is to sell it by the square foot. To determine the amount of sod you will need:

1. accurately measure the square feet of the area to be planted

2. then divide the total square feet by 9 (the number of square feet in a square yard) to calculate square yards. It will take 111 square yards per 1,000 square feet, assuming no waste during installation.
3. Sod is usually delivered on pallets that contain 50 square yards (450 square feet). There is some waste in installation because of odd shapes and irregular pieces, so order a bit more than you will need, based on the recommendation of the sod producer or landscaper.

**Plugs.** Relatively small areas can be established or repaired with plugs of grasses that spread by stolons, such as buffalograss. Plugging buffalograss is an effective method of establishment. Plugging is best done early during the warm summer months during the active buffalograss growing season when adequate moisture is available. The proper distance between plugs depends on the rate of growth and on how soon you want the grass to reach 100 percent ground cover. Buffalograss plugs planted 2 feet apart should completely cover by the second season if adequately watered and fertilized. Even though buffalograss is planted for minimum maintenance over the long term, every effort should be made to encourage buffalograss to grow in to full coverage. Plugs must be firmly pressed into the soil and then rolled to give a smooth surface for mowing. Plugs can be obtained by cutting up sod pieces. Sod producers may also market plugs in trays for mail order distribution.

## Steps to Follow before Planting

**1) Select a grass.** The availability of sod or seed of particular grass species or varieties varies by region. Seed of specific grass varieties may be hard to locate, since garden centers usually carry only a few seed varieties of each species. Reputable seedsmen try hard to formulate grass blends and mixtures that are best suited for their region. Refer to Extension publication “Buying Quality Grass Seed For Lawns, Parks, and Sports Turf In the Northern Great Plains” to learn how to buy the best grass seed for the appropriate turf areas at your site.

**2) Target the date of planting and work backward to schedule the preparation that must be done before planting.** Turfgrasses should be planted when

temperature and moisture are most favorable. This will be different for cool-season and warm-season grasses. See Table 2 for the approximate best planting dates for various grass species and planting methods.

**3) Measure the lawn area.** Measure to determine the total square feet to be planted and use this information to determine the amount of material or seed to purchase. You will also use the total square feet of the planted area to purchase seed and fertilizer, which typically follow product recommendations given in amounts per 1,000 square feet. Fertilizer recommendations are based on the number of pounds of nutrients needed per 1,000 square feet or per acre.

**4) Test the soil.** South Dakota soils may be deficient in the major nutrients required for turf. Soil testing will determine whether the soil pH and nutrient levels are in a range favorable for turf growth. The soil test report will tell you how much fertilizer needs to be applied before planting. A starter-type fertilizer should be tilled into the upper 4 to 6 inches of the soil in new establishment plantings. Allow a few weeks to get the results from the soil testing lab. Soil testing laboratories are listed in an iGrow publication on the web at: <http://igrow.org/gardens/commercial-horticulture/soil-testing-labs/>

**5) Control perennial weeds.** Perennial grassy weeds (e.g., quackgrass or smooth brome grass) detract from the appearance of new turf, compete with newly planted grass, and are very difficult to selectively control with herbicides after the turf is established. Control grassy and broadleaf weeds before planting by applying a non-selective, systemic herbicide (such as glyphosate). Quackgrass and smooth brome grass are difficult to control perennial grassy weeds. Two applications 4 to 8 weeks apart may be necessary to control perennial grassy weeds. Glyphosate has no soil residual and planting can be done 7 days after its application. However, weeds are best controlled when they are actively growing during warm days (day temperatures at least in the mid 50’s F), which may make applications more suited for late spring planting of buffalograss than early to mid-spring planting of cool season grasses. Prior to a mid-August to early September planting of cool season grasses is a prime time to be able to do what is needed to effectively control weeds prior to planting the grass.

**Table 2. Types of planting material, methods, rates, and recommended season for planting.**

Grass Species	Established From	Method of Planting	Quantity per 1000 sq. ft.	Best Planting Season	Next Best Planting Time
Buffalograss	Seed	Broadcast	2 to 3 lbs	Seed: late spring after last frost before July 1. Plugs early summer; Sod: early to mid-summer	none
	Plugs	Plant plugs on 12-inch to 24-inch centers	12-inch centers = 1,000 plugs and 24-inch centers = 250 plugs		
	Sod	Solid planting staggered in a brick-like pattern	Same amount in square feet as area sodded		
Kentucky bluegrass	Seed	Broadcast	2 to 3 lbs when only KBG	Mid-August to early September	April - June
	Sod	Solid planting staggered in a brick-like pattern	Same amount in square feet as area sodded	Mid-August to November 1 or well before ground is frozen	April - June
Fine Fescues	Seed	Same as KBG	5 to 7 lbs when only fine fescue	Same as KBG	April - June
	Sod	Same as KBG	Same amount in square feet as area sodded		
Perennial Ryegrass	Seed	Broadcast	6 to 8 lbs when only perennial ryegrass	Mid-August to early September	April - June
Tall fescue	Seed	Broadcast	6 to 8 lbs	Spring seeding (April-June) may allow for a more mature planting prior to winter to resist winter cold damage. Sod - spring or late summer.	
	Sod	Solid planting staggered in a brick-like pattern	Same amount in square feet as area sodded		

**6) Prepare the soil and grade the site.** Turfgrasses are healthier, need less water, and tolerate environmental stress better if they are grown in a deep, non-compacted soil. A soil depth of 10 to 12 inches is preferred. If topsoil depth is not an issue, grade the seedbed so the surface will drain away from the house, walks and driveways. A fall of 6 inches for every 40 to 50 surface feet is adequate for drainage. Make sure there are no pockets or depressions in the surface grade. Take care not to direct excessive water onto neighboring properties. Subsurface drainage systems are sometimes needed to remove excess water from poorly drained sites.

Good topsoil is a valuable commodity. If significant grading is required, stockpile the topsoil to the side of the property while grading the subsoil; then redistribute topsoil evenly over the area. If the topsoil is not deep enough, bring in good topsoil (a loam or sandy loam soil is best) to build up the native soil. Construct the site to avoid steep grassed slopes, as they are difficult to maintain. Do not indiscriminately add soil over tree

roots without first seeking advice from a professional horticulturist or arborist. You may need to build a retaining wall a good distance from the tree trunk to avoid harming the tree. Be sure to remove all debris such as stones, tree stumps and construction debris. Then you are ready to till the soil.

Unfortunately, compacted soils are usually not tilled before planting, even though they should be. Proper tillage requires the right equipment to do well and the soil settling process afterward takes time, so this important step is often skipped. Instead, compacted soils are often buried beneath a small amount of surface tillage or a shallow layer of topsoil or sand. If your soil is compacted, make every effort to till it deeply (scarify, chisel plow or rototill) so it does not become a permanent barrier to water flow, soil aeration and rooting. Do not till the soil when wet, as this will further compact it. After tilling, wet the soil to settle it; then let it dry. Repeat the wetting and drying cycle several times until the loosened soil has settled and you can determine whether further surface grading is necessary.

It may or may not be necessary, or practical, to till in soil amendments (organic matter) to improve the soil before planting. If organic matter is needed, till it in before the final grading of the topsoil. Organic matter (composts, well-decomposed hardwood sawdust, or similar material) should be thoroughly mixed into the top 4 to 6 inches of the seedbed. Rotary tilling is a good way to accomplish this. Intensively used sports fields (football, soccer, baseball) may need special preparation so the soil will resist compaction and drain well. Sports fields are often built with soil mixes that contain a high percentage of sand and that have been laboratory tested by qualified soil scientists.

**7) Install the irrigation system.** If you will have an in-ground irrigation system, install it before the final grading. Soil disturbed by trenching will then have time to settle with repeated irrigation. Be certain to use qualified irrigation designers and installers. Irrigation heads should be at the same level as the final grade if you are seeding, and 1/2 to 3/4 inch above the final grade if you are sodding.

**8) Add pre-plant fertilizer and amend soil pH.** The soil test report (from step 3) will suggest the types and rates of fertilizers for the new turf. Most turfgrasses prefer a soil pH near neutral, in the range of 6.0 to 7.0. Only a soil test can determine the need for lime. In much of South Dakota, the soil pH is above 7. While sulfur can be used to lower pH, the amount of sulfur needed and the effort required, make it impractical to do so on such a large scale. Starter-type fertilizers typically have more phosphorus than nitrogen and potassium and their N, P<sub>2</sub>O<sub>5</sub>, K<sub>2</sub>O nutrient ratios are about 1:2:1. Adding a starter-type fertilizer at planting will benefit the new seeding. If no soil test was done, apply 1 pound of nitrogen, 1 1/2 pounds of phosphate, and 1 pound of potash per 1,000 square feet. This should be mixed into the top 4 to 6 inches of soil.

**9) Irrigate to settle the soil.** If the site was tilled again to amend the soil, irrigate it several times, allowing the soil to settle. This will allow the low spots to show themselves and low areas are best re-graded before planting.

**10) Do the final soil preparation.** Walks and driveways should be flush with the final soil grade

before planting. The soil should be rolled to firm the soil surface and then lightly raked to leave a corrugated-type surface. A well settled and firmed soil, prior to planting, helps prevent ruts from mower tires and foot traffic while grass is growing in. Make certain the final soil preparation is done in time to receive delivery of seed or sod.

## Planting Tips by Method

**Seeding.** Seed can be sown by hand but it is better to use seeders or spreaders. Divide the seed required for a specific area into two equal parts, one to be broadcast as you walk back and forth in one direction, the second to be sown as you walk at right angles to the first seeding (Figure 2). This will make the seed distribution more uniform. After seeding lightly rake the soil and then roll the area with a weighted roller so the seed will have good contact with the soil. Landscape professionals may offer hydro-seeding as an alternative. Hydro-seeding equipment mixes seed, fertilizer and mulch in a water tank to form a slurry that is then uniformly sprayed on the soil area that has been prepared in the same way one would prepare it for a normal seeding.

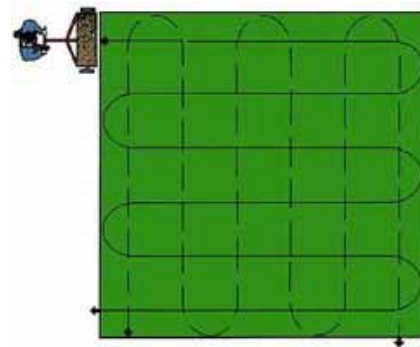


Figure 2. Pattern for seed distribution

**Plugging Buffalograss.** The proper spacing between sod plugs depends on how soon a 100 percent ground cover is desired. The summer growing season in South Dakota does not allow enough time to have buffalograss plugs planted on 2-foot centers grow together in one season. It will take a few seasons. There is always the option of using closer plug spacing (planting more plugs) to speed establishment. Plugs need to be planted in a timely manner and adequately watered and fertilized.

**Sodding.** The firm soil surface should be free of

footprints, stones, depressions and mounds. Sod is perishable and is best installed within 36 hours of harvest. If you see mildew or yellow grass leaves as you pull the pieces off the pallet, it is evidence of “sod heating” injury, which happens when sod is left on the pallet too long. Do not plant such sod.

To reduce the need for short pieces when installing sod, it is generally best to establish a straight line lengthwise through the lawn area. Lay the sod on either side of the line with the ends staggered in a brick-laying pattern. If the terrain slopes significantly, place the sod strips perpendicular to (across) the slope. On severe slopes the sod may need to be staked until it roots to prevent it from slipping during heavy rains.

A sharpened concrete trowel is very handy for cutting sod pieces, forcing the pieces tightly together, and leveling small depressions in the soil. Make certain to butt each sod piece up against the others as tightly as possible when laying the sod. Immediately after planting the sod, roll it with a weighted roller and thoroughly irrigate to wet the installed sod and the soil beneath the sod. Keep the sod moist until it is well-rooted into the soil. If the sod dries soon after transplanting, it will tend to shrink and separate from adjoining pieces, leaving gaps where weeds can grow.

## Care after Planting

**Mulching.** Mulching (straw) is a common practice in many areas of the country when seeding grasses to better hold soil moisture between irrigation cycles. Mulch is not necessary if the site is to be regularly irrigated. The windy conditions in South Dakota can make it difficult to keep the mulch in place. Hydro-seeding may include a layer of hydro-mulch, that is typically less affected by wind, to stabilize the soil surface and aid germination.

**Watering.** Newly seeded turf should be watered frequently. The first few weeks are especially critical as the plants begin to send out new roots and shoots. If young plants are allowed to dry out, they may die. Keep the seed and the soil moist, not saturated, during this initial grow-in period. This may be difficult to monitor in large landscapes, since it will take awhile for an irrigation system to cycle through all irrigation zones. It may be necessary to water three or four times for

short periods on hot, windy days. After seedlings begin growing (germination time will vary with species and soil temperature) and transplanted sod roots begin to develop, watering amounts and frequency can be adjusted as the turf develops in leaf canopy height and depth of root system. After planting sod, water enough to ensure that the soil under the sod is wet to a depth of 2 or 3 inches. Roots develop fairly soon under good growing conditions and with good watering practices. Avoid overwatering, as roots do not grow well in saturated, oxygen-deficient soil. Water newly sodded areas as you would established turf, except more frequently. Each time the sod begins to dry out, water to a depth a few inches below the depth of the root system. After the sod has been transplanted two weeks or so, begin to increase the amount of time between waterings.

**Mowing.** Allow the turfgrass to initially grow one-third to one-half higher than the desired mowing height before beginning to mow. Sodded sites will be ready for mowing sooner than others. Seeded sites should not be mowed until they can tolerate the mowing without damage and have covered well enough that the mower wheels will not create ruts. Reducing watering prior to mowing will help the soil dry a bit to better tolerate the weight of the mower. Consider mowing with a walk behind mower rather than a heavier riding mower to avoid making wheel track depressions in the soil. The recommended turf mowing heights will determine how frequently to mow. Keep mower blades sharp. Dull mowers may dislodge or damage young seedlings.

**Fertilizing.** If fertilizer was applied before planting seed, and the area was planted during the active growing season, then apply nitrogen fertilizer at a rate of 3/4 to 1 pound of nitrogen per 1,000 square feet when new growth from seedlings reaches a height of 1 to 2 inches. This will help the new seedlings to become better established sooner than if no additional fertilizer was applied for some time. Thirty days after this application, begin to follow the maintenance fertilization program.

**Controlling weeds.** Newly seeded areas may become weedy before they are completely covered with grass, as weeds are opportunistic, quick to germinate, and grow in the absence of turf competition. Spring

seedings of cool season grasses can use the pre-emergence herbicide siduron (this is the chemical name) at seeding to control crabgrass. Follow label directions. While grass is growing in, the safest way to control weeds is hand weeding. Help the grass compete against weeds by giving it adequate fertilization and irrigation and by mowing frequently. Regular mowing can help keep weeds in check until grass plantings mature enough to tolerate postemergence herbicides. Different types of grasses tolerate selective herbicides differently. With many postemergence weed control products it is best not to apply the herbicide until after the second or third mowing, when grass should be mature enough to tolerate it better. Always select a herbicide labeled for use on your grass species and read and follow the label guidelines. Sodded areas have few if any weed problems after planting if good quality weed-free sod is used and the sod pieces are well butted up against each other to avoid open seams between sod pieces.

## Other Options In Planting Turfgrass

**Dormant seeding cool-season grasses.** Due to the short growing season in the northern Great Plains there is an option to plant turfgrasses after the growing season ends when there is little chance of seed germination activity due to very cold temperatures. This is referred to as dormant seeding. The intent is to place the seed in the lawn system under cold conditions prior to any first snowfall, so it is ready to germinate as spring soil warming takes place. Some issues to consider when thinking about the dormant seeding option are:

- Spring can be a difficult time to get in the area to prepare the soil to seed or overseed due to excessive spring rains and dormant seeding may provide a good head start to overseeding a weak stand of grass.
- Some soil preparation or use of appropriate slicer seeders when dormant seeding weak or thin grass canopies will likely improve the results over just broadcasting the seed over the area.
- The return on investment from dormant overseeding may not be as great as seeding at the right time in spring or late summer for best seed germination and development.
- Dormant seeding rates are typically 1/4 to 1/3 greater than traditional seeding.

- Seeding too early in autumn or warmer and wetter winter conditions can cause seed to rot before it has a chance to germinate come spring.

**Overseeding an existing lawn.** Overseeding is a practice used to help increase turf density. The reasons turf may thin out include: excessive wear from sports and recreational use, damage from pests, drought and heat, winter cold and desiccation, or the original planting did not use grasses well suited to persist under how the lawn is managed as far as inputs (water, fertilizer, pest management, mowing, etc.). Overseeding assumes that a good bit of the original and desirable turfgrass is in place and the goal is to plant new grass to improve the overall appearance or performance of the turf.

Sometimes seeding may not be needed as under-fertilized grassed areas can thicken and fill in by just increasing the amount or frequency of nitrogen fertilizer applications. That choice must have enough healthy plant density to be able to fill in. If there is a question on which way to proceed one can always overseed and fertilize at the same time to take more control of the outcome.

It is not uncommon for a sports turf that is in frequent need of repair to be periodically overseeded with perennial ryegrass knowing that is their only option on areas that have little opportunity to be removed from play long enough to allow the more perennial and cold tolerant Kentucky bluegrass enough time to become fully established prior to use.

Overseeding is also done to repair small patches of lawns that are in need of repair. There are a number of products on the market that promote themselves as ways to best patch an area by planting new seed. Some products include mulch and fertilizer with the seed to improve the chance for a good outcome. Care should be taken to match up the grass species in the turf area with the grass seed used in overseeding or patching the turf.

While small areas can be “patched” rather easily by raking off the old debris, and scratching up the surface to provide good seed to soil contact needed by the seed to take up water for germination, overseeding larger expanses of turf often requires some powered equipment to do be able to prepare a seedbed in an

existing turf to favor seed germination. Landscapers often use slicer-seeders to perform the soil preparation and overseeding operation all at once. De-thatching equipment (vertical mowers or power rakes) can be also used to prepare a seedbed by cutting slits into the soil.

**The complete surface renovation of an existing turf.** There are times when the existing turfgrass area is best totally replanted. It may be out of a desire to improve the stand to better grasses to either tolerate or adapt to changing quality goals, use demands or management practices. Turf renovations usually include eliminating the remaining existing grasses and weeds with a non-selective herbicide and then planting a new grass without much conventional tillage.

This process is greatly simplified if there is not a need for soil tillage as in the case of a new turf establishment. There are five good reasons for soil tillage prior to turf establishment. They include:

- The soil is compacted. If the soil is compacted it will not allow for good seed establishment and growth
- The soil requires significant pH adjustment (lime or sulfur)
- Soil test recommendations to incorporate large amounts of phosphorus
- To incorporate soil amendments
- To improve surface grade/drainage

If the soil does not need to be tilled to correct any of these situations then one can proceed with a surface renovation that scratches up the soil surface before seeding to ensure good seed to soil contact and germination. Steps include:

- Use a non-selective herbicide to kill off all existing turf and weeds and allow a period of time for the grasses and weeds to die off (usually about 7 to 10 days during good growing conditions). Alternatively the area could be tilled and the remnants of the grass debris or the sod could be cut and removed.
- If a non-selective herbicide was used, closely mow off all the dead grass. The root system from the old stand will keep the soil in place for a few weeks and

help prevent erosion.

- Use a slit seeder to plant the grass seed in rows. Planting in two directions is a good practice. An alternate method is to use a vertical mower or de-thatcher to aggressively cut slits into the soil 1/8 to 1/4 inch deep in two directions. The seed is then broadcast across the area and then raked or drug with a mat to encourage the seed to move into the shallow cuts in the soil. Either method ensures good seed to soil contact to enhance germination.
- Apply a starter type fertilizer after planting
- Water as you would a new seeding.

### Care after Planting

The care after planting from dormant seeding, overseeding or surface renovation is similar to that mentioned previously for the new establishment planting.

### Fully Established Turf

A turf is well established when the grass can express the true characteristics of the species. It is often assumed that a lawn is “established” when it covers the ground completely. However, grass planted from seed can reach near total ground cover, under good care, in 60 days but still be more at risk from drought (undeveloped root system) or heavy traffic than more mature grass stands. It takes about a year from the date of planting, with good post-planting care throughout that period, to consider a seeded turf fully established and able to exhibit the most desirable characteristics of the species used (e.g.; tolerance to drought, traffic, shade, cold, heat and recovery from damage). Planting sod significantly speeds up the establishment process.

### References and acknowledgment

This material was adapted from “Turfgrass Establishment For Texas” produced by Texas A&M AgriLife Extension Service. Chalmers, D. R., and J. McAfee. 2010. Turfgrass Establishment For Texas. Texas A&M AgriLife Extension Service publication number B-6239. 8 pp.