

Seeding, sprigging or sodding?

PROPER MATERIAL SELECTION AND CARE ARE KEY TO SUCCESSFUL TURFGRASS ESTABLISHMENT REGARDLESS OF THE METHOD USED



Sodding greens, once considered a poor choice, is now more popular.

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*Photographs also
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Establishing a new turfgrass stand, whether on a new golf course or during a renovation project, is one of the most important areas of concern for a golf course superintendent. No matter what type of establishment technique is used (seeding, sprigging or sodding), many procedures are similar and produce first-class results. Achieving maximum turfgrass establishment makes a project successful from the beginning.

Planting window

The first principle to consider during the germination and initial growth phase, by seeding or sprigging of any turfgrass species, is the planting window – the time when soil and air temperatures are at their optimal level for germination and initial growth. This period encompasses the time from initial seeding and sprigging to the time of the first mowing. It can be four to eight weeks long.

When establishing by sodding, this planting window isn't such an important factor.

Whether dealing with cool- or warm-season species, the planting window varies throughout the country. It's important to establish the dates of the planting window, and then design the project to hit the time frames as close as possible. However, in the real world of construction and renovation, many superintendents realize it's difficult to accomplish. Even the best plans encounter poor weather conditions, material problems and design changes, which add up to delays and trying to establish turfgrass outside the planting window.

Maturation window

The second principle of establishing a turfgrass stand – after germination and the initial growth stage – is the maturation window, which is when turfgrass becomes established enough to support traffic and be a playable surface for golf. Many refer to this as the grow-in stage, which isn't accurate. Nonagronomists believe the grow-in stage is finished when there's complete turfgrass cover. This isn't the case. A more mature plant is needed to support golf traffic. The maturation window is much longer than the germination and initial growth period. Depending on the method, maturation can be as short as three or four weeks for sodding and as long as six months for seeding.

Seed establishment

The most popular choice for turfgrass establishment is seeding. However, not all grasses (especially warm-season ones) produce seed and must be established vegetatively. Seeding is the fastest and easiest method of planting a turfgrass stand, yet it has its share of disadvantages.

A big concern is the initial care. Watering is critical with all methods but is most critical during the longest period of time with seeded turf. Initial watering is needed for the seed to imbibe water, swell, crack open and have root radicle emergence. This time varies among different species, from as little as seven days to as long as 28 days. The faster the seed is able to accomplish this, the quicker a seedling plant will emerge. At the time of radicle emergence, the seedling plant is in its most delicate form. Watering at this time can't be underestimated. A tiny root is responsible for the water uptake and survival of the new seedling plant. Just an hour or two of hot and windy conditions can be disastrous. Many times this is when seeding failure occurs.

A big drawback with seeding is the susceptibility to erosion from wind and water. Even when protective mulches are used, nothing can match a bout with Mother Nature. Areas of channeling-type washouts can occur, as well as a floating and movement of seed with no soil wash. Floating tends to redistribute the seed and leave areas with high and low concentrations of seed.

Another result of erosion problems is

the contamination of different species. For example, if a fairway is seeded with creeping bentgrass, and the seed washes/floats into the rough area, which is Kentucky Bluegrass, it becomes contaminated. This becomes a playability problem with almost no control options. This doesn't occur with sod and rarely occurs with sprigging.

Also, some seeded species take a long time to mature. For example, Kentucky Bluegrass, a popular species for rough areas, has a slow establishment rate. Even with optimal germination, it can take 14 to 21 days, and maturation can take as long as six months.

Although often overlooked, wind also can cause problems with seeded areas. Depending on location, consistent high winds can make it almost impossible to keep the upper surface moist. As the surface dries, wind can carry seed easily.

Another benefit of seeding is cost – it's the cheapest method of establishing turfgrass. However, those cost savings can disappear if a few problems occur. The cost of repairing an area once or twice from a major washout can nullify the initial savings. This also can be a problem from an environmental standpoint, creating siltation issues with water sources.

Sod establishment

An establishment method gaining popularity is sodding. Years ago, sod was hardly considered, and sodding an entire golf course was out of the question. However,



Young turfgrass seedlings require extensive care.

turfgrass establishment



Sprigging is the common method of establishing warm-season grasses, but sodding (inset left) continues to gain popularity with golf course construction. The advent of big roll sod (inset right) has made sodding much faster and easier.

it's much more commonplace. Sod use originally started as a method to combat erosion problems on steep-sloped areas such as bunkers, pond bankings, and green and tee surrounds. They were initially wrapped with three to four feet of sod to help guard against erosion and provide better definition. When the benefits became apparent, sodded areas continued to grow, encompassing entire pond banks and green, tee and bunker complexes.

As sodding popularity grew, the next step was sodding entire golf courses. Although this is an unusual practice, it's becoming more popular. The major drawback of sodding is cost. Depending on the species, sod can range from as cheap as \$0.20 per square foot to as expensive as \$2.00 per square foot installed. Furthermore, obtaining quality sod isn't easy. Many projects are forced to use poor-quality sod because it might be the only kind available. Some of the common problems with poor sod quality are *Poa annua* contamination and excess thatch.

Another problem, which is often overlooked (especially when sodding greens), is the compatibility of the material the sod is grown on. When two materials aren't compatible, layering occurs, often resulting in a lack of rooting. This compatibility problem spurred the development and use of washed sod (soil/sandless) for greens. Washed sod has many success stories but also has its share of problems. Although there's no layering problem, rooting can be difficult because the material dries quickly.

Layering problems are rare when adding a soil-based sod to a soil-based area, such as fairways and rough. Many projects have sod custom-grown to their specifications.

This occurs about a year in advance, while dirt work takes place on the course. This custom-grown approach usually results in minimal problems and guarantees great sod quality for success.

Two benefits of sodding are the virtual elimination of washouts and the speed the golf course matures. Many feel these factors alone outweigh the cost. Opening months earlier can mean generating revenue more quickly. Practically eliminating washouts also can mean a cost savings from the extra money used to repair washouts. However, sod wash can happen when rooting hasn't developed and a hard rain occurs.

Sprigging

Most warm-season grasses aren't seed producers and must be established through sodding or sprigging. Sprigs are small plant parts, which usually contain rhizomes or stolons. Sprigs are produced from tearing turf into plant parts. The sprigs then are kept under controlled conditions and shipped to the site. This is the first major hurdle of sprigging. High-quality sprigs, clean of orphan grasses, are critical for success. Once sprigs are planted, new plants are developed from the nodes that start to grow and produce roots and shoots. The young plants develop additional plants, and as they mature, a sod-forming turf occurs.

Watering also is critical for successful sprigging, however, the initial watering might be the most critical. From the immediate time when sprigs are cut in the ground, for about a seven-day period, watering is vital. The small plant parts can dry down and die quickly. Watering sprigs starts immediately after planting and may be

watered as often as every 20 to 30 minutes. This is the time that most often dictates successful sprigging.

While sprigs aren't as susceptible to washouts and floating, it still can happen. When sprig floating occurs, sprigs tend to dry up and die, eliminating potential contamination problems. Sprigging costs much more than seeding but not as high as sodding, ranging from \$1,500 to \$3,000 per acre.

Combination

A seed/sod or sprig/sod combination to establish a turfgrass stand is the standard method that has evolved. The two combine the best of both worlds while keeping costs under control. With a seed/sod or sprig/sod method, sod would be laid around green and tee surrounds, bunkers and erosion prone areas, while seed or sprigs would be used for the other areas. The amount of sod used would vary. The low end might be only a couple acres of sod. The high end might be as much as 25 to 30 acres. This method has provided great results.

Successful establishment

Regardless of the method used for establishing turfgrass, they all can be successful with the proper material selection and care. An important factor for success is to obtain quality/certified seed, sprigs or sod. The second is water management, which will determine the success of turfgrass establishment. GCN

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