

Soilless Sod

Use Tied to Economy, USGA Specs

By Bruce F. Shank, Managing Editor

Any time you move a plant from where it was raised to its permanent location, there is a risk of soil incompatibility. No two soils are alike and differences can impact drainage and root growth. These problems complicate management of diseases and pests, drought, winterkill, traffic and more.

When turf must earn its keep every day, there is little tolerance for complications caused by incompatibility between the site soil and that imported with the sod.

Seed Establishment to Limit Incompatibility

The obvious solution to soil incompatibility is to seed, in other words to establish the plant from the very beginning where it will serve its intended purpose. In this way, there can't possibly be a problem with an

interface developing because of incompatible soils.

As the demand for golf and sports facilities has grown, developers challenge contractors to shorten the time it takes plants to become established. Years shrink to weeks in the construction calendar and frequently, there simply is no practical way to seed a permanent site.

Golf courses superintendents maintain turf nurseries to reduce soil incompatibility problems in case repairs or renovation of greens are needed. In this way, they can seed or sprig the exact turf varieties on their course ahead of time in approximately the same soil. The nursery stock adapts to local conditions before it is put into play.

Another version of this principle is the local sod producer, who can grow varieties to meet the needs of superintendents and sports turf managers in the area. Of course,

SOD PRODUCERS EXPLAIN SOILLESS SOD

We talked with three members of the Turfgrass Producers International in three areas of the country to get a feel for their opinion on washed sod. Here's what they have to say:

Brian Bouchard, Kingston Turf Farms Kingston, RI

- Courses with time to establish, the money to build USGA greens and demand for specific cultivars don't use it as much
- Many turf managers aren't taught the options of washed or soilless sod
- Needs extra attention but also provides quick (two months) installation, vs. a year with seed
- Watch irrigation and fertility — adding diatomaceous earth can help
- He's working on a device to remove soil without water

Jeff Cole, West Coast Turf Palm Desert, CA

- Track record helps grow use of washed sod
- Good solution when there's no time to seed
- Recommends early core cultivation and top-dressing to encourage establishment
- Light weight allows long-distance shipping

Michael Spinks, Tifton Turf Farms Tifton, GA

- Washing often done as a service to customers
- Sales depend on economy and course's construction deadlines
- Looking for new uses and places to use washed sod
- Purity a key issue with hybrid bermudagrasses

no grower can maintain a supply of all available turfgrass cultivars. And, there is still a chance of soil differences.

Turf producers are adapting to resolve soil incompatibility problems and frequently offer contract growing to meet the exact needs of customers who plan ahead.

After three to five years, the mat and organic matter generated by turfgrass roots will alter the content of the sand mixture. For those superintendents who don't want to take chances with incompatibility, a limited number of sod producers offer washed or soilless sod.

The United States Golf Association's Green Section (USGA) provides a partial solution to compatibility problems in its specifications for greens mixes. Similar programs have been developed for sports fields, among them Prescription Athletic

Turf, HiPlay, and sand capping.

These depend largely on sand and set standards for particle size and shape. Soil labs are responding to meet the testing needs of superintendents with respect to both sand and organic matter. Sod producers have the ability to grow turf on mixes which meet or approximate the USGA specifications.

Now, when golf courses build or renovate greens, they can obtain bentgrass or bermudagrass growing in a similar rootzone soil. Of course, after three to five years, the mat and organic matter generated by turfgrass roots will alter the content of the sand mixture. For those superintendents who don't want to take chances with incompatibility, a limited number of sod producers offer washed or soilless sod.

From the Sod Producers' Perspective

So why aren't more architects and superintendents turning to washed sod for renovation and new construction? We asked three members of the Turfgrass Producers International (TPI), who offer

washed sod, for their opinions. Each comes from a different part of the country and has strong feelings about washed sod.

Time and money are major factors, but so are rootzone preparation and post-installation care, say the experts. The acceptance of washed sod is based on performance, which is based upon management, something not controlled by the sod grower. Not only does the customer need to be sold on the idea of paying up to 50 percent extra for washed sod, but he also needs to dedicate time and resources to properly care for it for up to two months following installation.

Kingston Turf Farms — Brian Bouchard, president of Kingston Turf Farms in Kingston, RI reports that demand for washed sod has diminished in New England

"Golf courses in our region are buying less washed bentgrass lately," he says, "because they have the time to establish greens from seed, the money to build USGA greens, and are increasingly demanding about specific cultivars.

"When you plan to allow two years to build a course, and the golf course architect appreciates the value of seeded greens, and the superintendent is knowledgeable enough and has the time to successfully establish greens from seed, it makes sense," he noted. That's a lot of ifs, though.

Since the value of real estate in the region is relatively high, building golf courses has become a financially significant undertaking where cutting corners is unwise. Superintendents are better educated about cultivars and management.

Conversely, many of the courses in the region are older and USGA greens specs weren't used when they were built. Many superintendents are comfortable with soil greens and don't have as much experience with managing high-sand content greens.

"Part of the problem is many superintendents aren't taught about the option of washed or soilless sod," adds Bouchard. "With so much on the line, they naturally question factors they don't think they can control. Extra attention is needed after installing washed sod, but you can play on

it generally in two months. That's a lot less than a whole year with seed and you don't have the concern over soil incompatibility you would with sod grown on soil. It's mostly a matter of learning a few things."

Among them is the awareness that lateral stability is reduced. "When you wash the soil off the sod, you lose some of the side-to-side stability of the material," explains Bouchard.

"With unwashed sod, stability is pretty decent once the sod has rooted downward. Washed sod needs more time to reestablish lateral stability after rooting. Aerification, spiking and topdressing help, but the turf has to regrow lateral rhizomes and tillers before it's ready for play," he says.

Irrigation and fertility need to be watched more closely with washed sod, he says. Sand drains rapidly and does not hold onto nutrients. The percent of organic matter in USGA greensmix, usually selected peats, is very small. Bouchard has seen improvement in water and nutrient retention by adding a diatomaceous earth amendment (Axis).

Bouchard's interest in washed sod extends to inventing a device that removes soil without water. His brother, Darrell Bouchard at nearby Washington County Turf, has one of the few sod washers in the region and a number of sod growers use it.

"To wash sod you need the equipment, a lagoon to let the soil settle out of the wash water, and skilled labor," Brian remarks. "The washed sod is sopping wet when you ship it, even though it weighs less than half of normal sod. And, the washing unit is not portable."

He wanted to design a device that could be attached to or follow the sod harvester that used no water and left the soil on the field. It's a work in progress, but he has succeeded to a degree. While clay and silt are too stubborn for the vibrating piece of equipment to remove, it is effective with sand and loam.

Believe it or not, sod growers are laser leveling their fields and trucking in tons of coarse sand to grow turf that meets high-drainage requirements. The integrity of sand is poor, and Bouchard's vibrating soil cleaner fits the bill perfectly. "We can get the weight of the sod down to a third of normal," he

boasts. "That means we can put three times as much soilless sod on a single truck, enough to cover more than 30,000 sq. ft.!"

Plants hold their own moisture, Bouchard stresses. "It's not necessary to keep the washed sod soaking wet all the time. The process of washing is a delay between harvest and delivery. I'm trying to keep the time between harvesting and installation to an absolute minimum."

Kingston grows Kentucky bluegrasses and a number of creeping bentgrasses, that they also offer in soilless versions. Bouchard is most concerned about inadequate preparation for sodding. "We can communicate management tips for after installation rather easily, but it is very awkward when we deliver to a site that is obviously poorly prepared. Experience has shown us that failure is most often the result of poor preparation or follow-up care."

West Coast Turf — Jeff Cole has been marketing sod to western golf courses for more than 20 years and for West Coast Turf since its inception. Active in both golf and sports turf specialties, Cole is a skilled listener who advises owners John and Joe Foster in providing the broadest range of services to their customers.

"Our washed sod business is experiencing a resurgence," reveals Cole. "There were some rough spots at first, but washed sod has a track record now to show it works well when a developer has to meet a timetable that doesn't allow for seeding. Architects realize it's the next best thing to seeding and the best solution when there isn't time to seed. There is a better overall understanding of greensmixes and turfgrasses and how they provide the best conditions under today's fast greens and heavy play."

"Once you spend the money to build a USGA green, you don't want to blow it by taking shortcuts with the turf." Cole credits better educated superintendents for the increased acceptance of washed sod.

"Washed sod is a tight mat of roots that

"There is a better overall understanding of greensmixes and turfgrasses and how they provide the best conditions under today's fast greens and heavy play."
— Jeff Cole

needs to be opened up to establish percolation through the rootzone," says Cole. "The sod needs to be kept moist, so you irrigate frequently. But, you don't want it to act like a sponge sitting on top of an impervious surface.

He continues: "Some superintendents spike the day after installation and start light topdressing with sand. We recommend, as soon as roots have had a chance to

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peg the sod down, that the sod be core cultivated and topdressed. This should be done more than once to restore firmness to the sod and to promote proper drainage."

The sod will have enough stored carbohydrates from fertilization by the grower to stay vigorous for a month or longer. To make sure nutrition is adequate after the first few weeks, superintendents can

have tissue samples tested. Due to the poor nutrient holding capacity of sand (that's why a small amount of peat is included in greensmixes) deficiencies can be corrected with light foliar feeding or fertigation.

Washed sod has advantages besides eliminating soil incompatibility, says Cole. "It is an important tool that allows West Coast to ship sod long distances or out of the country. It also lets the company meet an order from two or more farms without having to worry about soil problems.

"We have five farms spread out across California, Nevada and Arizona," he points out. "That can help us match soils for local projects in high growth areas. But washing the sod eliminates the concern over incompatibility."

Cole says once sod is washed, it weighs half of conventional sod. "That makes long distance shipping practical. You need to know what inspections are required and how to work with trucking companies and

airlines. We have flown sprigs to Asia and trucked sod to Mexico."

Tifton Turf Farms — Tifton Turf Farms in Tifton, GA is located just miles from the Georgia Coastal Experiment Station where advanced greens quality bermudagrasses were developed by Dr. Glenn Burton. Tifeagle, the latest in the "Tif" series, is a prime mover for washed sod at the 1,300 acre farm, explains President Michael Spinks.

"Our market is primarily golf with some retail," says Spinks. "We have two washers so we can harvest and wash a full load [9,072 sq. ft.] in one morning. We have the trained personnel ready to operate the washing machinery on staff. Washing sod is different from washing sprigs, it takes more expertise."

"We provide washing basically at cost as a service to our customers," he continues. "Washed sod is a limited market but our customers know we can provide this service quickly and in large volume. Architects look to us when they run into a time problem because they know we can meet their needs. That's what sod production is all about."

But Spinks admits, washed sod sales depend on the economy and golf course construction. "We are always looking for new uses and new places for our sod. Purity continues to be an issue with hybrid bermudagrasses, and our customers know we tow the line because we are so close to the Experiment Station. We price our products competitively. Customers should always remember that low price can hurt you when quality is critical, and that is definitely the case with washed sod for USGA greens. There are no short cuts or bargains. You have to do it right the first time."