



Planting Santa Ana stolons in Los Angeles Coliseum. Photo courtesy: Steve Cockerham.

# Renovating Hybrid Bermudagrass By Sprigging and Stolonizing

**L**ike the ebb and flow of the tide, so goes the popularity of hybrid bermudagrass as a turfgrass for sports. Attempts to replace bermudagrass with tall fescue, zoysiagrass, perennial ryegrass, bahiagrass, bentgrass and even the more exotic seaside paspalum makes one wonder what is so terrible about the aggressive, warm-season grass?

If it's so bad why do some facilities in the northern limits of the transition zone have sod and stolons shipped in from southern sod farms in refrigerated trucks every spring knowing that winterkill is a possibility? Why are researchers trying so hard to find a bermudagrass that is more cold tolerant? The bottom line is nothing holds up to punishment better during the summer than hybrid bermudagrass. During the hot summer months the grass spreads like kudzu, quickly filling in where divots and cleats have done their damage.

Certainly hybrid bermudagrasses have their faults. At the height of the football season they want to go dormant. When baseball and soccer teams get started in late winter the hybrids are still drowsy with little energy to recover from injury or to fill in thin spots. By the time they are up and running, bermudagrasses on year-round sports turf may be so sparse that replanting is necessary to regain a dense stand.

The crux of the matter is that they are vegetative grasses in a field where managers like the convenience of seed, especially fast-germinating seed. If a seeded bermudagrass was available with the characteristics of the advanced hybrids and the germination rate of ryegrass, there would be no contest.

That, however, is not likely in the near future. If it's seed you want, your only current option is common bermudagrass. Commercial quantities of two improved, seed producing bermudagrasses are a few years away and they still don't appear to stack up against the likes of Tifway or Santa Ana.

In the meantime, sports turf managers are content to overseed dormant hybrid bermuda with annual and perennial ryegrasses and *Poa trivialis*, rough bluegrass. The overseeding and reseeding market has grown exponentially as the industry meets the demand for year-round cover and color. It's not unusual to hear a superintendent or athletic field manager speculate that perhaps it would be easier to maintain ryegrass, or even bentgrass on greens, throughout the summer than to switch from bermudagrass to ryegrass and back each year.

Some managers have strong opinions about the effects of ryegrass on spring transition of bermudagrass. They say the heavier you overseed and the longer you favor the ryegrass the harder it is on the bermuda.

Some growers of hybrid bermudagrass sod in areas with moderate climates say that with proper management and controlled use, the bermuda doesn't need to be overseeded. Sports turf managers and turf experts in areas with more dramatic shifts in weather and temperature say the ryegrass surrenders quickly with the return of hot, humid weather.

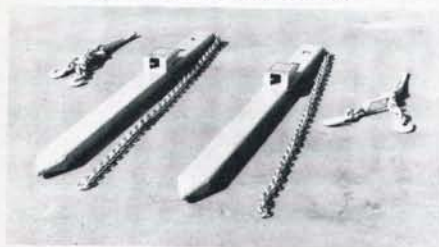
But few turf managers south of the Mason Dixon line will dispute that hybrid bermuda takes the heat and the beating better in the summer than any other type of turfgrass. Few will also dispute the appearance and maintenance of ryegrass in the winter in the South. They know that attractive and durable year-round turf means two types of turf with two types of management.

Once the turf manager accepts the two-turf program, he commits himself to the overseeding process. He must adjust his herbicide program in the fall, he alters his irrigation schedule, he increases his fertilizer and fungicide budgets, and invests in the equipment and seed needed to sow and maintain winter turf. This is a sizable commitment requiring expertise and effort.

However, come the following spring, you find few sports turf managers making an equal commitment to restore the bermudagrass to top form. Fortunately, in many

*continued on page 22*

# From Bucket Loader to Versatile Fork Lift in less Than 5 Minutes!



C.C. Bucket Forks can change a bucket loader into a multi-purpose lifting vehicle. No drilling, welding or bolting.

**Easy-on, easy-off installation  
-in less than 5 minutes.**

Made in the U.S.A. Canadian Patent No. 1,103,622  
U.S. Patent No. 4,242,035



**A NEW CONCEPT IN MATERIAL HANDLING!**

## CHECK THESE SPECIAL FEATURES!

- Easy storage—tines are separate and flat
- Transports easily—no awkward angles
- Easy to handle—each fork weighs only 50 pounds
- Universal—fits most popular brands of loader buckets
- Easy-on, easy-off installation—in less than 5 minutes!
- Ideal for farm use or at construction sites
- Handles most materials—load capacity is 3,000 pounds
- Full money back guarantee!

# \$399.00

(delivered anywhere in U.S.)

Send your check  
or money order to:

**CC<sup>®</sup>**  
**C.C. Bucket Forks, Inc.<sup>®</sup>**  
P.O. Box 3796, Orange, CA 92665

In Calif. call collect: 1-714-637-4645  
Toll-free, except in Calif. 1-800-854-3532

CA RES. ADD 6% SALES TAX

Copyright 1981 C.C. Bucket Forks, Inc.

## Renovating Hybrid Bermudagrass

*continued from page 20*

cases, the bermudagrass kicks in as the ryegrass fades away with little extra investment in time or expense. Some managers cut back on irrigation while others verticut to stimulate the bermudagrass and discourage the ryegrass. If the bermuda doesn't respond quickly, both the ryegrass and the bermudagrass are accused of failing the test.

"Hybrid bermudagrasses are great turfgrasses for sports," states Neil Beeson, manager of the Pro Turf Division at Pacific Sod, in Camarillo, CA, "but you can't forget about them all winter." Overseeding with heavy rates of ryegrass creates a dense turf that blocks sunlight and warmth from reaching the bermudagrass below, says Beeson. The bermuda has been using up its carbohydrate reserves while dormant and starts the spring in a weakened state. It needs to rebuild its reserves through photosynthesis before it can compete most effectively with another turfgrass.

"Mowing height is an important factor in helping bermudagrass build up reserves for winter dormancy and rhizomes for cold tolerance," points out Dr. Glenn Burton, developer of the "Tif" series of hybrid bermudagrasses at the Coastal Plains Research Station in Tifton, GA. "During a cold winter, golf courses in the northern part of the bermudagrass belt will suffer heavy losses on greens mowed at 3/16 inch, slight losses on fairways mowed at 1/2 to 3/4 inch, and no loss on roughs mowed at two inches. You can manage the turf before winter to improve its performance the following spring."

Sports turf managers don't think twice about reseeding divots and worn areas, but they seem to resist the idea of sprigging or stolonizing bermudagrass to help it recover. They will find a way to protect newly overseeded turf in the fall for three to four weeks, but they can't squeeze out another four weeks of protection in the spring to give new bermudagrass sprigs a chance to fill in?

Timing depends completely on location and when soil temperatures rise to more than 50 degrees F. As soil temperatures rise, the growth of the bermudagrass speeds up. Sprigging, or stolonizing, can take place as soon as the bermudagrass starts to green up. Bermuda may be dormant for four months in Kansas City or for two weeks in San Diego.

If this occurs in the midst of a busy season, there is a definite conflict. But sprigging or stolon planting can be delayed if necessary until summer. Some sports turf managers will manage overseeded ryegrass to prolong its usefulness until the bermudagrass can be renovated without disturbing a major event such as a tournament.

Stolons are shoots which originate at the base of the plant and extend along the surface of the soil. Rhizomes are shoots like stolons that extend laterally below the surface of the soil. By harvesting bermudagrass sod and pulling it apart with a shredder and removing the soil, pieces of stolons and rhi-

zomes called sprigs are produced. When planted, these sprigs will produce new bermudagrass plants. Clippings are foliage and have no reproductive potential.

Once the sprigs are planted, they need 60 to 90 days to fill in completely. The most critical items are water followed by fertilizer. The sprigs depend completely on daily irrigation and the nutrients they received prior to harvesting until they develop a strong root system. The rate of root growth can vary based upon soil texture, temperature, soil pH, nutrients, moisture and competition from another turfgrass on the site. Once the root system is established, the aggressive turf spreads rapidly by a network of new rhizomes and stolons.

If use can't be restricted for a few weeks, Burton says that some sports turf managers have combined sprigging the hybrid with seeding common bermudagrass. "The hybrid will overtake the common in a season or two. Of course, establishment of the hybrid is faster with higher rates of sprigs."

"Once a coach, player or sports turf manager gets an eyeful of Kentucky bluegrass or perennial ryegrass, that's what he wants," remarks Bill Flannigan, who operates a stolon planting service in Ventura, CA. "But the Southwest is desert and cool-season grasses just won't last for more than a few years. They are now accepting the fact that the hybrid bermudas are finer-bladed, darker green and tougher than most other warm-season grasses. What's more, once they plant them and maintain them properly, they'll be around many years from now."

Once a golf course superintendent or sports turf manager decides hybrid bermuda is what he wants, he has three choices. He can sprig, he can plant plugs, or he can sod. Planting four-inch plugs every few inches on a large site is generally impractical. Strip sodding is similar to plugging. Total sodding provides instant cover but costs more than \$20,000 for a single football field and is prohibitive for golf courses. The difference between sprigging and sodding is about four cents a square foot compared to 35 cents a square foot. "Sprigging allows a larger number of schools, parks and golf courses to take advantage of hybrid bermudagrass," states Dr. Tim Bowyer, president of Southern Turf Nurseries in Norcross, GA. "It is an economical method of providing top quality cover for large, heavily-used areas."

Sprigs can be planted by any of four methods. Three of the methods require specific types of equipment operated by knowledgeable individuals. A sprigging contractor has basic fixed costs to transport this equipment to a job site. For this reason small areas, 20,000 square feet or less, may be sprigged most economically by the sports turf manager. A sprigging contractor can renovate three to four fields in a single day.

The most common method of planting is the one used by sod growers to plant their farms, generally referred to as stolonizing. The machinery broadcasts processed sprigs

at a predetermined rate onto the prepared soil. Two offset rows of dull discs then crimp the sprigs an inch or more into the ground. Flannigan has replaced the discs with a drum containing teeth for the expressed purpose of planting into an existing stand of turf. Most machines have a roller to compress the soil around the sprigs after they are planted.

Between five to eight bushels of sprigs are broadcast per 1,000 square feet. One of these machines can plant 12 acres per day. Preparation for stolonizing is the same as it would be for seeding.

Flannigan has developed a stolon planter that takes fresh sod and shreds it into sprigs just before they are planted. "It saves the sod grower from processing and packaging sprigs and gives you fresher material," says Flannigan. "Sprigs must be kept cool after they are processed. The longer the time you have to wait between processing and planting, the more you have to worry about the vigor of the sprigs."

Topdressing the area after planting is sometimes recommended. "Just make sure your topdressing is compatible with the soil on site," warns Flannigan. "Layering can cause trouble down the road."

A sprigger is the second type of specialized machinery used. The planter utilizes pairs of discs spaced two to four inches apart to open up rows of slits in the soil to receive the sprigs. The sprigs are placed into the

slits which are then closed by sets of rollers. This method requires a smaller amount of sprigs and less soil preparation.

A relatively new and controversial method of planting sprigs uses a hydraulic mulcher. The sprigs are mixed in the tank with mulch, water, and fertilizer and sprayed at high pressure on a prepared seedbed. Mike Santoro, president of Southern California Hydroseed & Hydromulch, Inc. in Temecula, CA, is frequently called to sprig fairways, baseball fields and worn-out football fields.

"You really have to know what you are doing," he states. The sprigs must be fresh, clump-free, and fairly uniform in size. "Only experience shows you how to get the sprigs down at the right rate and evenly. We do a half acre at a time putting down 10 bushels per 1,000 square feet. Since the sprigs are applied with water and mulch, you have a little more leeway with irrigation. The mulch protects the sprigs from drying out rapidly. You can add a tackifier in real windy locations."

Detractors of hydrosprigging say the sprigs lay on the surface instead of being pushed into the topsoil. Santoro says if properly sprayed, the sprigs do enter the soil. However, few dispute the benefit of the mulch. Hydromulching can replace the topdressing process. "Our success rate has been tremendous, so to me whether the sprigs are deep enough in the soil doesn't seem to make any difference."

Santoro says sports turf managers like hydrosprigging because large areas can be planted without pulling heavy equipment over the area. It can also be used to plant areas in hilly or rolling terrain. "Golf course architects like to shape golf courses with mounds and rolling fairways," Santoro points out. Flannigan, on the other hand, states, "If you can mow it, we can plant it with a stolon planter."

For small areas, broadcasting sprigs by hand and discing them in is most economical. Some sod growers have walk-behind discs to lend to their customers who want to sprig by hand. A core aerator can be substituted for the discs by going over the sprigs six to eight times in different directions. Small areas are also topdressed more easily.

Whether renovating existing turf or planting for the first time, soil preparation and maintenance after sprigging are of critical importance. The first step is a complete soil test to determine nutrient levels, soil texture and soil pH. Phosphorus levels are especially important to speed rooting along. Root development can also be slowed by excessively acid or alkaline soils. A heavy thatch layer will further expose the delicate sprigs to rapid drying.

Renewing a field's crown or changing a green's slope should be done prior to sprigging. Poor or compacted soil should be aerated and amended to provide well-textured

*continued on page 24*

# GET SERIOUS

## ABOUT YOUR MULCHING & SEEDING EQUIPMENT. BOWIE HYDRO-MULCHERS & AERO-MULCHERS. WE COVER THE FIELD.

### BOWIE HYDRO-MULCHER® FEATURES:

- Rugged, Dependable Construction
- Maximum Material Handling Capacities
- Longer Machine Life
- Faster Loading/Unloading Rates
- Larger Power Plants
- Gear or Centrifugal Pumps
- Patented Mulch Shredder Bar
- Superior Anti-Clog Engineering
- Highest Resale Values
- The Industry's Most Experienced Dealer Network



## BOWIE INDUSTRIES, INC.

P.O. Box 931 ■ Bowie, Texas 76230

Toll-Free: 1-800-433-0934 ■ In Texas: 1-817-872-2286 ■ Telex: 887844

Hydro-Mulcher® is a registered trademark of Bowie Industries, Inc.

## Renovating Hybrid Bermudagrass

continued from page 23

soil for planting. Don't work the soil too much, warns Dr. Art Bruneau, turf specialist at North Carolina State University in Raleigh. "If you break it down to a powder, it will turn to rock as soon as the water is turned on."

Sites with dry spots should be treated with wetting agents to provide uniform drainage and water retention for the sprigs. Finally, the area covered by each irrigation station should be identified so that the contractor can plant one station at a time.

Flannigan recommends two other preplanting steps when planting through existing turf. "A few weeks before sprigging, reduce the mowing height to 3/8- or 1/2-inch and pick up the clippings each time you mow. The week before, irrigate heavily to moisten the soil down to a foot. Two days beforehand, back off the irrigation." If the contractor is not fertilizing, apply fertilizer with a formulation based on soil tests.

Insist on fresh sprigs from the start and visit the sod grower to see how he maintains and harvests his sprigs, says Flannigan. "Don't accept sprigs that have been in a cooler for very long."

"Once the sprigging contractor pulls his equipment onto the site, he has to plant," explains Flannigan. "He can't wait for last minute changes because the sprigs are perishable. He should plant by irrigation station. If you are topdressing, do it fast. You

have between 15 minutes and an hour after planting to start irrigating depending upon temperature, wind and soil moisture. You want to pour on the water and keep pouring it on for at least the next three weeks. Then, slowly back off the water until the sprigs are fully established. Continue to mow low to encourage the bermuda to tiller."

Fertilize and irrigate heavily, says Bruneau, with up to one half pound of nitrogen per 1,000 square feet every ten days. To improve wear tolerance, add potassium, especially if nitrogen sources containing ammonium were used to push the bermuda. Potassium increases the strength of the turf tissue, but it can be leached out by ammonium sulfate or ammonium nitrate, reports Dr. James Beard at Texas A&M University, College Station.

Use weed control with discretion, states Dr. Euel Coates, professor of weed science at Mississippi State University. Many herbicides can slow root development when the sprigs are young. However, weed control may be more important than fast establishment for sites with a history of crabgrass and/or goosegrass infestation. Coates recommends applying Ronstar preemergence herbicide after planting in such cases. The herbicide does not interfere with rooting.

"You should also consider that the bermuda benefits when competition from weeds is eliminated," he adds. Pay close attention to labels on postemergence herbicides.

"Usually they state that applications should be delayed for at least two to three mowings, but you might want to hold off for 90 days."

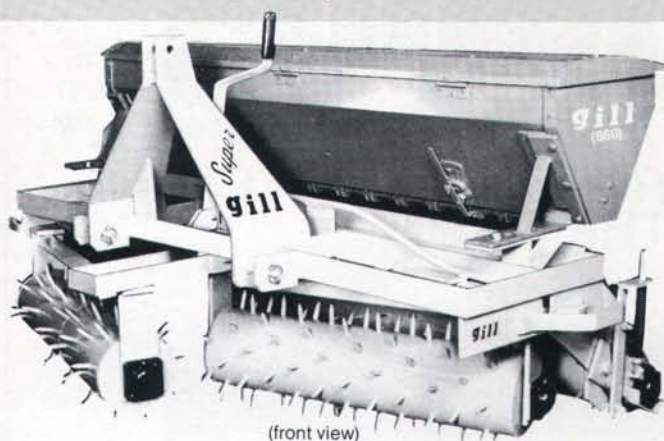
A word of caution to sports turf managers about hybrid bermudagrasses . . . they have poor shade tolerance. If a green or fairway is surrounded by trees, don't be surprised when the bermudagrass fails to fill in rapidly. It's not unusual for fields at large stadiums to be at least partially shaded during the spring and fall.

Some stadium managers have tried topdressing with activated charcoal to absorb and hold heat in the soil. Perforated plastic covers and geotextiles have also been used to keep the soil warm during establishment. Just be alert to excessive heat and humidity under the covers which may encourage diseases.

Ninety days is a long time to keep sports turf out of play. Add another 30 days for overseeding and that takes away four useable months. Fortunately, with proper management, renovation of hybrid bermudagrass sports turf is not an annual necessity. Once the bermuda establishes a dense network of roots and rhizomes, it resists damage and thinning better than almost any other type of warm-season turfgrass. If heavy use takes its toll after two or three years, investing in sprigging is a small price to pay for three more years of quality summer sports turf.

# **gill**

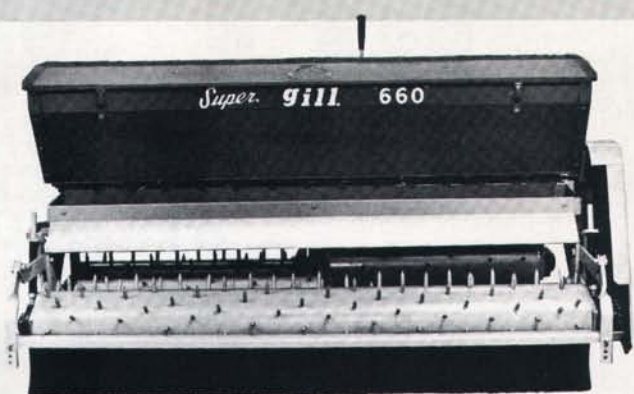
## MODEL SU-900/8 SPIKER WITH MODEL SU-660 SEEDER



(front view)

### MODEL SU-900 SPIKER

- Aerates Soil. Punches holes in turf to provide entrance of water and air to grass root system.
- Angle Front Rollers. Front rollers are adjustable fore and aft to allow for desired crabbing for turf disturbance.
- Creates a Seed Bed With Loose Soil.
- Insures Good Seed Germination.
- Overseeding or Reseeding Without Damage To Turf.



(rear view)

- Any Seed or Seed/Fertilizer, Box Combination Can Be Mounted. Brush On Spiker Is Optional.

### MODEL SU-660 SEEDER

Single Section Large Capacity Seed Box. Seed controlled by precision metered gears. Easy mounting and dismounting agitator to insure constant flow of seed.

**FOR FURTHER INFORMATION OR THE NAME OF YOUR LOCAL DEALER, PLEASE CONTACT US AT:**

**gill**  
ClèrVü

INDUSTRIES, INC.

9621 BROOKFORD STREET, P.O. BOX 7324  
CHARLOTTE, NC 28217-7324 704/588-1511