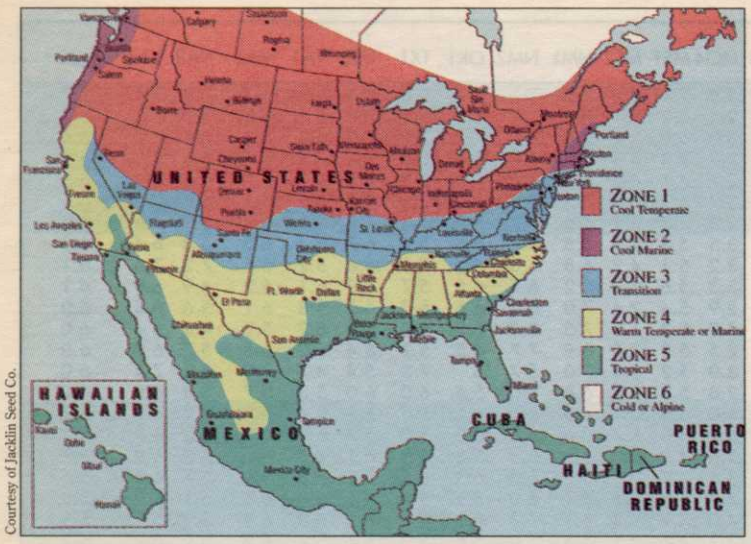


Courtesy of Jacklin Seed Co.

*This map (at left) shows the turfgrass-growing zones in the United States.*

# New British technology makes Bermuda overseeding possible

SOLVANG, Calif. — Creating protected subsurface seed pockets is the secret to successfully overseeding a new generation seeded Bermudagrass, according to a superintendent who has done so.

Scott Buley, who successfully overseeded fairways at The Alisal Guest Ranch here, said, "The key is to precisely place the seed at a regulated depth to control moisture and protect the young emerging seedling from play, golf cart and maintenance equipment traffic, and desiccating wind."

Buley, the director of golf maintenance at the two-course facility, has experimented the last three years with several techniques to fill in a uniform warm-season grass base in this transition zone area.

At the 40-year-old Alisal course, his challenge was to grow Bermudagrass where kikuyugrass had not yet spread. To complicate matters, Bermudagrass must be seeded in warm weather — June through August — at the height of summer play. So Buley had to overseed while maintaining play.

With mild to warm spring and summer temperatures, the overseeded ryegrass fairways held up well until midsummer. With summer temperatures fluctuating from the 50s to over 90 degrees, kikuyugrass islands thatched up; poa annua burned out; and the ryegrass transition suffered.

Buley's normal fall ryegrass overseeding program provided a good fairway surface until mid-July. Warmer temperatures gave the more aggressive kikuyugrass the growing advantage, and it thatched up unevenly amidst cool-season grasses, perennial ryegrass and poa annua. This stand of all three grasses was difficult to water and verticut uniformly, and cultural practices differed for all three.

USGA Green Section agronomists Larry Gilhuly, Paul Vermeulen and Pat Gross recommended overseeding with Bermudagrass.

Buley decided on one type for its drought tolerance and ability to hold up at fairway heights under heavy wear conditions.

Because few turf managers had successfully seeded the new generation Bermudagrass into existing stands of turf, Buley first tried implementing his system for overseeding winter ryegrass.

But it was difficult to maintain correct seed rates with the finer Bermudagrass seed in the seeder slicers.

Maintaining play during overseeding was difficult as the Bermudagrass seed needed to be uniformly moist through germination, while golfers wanted drier playing conditions. Golf carts sealed and compacted the surface when the soil was moist enough for germination to take place.

In hot weather, seeder slits tended to split open, desiccating seed and/or seedlings if the ground was allowed to dry at all. Finally, any seed that entered aeration holes greater than 1/2-inch deep failed to emerge or was buried as seed holes shut.

Buley seeded a practice tee and trial plots on fairways around the course during this first experimental year. Results were

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# Bermudagrass overseeding made possible

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generally disappointing, but he did notice that where the plug holes were shallower due to hard ground, the results were better.

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In the spring of 1991, Buley visited the Sports Turf Research Institute and Royal Birkdale Golf Links in England and observed an aerifying machine that he, too, had recently bought.

The machines, Sisis Varicore aerators, were equipped with an aeration tine used for thatching prior to overseeding. It used a 7/8ths-inch-diameter "jumbo thatching tine" that pulls a shallow plug, 1/2-inch deep, on extremely close spacings.

The cam-driven aerifier creates shallow holes with perfectly vertical sidewalls, so they don't break down as fast as those made by conventional rolling aerifiers, Buley said.

In June 1992, he experimented with planting Bermudagrass, using several different aerifiers and seeders. Only the Varicore left a consistent light blue polka-dot pattern of thriving Bermudagrass. Wherever he had aerified deeper, the stand was absent, and where it was shallower, the stand was thin.

The best combination seemed to be a two- by two-inch to two- by one-inch spacing, 3/4-inch deep, he said.

After "thatching" with the Varicore to this depth, the plugs and thatch were ground up with a reel mower which put about 1/4-inch of loosened soil/thatch mixture back into the aeration holes. The Bermudagrass seed was broadcast and/or spike seeded over the top of these holes, placing it 1/2-inch deep.

Buley found that plug holes should be farther apart in a sandy soil than in a clay soil, due to varying soil strengths to maintain a strong seed pocket side-wall. The 7/8-inch-diameter seed pocket also seems to reduce competition from already established grasses.

Similar techniques have attained excellent results when overseeding creeping bentgrass into greens that had a high percentage of poa annua.

Greens were core aerated and sand top dressed before seeding with spikeseeders and/or slicers.

After completing the greens overseeding, the maintenance crew overseeded all fairways in late August and early September.

In October "a superb stand of Bermudagrass covered all 18 fairways," Buley said. "These fairways were then carefully overseeded with ryegrass in November. Spikeseeders were used to avoid thatching out the tender young Bermudagrass seedlings."

Based on the results at the original course, golf course architects Jack Daray and Steve Halsey approved planting The Alisal's new River Course with the Bermudagrass.

The late-summer seeding was accomplished by broadcasting the Bermudagrass and following it up with a pass of perennial ryegrass using a spiker seeder. This served to lightly cover the Bermudagrass and put up a thin initial stand of ryegrass that acted as a nurse-crop for the Bermudagrass.

It reduced erosion, quickly stabilized the seedbed surface, and made it much easier to maintain adequate moisture throughout germination of the Bermudagrass seed.

*Superintendent Scott Buley said this Bermudagrass seeding system was adapted from British bentgrass technology he saw used at St. Andrews, Royal Birkdale, Wimbledon's grass tennis courts and Wembley National Soccer Stadium. It is also used in cool-season grass putting greens and fairway conversions from poa annua mixes to creeping bentgrass.*

The Bermudagrass-ryegrass mix worked well. The two grasses filled in, and the Bermudagrass density showed up in strength when it went into fall dormancy, Buley said.

Buley said his River Course superintendent, Mike Scott, then successfully spike-seeded additional ryegrass over the Bermudagrass.

Their crew now use a far finer spike seeder and specially adapted autoseeder-slicer in conjunction with the jumbo tines.

Buley said many turf managers have gotten new generation seeded Bermudagrass varieties up in overseeding situations, only to have them die out soon afterward.

One brand now states on all labels that the seed must not be covered more than 1/4 inch and that moisture must be adequate through germination, but should be cut back after seedlings emerge.