

**Figure 4.** Establishment rate of FLoraTeX bermudagrass (90% cover on right) was 10 times greater than that of Tifgreen bermudagrass (9% cover on left). Plots are two months old after being established from a single 6-inch pot that was planted in center of each 9x14.5-foot plot. Fertilization rate was 0.5 pounds of nitrogen per 1000 square feet per week.

## Seedheads and nitrogen response on FLoraTeX bermudagrass

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**F**loraTeX® bermudagrass was jointly released in 1992 by the Florida and Texas Agricultural Experiment Stations. FLoraTeX™ is a low maintenance bermudagrass for cemeteries, golf courses, lawns, parks, roadsides, and sports turfs in warm-humid and warm-semiarid climatic regions of the United States. Its merits and limitations are summarized as follows:

### Merits

- Widely adapted and produces acceptable turf quality throughout the warm-humid and warm-semiarid regions of the southern United States especially under low maintenance inputs.
- Widely adapted to soil pH especially on alkaline soils.
- Very low nitrogen requirements due to superior nitrogen stress tolerance.
- Excellent drought resistance and dehydration avoidance.
- Superior rooting depth and mass.
- Excellent fall low temperature color retention.
- Very early spring greenup.
- Good wear tolerance similar to Tifgreen and Arizona Common.
- Resistant to bermudagrass stunt mite.
- Tolerant to the short winged mole cricket.
- Tolerant to lance and spiral nematodes.
- Least affected by dollar spot under low nitrogen stress.
- Can be identified by its starch gel electrophoresis banding pattern aconitase.

## Limitations

- Prolific seedhead producer at certain times of the year.
- Produces viable seed which may contaminate turf with off types.
- Must be vegetatively propagated by plugs, sod, or sprigs.
- Lacks cold hardiness.
- Poor shade adaptation which is a characteristic of all bermudagrass cultivars.

These characteristics should make it ideally suited for golf course fairways and roughs, yet Florida golf course superintendents have shown little interest in this new cultivar. Many have expressed concern about its seedhead problem and its unknown response to *high* rather than *low* nitrogen fertilization. Are these legitimate concerns? Indeed they are. Additional discussion on both issues may, perhaps, minimize some of these concerns.

## Seedheads

FloraTeX® does indeed produce seedheads, especially in May and June of most years, and if pollinated with a different pollen source, FloraTeX® will set viable seed. It should be emphasized that appearance of seedheads does not imply concurrent viable seed! It normally takes two to three weeks *after* pollination for viable seed maturation. Hence seedhead production in FloraTeX® may be controlled - not eliminated - with timely mowing.

In other grasses, it is known that nitrogen fertilizer stimulates vegetative growth and concurrently suppresses reproductive growth. During the 1994 growing season at Gainesville, FL, supplemental nitrogen was applied to FLoraTeX® at rates of 0, 0.25, 0.5, 0.75, or 1.0 pounds per 1000 square feet on monthly intervals. FloraTeX® was responsive to nitrogen fertilization (Fig. 1). Turf quality increased 57% at a rate of 2.7 times per unit of nitrogen from a turf quality score of 5.1 on plots receiving no supplemental nitrogen up to a maximum turf quality score of 8.0 at the highest nitrogen rate of one pound per 1000 square feet per growing month (Fig. 2). Concurrently, seedheads decreased 65% from 66 seedheads per square foot to a low of 23 seedheads per square foot on plots receiving 0 or 1.0 pound of nitrogen

per 1000 square feet per growing month, respectively. High rates of nitrogen are not recommended as a control measure for seedheads in this grass, but rather, application of nitrogen fertilizer should be timed with maximum seedhead production which is in May or June.

Considerable effort by various seed companies is currently being devoted to development of seed-propagated bermudagrass cultivars. We presently have seeded bermudagrasses under test at Gainesville, Fla. After two years of study, the Sundance cultivar marketed by Lesco, Inc., had turf quality equal to that of Tifgreen and Tifway bermudagrass. If the golf course superin-

tendent of today is interested in the new grasses for tomorrow, improved seed-propagated bermudagrass cultivars are just on the horizon. In this light, as long as the wind blows and birds fly, we will always have a potential problem of viable seed contamination in our bermudagrass turfs.

## Nitrogen Response

As illustrated in Figures 1 and 2, FloraTeX® bermudagrass was very responsive to supplemental nitrogen fertilization. This is further illustrated in Figure 3. As expected, at low rates of nitrogen fertilization, FloraTeX® was superior to Tifway bermudagrass in turf

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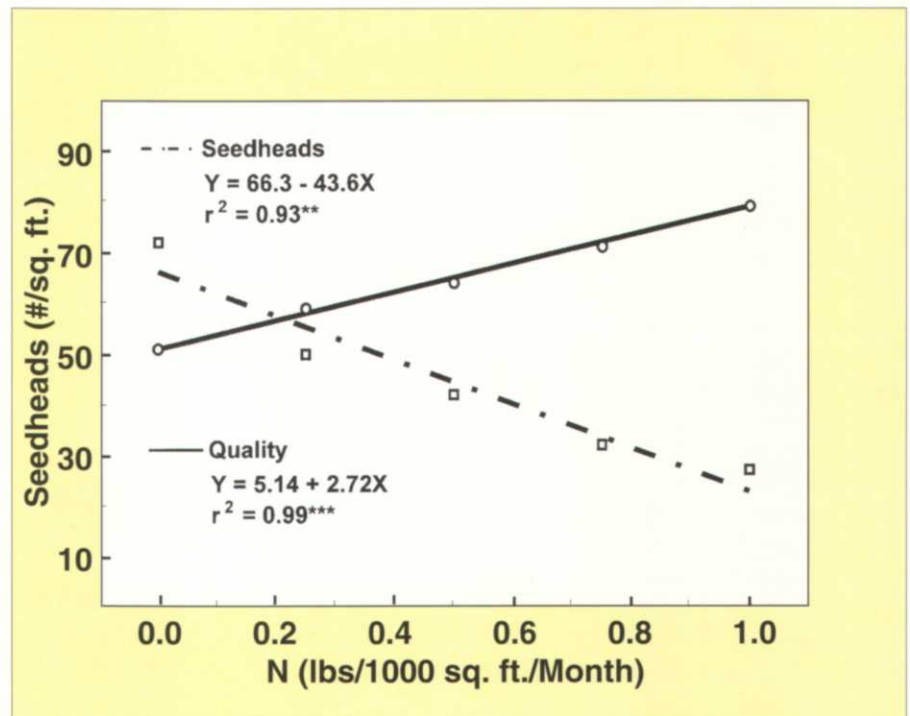


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**Figure 1.** Response of FloraTeX bermudagrass to monthly applications of supplemental nitrogen on seedhead suppression and turf quality. Plot on left received 1.0 pound of nitrogen per 1000 square feet per month from ammonium sulfate compared to center plot which received no supplemental fertilization.

quality. At high rates of nitrogen fertilization, Tifway bermudagrass produced a maximum turf quality score of 8.0 at a nitrogen rate of 0.9 pounds per 1000 square feet and then *declined!* On the other hand, turf quality scores in FloraTeX® increased 1.03 per unit of nitrogen application to its maximum turf quality score of 8.0 at a nitrogen rate of 1.0 pound per 1000 square feet, yet, turf quality scores *continued to increase!* What this actually means is that Tifway bermudagrass is much more nitrogen dependent than FloraTeX®, especially at low nitrogen nutrition. FloraTeX®, when fertilized according to our recommendation with a single application of one pound of nitrogen per 1000 square feet in the spring and no additional supplemental nitrogen throughout the growing season, had a turf quality score of 7.0 out of a possible score of 9.0; whereas, Tifway bermudagrass required 0.5 pound of nitrogen per 1000 square feet per growing month to produce turf of equal quality. Stated another way, Tifway bermudagrass required 3.0 pounds of nitrogen per 1000



**Figure 2.** Seasonal average influence of monthly applications of supplemental nitrogen on seedhead suppression and turf quality of FloraTeX bermudagrass at Gainesville, Fla. in 1994.

square feet per year (6-month growing season) to produce a turf quality score of 7.0. this quality rating was equal to that of FloraTeX® bermudagrass with no supplemental nitrogen. At the highest monthly nitrogen rate of 1.0 pound per 1000 square feet, turf quality scores of FloraTeX® and Tifway bermudagrass were equal at 8.0. From this three year study, we concluded that FloraTeX® bermudagrass was superior to Tifway bermudagrass at low nitrogen levels, but both cultivars were equal in turf quality when maintained under a high nitrogen fertility program.

Under high nitrogen fertilization, FloraTeX® bermudagrass had the fastest rate of ground cover establishment when compared to 35 other experimental bermudagrass lines. In two months after planting, FloraTeX® produced 90% ground cover compared to Tifgreen which produced only 9% ground cover under the same conditions (Fig. 4). All grasses were fertilized weekly at a rate on 0.5 pounds of nitrogen per 1000 square feet/

So what does all of this mean? It simply points out that no turfgrass cultivar is perfect for all uses. Each has its own

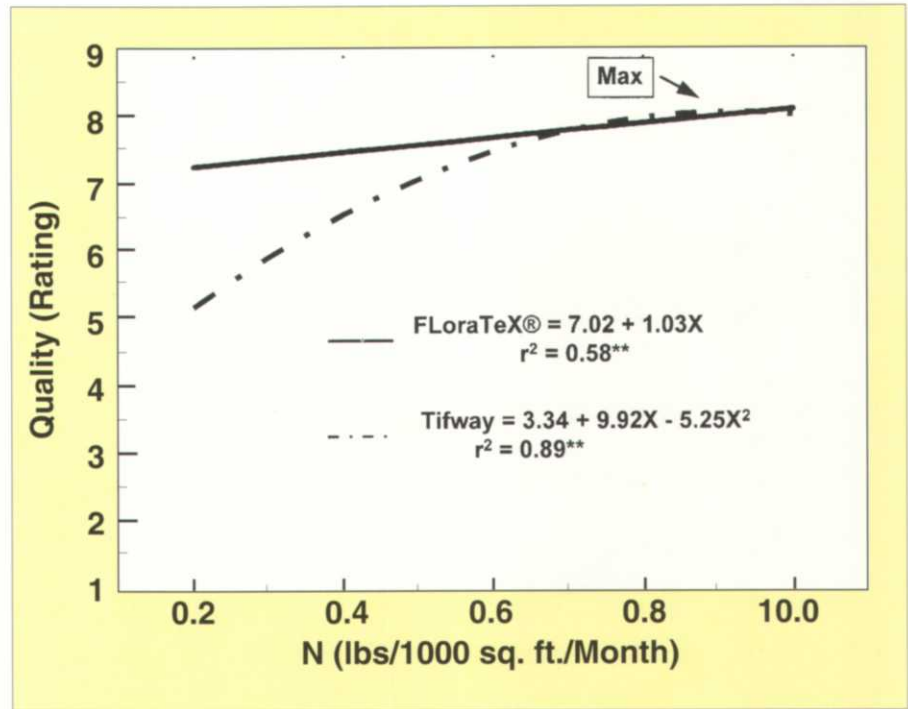


Figure 3. Average turf quality response of FloraTeX and Tifway bermudagrass cultivars to monthly nitrogen fertilization at Gainesville, Fla. from 1978 to 1980.

unique advantages as well as some disadvantages, and so it is with FloraTex® bermudagrass. How do you know if

FloraTeX® is a bermudagrass cultivar for you? You may never know unless you try it.

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