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# MS-Choice, MS-Express, and MS-Pride: Three New Turf-type Bermudagrasses

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## Introduction

In 1991, the Mississippi Agricultural and Forestry Experiment Station concluded 11 years of research and released for distribution three new and improved turf-type bermudagrasses. These grasses were developed for the citizens of Mississippi to enhance the quality of lawns, golf courses, and sports turf facilities. All three bermudagrasses are now commercially available and can be purchased from members of the Mississippi Sod Producers Association.

**MS-Choice** is a very dark green, compact, leafy, prostrate turf for use on sports fields, home lawns, and golf tees and fairways.

**MS-Express** is a medium green, robust, leafy, compressed turf for use on golf and tennis greens.

**MS-Pride** is a dark green, dense, leafy, upright turf for use on home lawns, and on golf tees and fairways (Krans et al., 1995 a, b, c).

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## MS-Choice Bermudagrass

### Merits

- Compact canopy
- Few to no seedheads
- Very dark green color
- No scalping under normal mowing
- Enhanced shade tolerance compared to other bermudagrasses
- Highly rated in turf performance and quality

### Limitations

- Thatch may accumulate under high fertility
- Slight susceptibility to dollarspot and mites
- Slow green-up in the spring if thatch accumulation is excessive

### Recommended Use

- Sports fields
- Home lawns

### Cultural recommendations

- Mowing height ½ to 2 inches
- Nitrogen 2 to 6 pounds per 1,000 square feet per year
- Dethatching once every 2 years

## A Characterization of MS-Choice Bermudagrass

MS-Choice (experimental name MSB-30) is a high quality bermudagrass turf developed for sports fields, home lawns, and golf tees and fairways. This new turf-type bermudagrass has unique and desirable characteristics that are improvements over other bermudagrasses. Desirable features of MS-Choice include a thick, leafy, and closed canopy of leaves that are tightly packed near the soil surface, few to no seedheads, a natural dark green color, little to no tendency to scalp, and enhanced shade tolerance. MS-Choice's compact canopy gives this grass a cushion feel when walked upon.

First-time observers of an MS-Choice turf often comment "This grass feels like walking on carpet," a statement usually reserved for only zoysiagrass turfs.

Because of this canopy, sports team players and coaches will notice a thick feel, high resiliency, improved footing, and excellent durability of MS-Choice. Because of few to no seedheads, mowing simply to remove seedheads will never be required with this grass and pollen-sensitive people will be relieved to have a "pollen-free" lawn. The dark green color of MS-Choice will allow homeowners to apply less nitrogen fertilization, while maintaining a desirable dark green turf. Less nitrogen fertilization means less mowing a characteristic nearly all homeowners will appreciate and enjoy.

Scalping turf after an interruption in mowing due to a mower breakdown, family vacation, or just rainy weather can be an annoying problem. MS-Choice minimizes this problem because its canopy tolerates infrequent mowing and shows little to no scalping damage.

While not recommended as a turf for heavy shade, MS-Choice has been verified in nationwide bermudagrass test conducted at 21 sites in 13 states. The results of this test ranked MS-Choice sixth in overall turfgrass quality among 28 cultivars tested (Table 1). This high rating clearly shows that MS-Choice is a high-quality turf with a broad range of characteristics.

Leaves of MS-Choice are a medium width and slightly coarser than 'Tifway,' but finer than 'Arizona Common.' Under medium levels of disease incidence, MS-Choice exhibited good resistance to leafspot but was somewhat susceptible to dollarspot and mites.

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## MS-Express Bermudagrass

### Merits

- Enhanced rhizome density
- Rapid vegetative establishment
- Robust shoot growth
- Fine leaf texture
- Early spring green-up
- Highly rated in turf performance and quality

### Limitations

- Intolerant to long-term mowing heights below 3/16-inch

**Recommended Use**

- Putting greens
- Bowling greens
- Tennis Courts

### Cultural Recommendations

- Mowing height 3/16- to 3/4 inch
- Nitrogen 6 to 12 pounds per 1,000 square feet per year
- Dethatching once each year

### A Characterization of MS-Express Bermudagrass

MS-Express (experimental name MSB-20) is a high-quality bermudagrass turf developed for golf putting greens. This grass has novel and desirable characteristics that make it an improvement over other bermudagrasses.

One of MS-Express' most desirable characteristics is high rhizome density. In tests conducted at Mississippi State University, MS-Express displayed the highest rhizome density of 28 cultivars evaluated. This characteristic provides MS-Express with a large reservoir of underground growing points. After harsh winters, excessive competition from winter overseeded turfs, or recuperation from traffic stress, MS-Express will have an advantage in rate of turf recovery.

MS-Express has robust growth. In turf trials, MS-Express had the highest establishment rate 4 to 5 weeks after planting compared to 27 other bermudagrasses tested.

Additional characteristics of MS-Express include fine leaf texture, early spring green-up, and high shoot density. The fine leaf texture of MS-Express gives this grass good putting green qualities. The early spring green-up of MS-Express provides for early season golf and quick transition back to bermudagrass following winter dormancy. The high shoot density of MS- Express provides for excellent surface uniformity and smoothness that improves ball roll.

MS-Express performance was evaluated in tests conducted at 21 sites in 13 states. It ranked fourth overall in quality among 28 cultivars tested (Table 1). This ranking indicates that MS- Express is a high quality turf. Seedhead density and color of MS-Express were rated similar to 'Tifgreen' bermudagrass.

The turf morphology of MS-Express is a nondwarf type. This plant form limits the low mowing height of MS-Express such that it cannot be continuously mowed below 3/16-inch. MS- Express will tolerate low mowing down to 5/32-inch or 1/8-inch cutting heights, but only for short time periods (1 to 2 weeks).

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## MS-Pride Bermudagrass

### Merits

- Enhances sod strength
- Dense upright shoot canopy
- Prolonged fall color
- Improved resistance to leafspot and dollar spot diseases
- Top-rated turf performance and quality

### Limitations

- Slow to establish compared to other bermudagrasses

### Recommended Use

- Golf tees and fairways
- Sports fields
- Home lawns

### Cultural Recommendations

- Mowing height ½ to 2 inches
- Nitrogen 4 to 6 pounds per 1,000 square feet per year
- Dethatching once every 3 years

## A Characterization of MS-Pride Bermudagrass

MS-Pride (experimental name MSB-10) is a high-quality bermudagrass turfgrass developed for home lawns and golf tees and fairways. This new turf-type bermudagrass has unique and desirable characteristics, including enhanced sod strength, dense upright canopy, prolonged fall color, and improved disease resistance to leafspot and dollarspot, that are improvements over other bermudagrass cultivars.

In research conducted at Mississippi State University, MS-Pride had the highest sod strength value among 28 bermudagrasses tested. Sod strength is an important factor for sod farmers and landscape contractors during sod handling. Sod must be handled at least twice, once during harvest and again during installation.

The high shoot density of this grass makes it competitive against weed encroachment and gives it a thick, high-quality appearance. Winter dormancy of bermudagrass starts as a slow deterioration of green color followed by complete browing of the leaves. The prolonged fall color of MS-Pride will lengthen its natural green appeal.

Disease outbreaks generally require some level of fungicide applications that are costly and time-consuming. The improved disease resistance of MS-Pride should reduce the need for fungicides in the cultural management of this grass.

In a bermudagrass evaluation test conducted at 21 sites in 13 states, MS-Pride was tied in a first-place ranking with Tifway II in overall turfgrass quality among 28 cultivars tested (Table 1). This top ranked performance indicates that MS-Pride is a high quality turf. MS-Pride produces fewer seedheads than "Tifgreen" or MS-Express.

## Summary

Three improved turf bermudagrasses were released from Mississippi State University in 1991. These cultivars were tested across a nationwide test at 21 sites in 13 states.

MS-Choice is a very dark green, medium-textured cultivar recommended for golf tees and fairways, sports fields, and home lawns. Some of the features which make MS-Choice attractive include few to no seedheads, very dark green color, compact canopy, no scalping under normal mowing, low mowing frequency, and enhanced shade tolerance compared to other bermudagrasses.

MS-Express is a medium green, fine-textured cultivar recommended for closely mowed areas such as putting greens, bowling greens, or tennis courts. Qualities of MS-Express include a rapid rate of establishment, enhanced rhizome density, and early spring green-up.

MS-Pride is a dark green, fine- to medium-textured cultivar recommended for home lawns and golf tees and fairways. Desirable qualities of this grass include excellent sod strength, high shoot and rhizome density, improved fall color retention, and enhanced disease resistance.

All three of these bermudagrass cultivars require vegetative establishment from plugs, sprigs, or sod because they lack viable seed production. To maintain genetic purity, these cultivars will only be marketed as certified planting stock. Certified production of planting stock will be monitored by the Mississippi Seed Improvement Association. Breeder and Foundation fields are maintained by the Mississippi Agricultural and Forestry Experiment Station. Production fields must be fumigated before establishment and must also pass periodic purity inspections. Presently these are the most rigid standards of any sod certification program for warm-season turfgrasses. Any fields failing to pass inspection cannot be marketed as MS bermudagrass.

MS-Pride, MS-Express, and MS-Choice are marketed exclusively by the Mississippi Sod Producers Association. To purchase these grasses, contact Mississippi Grass Nursery, Hattiesburg, MS, phone (601) 268-8888, or Rainey Sod Farm, Corinth, MS, phone (601) 287- 2675. Further inquiries will be welcome by the Mississippi Agricultural and Forestry Experiment Station.

## Literature Cited

Krans, J.V., H.W. Philley, J.M. Goatley, Jr., M. Tomaso-Peterson, and V.L. Maddox, 1995. Registration of MS-Choice bermudagrass. Crop Sci.35:1506.

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**Table 1. Mean Turfgrass quality ratings of Bermudagrass cultivars at 21 locations in the United States, 1986-91 data [a]**

| Cultivar | AR1 | AZ1 | CA2 | CA3 | FL1 | KS1 | KS2 | LA1 | LA2 | MD1 | M04 | MS1 | MS2 | NM1 | NM2 | OK1 | TX1 | UB1 | VA1 | VA2 | VA4 | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TIFWAY II | 7.9[b] | 7.1 | 6.5 | 6.0 | 6.6 | 6.9 | 6.9 | 7.6 | 7.3 | 6.8 | 3.0 | 7.1 | 3.8 | 7.5 | 7.7 | 6.7 | 8.0 | 7.0 | 6.2 | 6.7 | 7.2 | 6.7 |
| **MS-PRIDE** | 8.0 | 7.1 | 6.7 | 5.7 | 6.7 | 7.0 | 6.9 | 7.6 | 7.2 | 6.8 | 2.5 | 7.2 | 4.1 | 7.2 | 7.7 | 6.9 | 7.7 | 7.0 | 6.1 | 6.7 | 7.1 | 6.7 |
| TIFWAY (419) | 7.8 | 7.2 | 6.5 | 5.8 | 6.6 | 6.8 | 6.7 | 7.6 | 7.4 | 6.8 | 3.0 | 6.9 | 3.7 | 7.0 | 8.0 | 7.1 | 7.5 | 7.0 | 6.3 | 6.8 | 7.1 | 6.6 |
| **MS-EXPRESS** | 7.5 | 6.5 | 5.8 | 5.6 | 6.2 | 7.0 | 6.6 | 7.4 | 8.3 | 6.9 | 2.3 | 7.4 | 4.5 | 6.7 | 8.0 | 6.8 | 8.0 | 7.2 | 6.4 | 6.8 | 6.9 | 6.6 |
| TIFGREEN (328) | 7.1 | 6.6 | 5.7 | 5.4 | 6.1 | 7.1 | 6.6 | 7.4 | 8.0 | 6.2 | 2.7 | 7.1 | 4.3 | 6.3 | 7.0 | 6.8 | 8.3 | 7.4 | 6.2 | 6.7 | 7.0 | 6.5 |
| **MS-CHOICE** | 6.9 | 5.9 | 6.3 | 5.4 | 6.1 | 7.0 | 7.0 | 7.0 | 7.1 | 6.5 | 3.7 | 6.1 | 4.9 | 7.3 | 7.0 | 6.9 | 7.3 | 6.8 | 5.9 | 6.7 | 7.3 | 6.4 |
| NM 43 | 7.2 | 6.5 | 5.8 | 5.4 | 6.3 | 6.8 | 6.4 | 7.7 | 7.9 | 6.5 | 2.3 | 7.2 | 3.9 | 6.6 | 7.7 | 6.8 | 7.3 | 7.4 | 6.2 | 6.8 | 6.7 | 6.4 |
| A-29 | 6.9 | 6.5 | 5.7 | 5.5 | 5.7 | 7.0 | 8.1 | 7.3 | 7.2 | 6.2 | 3.5 | 5.4 | 2.9 | 6.5 | 6.7 | 6.6 | 5.8 | 6.7 | 6.4 | 6.2 | 6.2 | 6.1 |
| TUFCOTE | 7.3 | 6.3 | 5.5 | 5.5 | 6.3 | 7.1 | 6.6 | 7.3 | 7.2 | 5.7 | 3.3 | 5.6 | 3.4 | 6.2 | 6.7 | 6.5 | 5.7 | 6.9 | 6.1 | 6.2 | 6.4 | 6.1 |
| MIDFIELD | 6.8 | 5.8 | 5.8 | 5.9 | 5.8 | 6.7 | 8.3 | 6.7 | 6.9 | 6.3 | 3.9 | 5.3 | 1.9 | 7.5 | 8.0 | 6.3 | 6.0 | 6.5 | 6.2 | 5.8 | 5.9 | 6.1 |
| MIDLAWN | 7.0 | 6.3 | 5.6 | 5.9 | 5.7 | 7.1 | 8.2 | 6.9 | 6.9 | 6.2 | 2.9 | 5.4 | 2.4 | 7.0 | 6.0 | 6.6 | 6.0 | 6.5 | 5.8 | 6.1 | 6.2 | 6.0 |
| NM 471 | 7.0 | 6.3 | 6.3 | 5.3 | 6.7 | 5.0 | 6.0 | 7.3 | 6.9 | 5.8 | 3.2 | 5.1 | 4.2 | 6.8 | 6.0 | 6.2 | 7.3 | 5.6 | 5.2 | 6.6 | 7.3 | 6.0 |
| TEXTURF 10 | 7.1 | 5.4 | 5.8 | 5.3 | 5.9 | 7.0 | 6.9 | 6.7 | 6.9 | 5.6 | 2.5 | 5.3 | 3.5 | 6.8 | 7.7 | 6.5 | 5.2 | 6.4 | 6.2 | 6.5 | 6.6 | 6.0 |
| CT-23 | 6.4 | 6.9 | 5.7 | 5.7 | 5.7 | 6.2 | 6.7 | 7.2 | 6.8 | 6.6 | 2.8 | 5.9 | 2.5 | 6.6 | 8.0 | 5.6 | 6.0 | 6.0 | 5.3 | 5.7 | 6.6 | 5.9 |
| NM 507 | 7.0 | 6.6 | 6.3 | 5.2 | 6.9 | 4.4 | 6.0 | 7.3 | 7.0 | 5.6 | 3.0 | 5.2 | 3.4 | 7.0 | 5.7 | 6.3 | 7.2 | 5.4 | 4.7 | 7.0 | 7.2 | 5.9 |
| MIDIRON | 6.4 | 5.9 | 5.9 | 5.3 | 5.8 | 6.7 | 7.8 | 6.7 | 6.3 | 5.7 | 4.0 | 4.9 | 2.1 | 6.5 | 5.0 | 6.1 | 5.5 | 6.1 | 5.4 | 5.7 | 6.2 | 5.7 |
| FB-119 | 6.6 | 5.9 | 5.3 | 4.9 | 6.2 | 5.3 | 5.5 | 7.4 | 7.3 | 6.1 | 3.9 | 5.0 | 3.7 | 5.6 | 5.0 | 5.0 | 5.8 | 5.7 | 6.1 | 6.5 | 6.7 | 5.7 |
| NM 375 | 6.7 | 5.1 | 5.4 | 5.3 | 6.6 | 5.7 | 6.4 | 6.9 | 6.9 | 5.4 | 3.0 | 4.9 | 3.0 | 6.1 | 6.3 | 5.8 | 6.3 | 6.1 | 4.8 | 6.0 | 6.6 | 5.7 |
| RS-1 | 5.9 | 5.1 | 5.4 | 5.5 | 5.3 | 6.7 | 6.8 | 6.2 | 6.6 | 5.8 | 3.6 | 4.7 | 2.8 | 5.2 | 6.0 | 6.3 | 6.0 | 5.8 | 5.9 | 5.9 | 6.2 | 5.6 |
| NM 72 | 6.0 | 5.8 | 5.2 | 4.8 | 6.4 | 4.6 | 5.3 | 6.9 | 6.3 | 5.7 | 3.2 | 5.0 | 3.6 | 5.1 | 6.0 | 5.9 | 5.8 | 5.5 | 5.0 | 6.5 | 6.7 | 5.5 |
| VAMONT | 5.5 | 4.8 | 5.2 | 5.4 | 5.7 | 6.2 | 5.7 | 6.7 | 7.0 | 5.6 | 4.0 | 4.4 | 3.3 | 5.1 | 4.7 | 6.2 | 5.2 | 6.1 | 6.0 | 6.2 | 5.9 | 5.5 |
| NMS 3 | 6.0 | 6.0 | 5.3 | 4.8 | 5.7 | 5.1 | 5.1 | 6.9 | 6.7 | 5.8 | 3.2 | 4.6 | 2.7 | 5.5 | 5.0 | 5.6 | 5.2 | 5.7 | 5.4 | 6.2 | 6.6 | 5.4 |
| NMS 4 | 6.1 | 5.4 | 5.3 | 4.7 | 6.0 | 5.5 | 5.4 | 6.6 | 6.4 | 5.5 | 3.3 | 4.0 | 2.8 | 5.5 | 3.7 | 5.7 | 4.7 | 5.7 | 5.4 | 6.0 | 6.6 | 5.2 |
| NUMEX-SAHARA | 5.4 | 4.7 | 4.9 | 4.8 | 5.3 | 5.4 | 5.1 | 6.4 | 5.8 | 5.3 | 2.7 | 3.7 | 2.7 | 4.7 | 4.7 | 5.5 | 4.5 | 5.4 | 4.9 | 5.4 | 6.0 | 4.9 |
| NMS 2 | 5.2 | 4.1 | 4.8 | 4.9 | 4.9 | 5.2 | 4.5 | 6.1 | 6.6 | 5.9 | 3.8 | 3.7 | 2.9 | 4.6 | 4.7 | 5.1 | 4.2 | 5.0 | 4.7 | 5.5 | 5.8 | 4.9 |
| NMS 14 | 5.3 | 4.3 | 4.9 | 4.8 | 5.1 | 5.4 | 4.9 | 6.0 | 6.5 | 5.3 | 3.7 | 3.7 | 2.7 | 4.1 | 3.3 | 5.1 | 4.0 | 4.6 | 4.9 | 5.2 | 5.6 | 4.7 |
| GUYMON | 4.8 | 5.2 | 4.5 | 4.6 | 5.3 | 5.2 | 5.9 | 5.7 | 5.8 | 4.8 | 3.6 | 3.1 | 1.7 | 5.2 | 1.7 | 5.2 | 3.2 | 5.1 | 4.0 | 4.7 | 4.3 | 4.4 |
| ARIZONA COMMON | 5.2 | 3.9 | 4.7 | 4.7 | 5.0 | 4.6 | 4.8 | 6.0 | 6.2 | 4.3 | 2.8 | 3.6 | 2.5 | 3.8 | 2.7 | 4.9 | 3.5 | 4.6 | 4.1 | 4.8 | 5.0 | 4.4 |
| LSD VALUE (0.05) | 0.5 | 1.0 | 0.3 | 0.4 | 0.7 | 0.7 | 1.6 | 0.5 | 0.8 | 0.6 | 2.6 | 0.4 | 0.6 | 1.0 | 1.9 | 0.8 | 0.9 | 0.4 | 0.6 | 0.5 | 0.6 | 0.2 |

[a]Reproduced from National Bermudagrass Test 1986. Final report. National Turfgrass Evaluation Program, USDA, NTEP No. 93-1.
[b]Turfgrass quality ratings 1:9; 9 = ideal turf.