# NuMex Sahara — A New Seed-Propagated Bermudagrass

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NuMEX Sahara (formerly designated as NMS-1 and NuMex S-1) is a seed-propagated bermudagrass released by the New Mexico Agricultural Experiment Station, in February of 1987, funded by the United States Golf Association.

The initial crossing of the eight clones providing the genetic background of NuMex Sahara was made in 1980. These were selected on the basis of seed yield and the performance of their progeny for such attributes as shorter internode length, darker green color, greater density, reduced regrowth after clipping, and resistance to a bermudagrass stunt mite. Plant selections were made throughout the development, both in the greenhouse and in the field. Although no systematic method was used to provide resistance to drought stress, some field selections were made in soil moisture stressed environments.

DURING the early years of this breeding project, many reservations and questions arose about developing improved seed-propagated bermudagrasses. At that time, many felt a seeded bermudagrass was not necessary, since so many excellent vegetative varieties were available. It was decided an improved seeded cultivar was needed for large areas (such as golf course fairways) where seeding is the best method of establishment. It was obvious common bermudagrass offered many good-looking turf-type plants, but it was not known if the desirable traits would be easily passed on to offspring in a seed-propagated variety. Therefore, genetic studies were aimed at determining the breeding behavior of several important traits. These studies led to using multiple cycles of recurrent phenotypic selection for both seed production and turf characteristics.

After the official release of NuMex Sahara, an exclusive release was granted by the New Mexico Crop Improvement Association (NMCIA) to Farmers Marketing Corp., of Phoenix, Arizona. This company agreed to handle all classes of certified seed, and pay a royalty to the NMCIA for distribution after expenses to NMSU and the USGA.

Farmers Marketing Corp. established a breeder field of NuMex Sahara in early July of 1987, harvested a winter seed crop in 1987-88, and a good summer seed crop in 1988. Over 100 acres of foundation fields have been established in Arizona and California, and a limited supply of commercial seed is expected to be available in 1989. Considerable care has been exercised to maintain genetic purity. Over 20,000 plants were planted in the isolated breeder field, which was followed by careful removal of off-type plants.

Plant Variety Protection (PVP) was applied for in 1987, and granted by PVP certificate no. 88800010 on March 11, 1988.

*Dr. Baltensperger shows improved summer color, density, and uniformity on the NuMex Sahara plot vs. common plot.*

NuMEX SAHARA appears to have most of the desirable attributes of common bermudagrass. However, it is denser and lower growing than common, which is primarily a result of breeding for shorter internode length. This variety has been given a higher turf quality rating than common at many test locations, partially as a result of better summer color and greater density (Table 1).

In tests at NMSU, NuMex Sahara has shown less damage caused by the bermudagrass stunt mite and faster spring green-up than common. In the first year of a drought study conducted by Dr. James Beard and associates at Texas A&M University, NuMex Sahara rated high in drought avoidance (as measured by leaf firing) and drought resistance (as measured by the percentage of shoot recoveries).

Since this new variety is seed propagated, like common, seedhead production is necessary. NuMex Sahara will produce seasonal unsightly seedheads, but this will be a problem only on turf managed under low maintenance. NuMex Sahara is expected to resist winterkill slightly better than common. The seed propagated variety Guymon, however, has shown excellent cold tolerance, although it is quite coarse textured and should be considered for the colder parts of the bermudagrass growing regions.

Although NuMex Sahara is not as fine textured as many of the hybrid or vegetative propagated varieties of bermudagrass, it is less prone to scalping and thatch buildup. Because of ease and lower cost of establishment, NuMex Sahara should be acceptable for use on large areas such as golf course fairways, parks, athletic fields, and some home lawns. Because of the increased interest in seed-propagated bermudagrasses, the National Bermudagrass Test results are now being reported in separate tables, *i.e.*, vegetative cultivars and seeded cultivars. This will be helpful to those who have chosen seeding as the desired method of establishment.

NuMex Sahara should be managed using the same good cultural practices that have been successful with common and other medium-textured bermudagrasses. Although some selection pressure for nitrogen and iron efficiency was used in the development of this variety, it still requires large quantities of nitrogen fertilizer for good quality turf, especially under intensive use. Iron fertilization may also be required, particularly in the desert Southwest where iron deficiency symptoms often occur.

Low-temperature color retention in bermudagrass is notoriously poor, and NuMex Sahara shows little or no improvement. However, it is suggested that in areas of the Southwest, where winterkill is not a problem, a late summer renovation be considered. Fall color has been improved in experimental plots at NMSU, with a renovation treatment involving verticutting and scalping in mid-August, plus continued close mowing at about ½ inch or less. Hopefully, cultural experiments may soon be initiated to better determine the most desirable management practices for NuMex Sahara.

**Table 1.**
**Mean turfgrass quality ratings of three commercially available seed-propagated bermudagrasses at 14 locations in 1987.[1]**

| | Mean Turfgrass Quality Ratings[2] |
|---|---|
| NuMex Sahara | 5.0 |
| Common | 4.6 |
| Guymon | 4.4 |
| LSD 0.05 | 0.2 |

[1]Data from p. 5 of PSI No. 5 National Bermudagrass Test — 1986. Progress Report 1987. Sponsored by USDA, ARS, Beltsville Agric. Res. Center, Beltsville, Md. 20705.

[2]Rated from 1 (least desirable) to 9 (most desirable).

*Selection for shorter internode length was effective.*