THE
UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE

AND

UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

AND

NORTH DAKOTA AGRICULTURAL
EXPERIMENT STATION

AND

MINNESOTA AGRICULTURAL
EXPERIMENT STATION

ANNOUNCE THE
RELEASE OF 'DACOTAH' SWITCHGRASS

'Dacotah' switchgrass (*Panicum virgatum* L.) was collected by the USDA ARS, Mandan, ND, and was developed and evaluated in cooperation with the USDA SCS Plant Materials Center, Bismarck, ND. It was tested under the experimental designation NDG-965-98 and has been assigned the plant inventory number PI 478002. The name Dacotah was chosen to represent the area of adaptation of the new cultivar to include climates similar to North Dakota and it is jointly released with the North Dakota Agricultural Experiment Station, Fargo, ND, and the Minnesota Agricultural Experiment Station, St. Paul, MN.

Original plants of Dacotah were collected in 1935 at a site near Breien, ND. It was apparent that the plants had been surviving and growing there for several years. Annual precipitation in the area averages 15 inches per year. The collected plants were grown at the USDA ARS Northern Great Plains Research Laboratory in Mandan, ND, in comparison with other collections. After 3 generations in open pollination nurseries, 10 plants were selected for uniform plant type with good leafiness, high plant vigor and seed yields, adaptation to northern climates, and uniform green color. Seed from these 10 plants were bulked to form the accession NDG-965-98, which was much earlier maturing than other accessions, and had better adaptation to climates of northern Minnesota and North Dakota. It was not outstanding in forage yield performance, but was placed in seed increase fields by the USDA SCS and has been evaluated at farm observation sites since its original composition. No further selection has been practiced on Dacotah over the years other than natural selection for hardiness and persistence during 2 generations of bulk increase at the USDA SCS Bismarck Plant Materials Center. Three hundred plants were chosen at random from a seed increase block at the Bismarck Plant Materials Center and vegetatively established in a permanent breeders seed block at the USDA ARS Northern Great Plains Research Laboratory. Chromosome number as determined from meristematic cells from 20 individual plants was 2n=4x=36.

Dacotah is among the few cultivars to consistently produce mature seed at northern sites in North Dakota and Minnesota and will push the area of adaptation of switchgrass farther north than with presently available cultivars. Through extensive plot testing and field-scale evaluations, Dacotah appears well adapted to North Dakota and northern parts of Minnesota on sites where switchgrass is recommended. It is able to mature seed in these areas, is hardy and persistent, and *can* reproduce itself in low-maintenance stands. Its primary use will be in the Conservation Reserve Program and for grass waterways, stabilization of critical areas, and seeding in mixtures for some range situations and warm-season pastures. It may also be used for nature trails, rural beautification, and other plantings where establishment of native vegetation is an objective. Dacotah *can* be used in mixtures with other warm-season grasses such as big bluestem, indiangrass, little bluestem, and sideoats grama.

Dacotah was 27 days earlier in anthesis than 'Forestburg' at Fergus Falls, MN, for 2 years and 45 to 50 days earlier than other cultivars. Only Dacotah and 3 other cultivars produced mature seed at Fergus Falls. At Upham, ND, Dacotah usually had mature seed before other cultivars were in anthesis. The southern cultivars, 'Blackwell', 'Cave-in-Rock', and sometimes 'Pathfinder', usually never reached anthesis before fall frosts at Upham. Stand density was similar among cultivars. However, Dacotah tended to have a higher stand density at northern locations (Upham and Fergus Falls) than did cultivars originating south of these sites. Some evidence exists that Dacotah and Forestburg actually increase in stand density over time while other cultivars decrease at the northern locations. Dacotah tends to be shorter in mature plant height and have less rank growth than other cultivars. Over 18 location-years, Dacotah had the lowest forage yield among switchgrass cultivars and was usually the lowest at individual locations. Dacotah produced adequate forage at northern sites. Its early maturity, shorter height, and high density of residual vegetation provides excellent wildlife cover and nesting habitat as well as a dense sod for erosion control on drastically disturbed areas and transportation corridors.

Animal performance data have not been collected for Dacotah, but no selection pressure has been applied for quality traits and it would not be expected that Dacotah would be different from other cultivars that have not been selected for forage quality parameters. No quality problems and few problems with diseases and insects have been observed for Dacotah when grown in its area of adaptation in extensive on-farm, field-scale evaluations.

Breeder seed of Dacotah switchgrass will be maintained at the USDA ARS Northern Great Plains Research Laboratory, Mandan, ND 58554. Foundation and certified generations of seed increase beyond breeders seed are authorized. Foundation seed will be available from the USDA SCS Plant Materials Center, Bismarck, ND 58502.

Release date for publicity purposes shall be effective on the date of final signature of the release notice.

M. E. Carter APR 07 1989
Administrator Date
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