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 'BISON' BIG BLUESTEM

'Bison' big bluestem (*Andropogon gerardii* Vitman) 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-4 and has been assigned the plant inventory number PI 477994. The name Bison was chosen to signify ruggedness and adaptability of the new cultivar to climates similar to North Dakota and is jointly released with the North Dakota Agricultural Experiment Station, Fargo, ND, and the Minnesota Agricultural Experiment Station, St. Paul, MN.

Original plants of Bison were collected in 1935 on a site near Price, 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 for 3 years at the USDA ARS Northern Great Plains Research Laboratory in Mandan, ND, in comparison with about 30 other collections. Bison was selected over the other accessions because of its uniform plant type with good leafiness, high plant vigor and seed yields. It was earlier maturing than other accessions and had better adaptation to northern climates. 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 selection. No further selection has been practiced on Bison 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 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 $2n=6x=60$.

The main reason for release of Bison is its early maturity, which extends the area of adaptation of big bluestem farther north than with presently available cultivars. Through extensive plot testing and field-scale evaluations, it has been determined that Bison is well adapted to North Dakota and northern parts of Minnesota on sites where big bluestem is recommended. It is able to mature seed in these areas, is hardy and persistent, and reproduces itself in low-maintenance stands. Its primary use will be as an erosion control plant in grass waterways and stabilization of critical areas, to provide upland game bird cover and nesting, and for nature trails, rural beautification, and other plantings where establishment of native vegetation is an objective. It may also be used in the Conservation Reserve Program, for seeding in mixtures for some range situations, and for warm-season pastures.

Bison was 20 days earlier in anthesis than 'Bonilla' at Fergus Falls, MN, for 2 years and 30 to 48 days earlier than other cultivars. Only **Bison** and Bonilla produced mature seed at Fergus Falls. At Upham, ND, **Bison** usually had mature seed before other cultivars were in anthesis. The southern cultivar, 'Kaw', usually never reached anthesis before fall frosts at Upham. Stand density and mature plant height are similar among cultivars. However, **Bison** tends to have a higher stand density at northern locations (Upham and Fergus Falls) than cultivars originating south of these sites. Some evidence exists that **Bison** and Bonilla actually increase in stand density over time while other cultivars decrease at the northern locations. Over 18 location-years, **Bison** was the lowest cultivar for forage yield, but it was not significantly different from Bonilla. At Upham over 5 years, **Bison** was the second ranked cultivar indicating its ability over cultivars of southern origin to persist and maintain productivity. While high forage yields are not always possible with **Bison**, they would not be necessary nor practical in wildlife and conservation plantings.

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

Breeder seed of **Bison** big bluestem 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
United States Department of Agriculture
Agricultural Research Service
Washington, DC

3/31/89
Chief Date
United States Department of Agriculture
Soil Conservation Service
Washington, DC

2-13-89
Director Date
North Dakota Agricultural
Experiment Station
Fargo, North Dakota

2/14/89
State Conservationist Date
United States Department of Agriculture
Soil Conservation Service
Bismarck, North Dakota

2/23/89
Director Date
Minnesota Agricultural
Experiment Station
St. Paul, Minnesota

2/17/89
State Conservationist Date
United States Department of Agriculture
Soil Conservation Service
St. Paul, Minnesota