UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
WASHINGTON, D.C.
and

OKLAHOMA AGRICULTURAL EXPERIMENT STATION
STILLWATER, OKLAHOMA

and

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE
PLANT MATERIALS CENTERS
at
MANHATTAN, KANSAS
KNOX CITY, TEXAS
NACOGDOCHES, TEXAS

NOTICE OF RELEASE OF 'CHET' SAND BLUESTEM

The Agricultural Research Service (ARS), United States Department of Agriculture, the Oklahoma Agricultural Experiment Station, and the Natural Resources Conservation Service (NRCS), United States Department of Agriculture announce the naming and release of Chet sand bluestem (*Andropogon hallii* Hack.). Chet is a medium stature plant and is recommended for pasture or hay, complementary rangeland-forage production systems, soil stabilization, or reclamation of marginal croplands in the central and southern Great Plains of the United States.

Chet was derived from a big and sand bluestem collection consisting of 158 accessions received as seed from the USDA-ARS North Central Regional Plant Introduction Station in 1985. The entries of this collection were assembled by the late Dr. Kling Anderson, Kansas State University, Manhattan. Chet sand bluestem went through three polycross selection cycles.

Polycross Generation #1: Seed of the 158 entries was germinated and transplanted into a nursery that consisted of 1,048 spaced plants in the spring of 1986. These plants were visually rated for growth, regrowth, disease, and leafiness during the summers of 1986-87. Open pollinated seed was collected from 53 of the 1048 plants in the fall of 1988. Based on female fertility as estimated from percent seed set, seed purity, and seedling survival 10 of 53 1988 selections were discarded.

Polycross Generation #2: Seed from the remaining 43 plants was germinated and transplanted into an isolation nursery consisting of 1,584 spaced plants in the spring of 1989. These plants were visually rated for growth, regrowth, disease, leafiness, and plant height at anthesis during the summers of 1989-91. In the spring of 1991, inferior plants were destroyed and open pollinated seed was individually collected

from 320 plants in the fall of 1991. Seed from these plants was analyzed for purity and classified by weight into light and heavy fractions. Ninety-seven plants with seed that weighted more than the average of the lot were retained for the next generation.

Polycross Generation #3: The heavy seed fraction from the Polycross Generation #2 was planted into greenhouse pots with four seeds per pot in the spring of 1992. The most vigorous seedling per pot was used to establish the next generation. These plants were classified into short, medium, and tall groups based on the height of their maternal parent in the Polycross Generation #2. An isolation block consisting of 3,128 plants was established for medium line in the spring of 1992. In the spring of 1993, inferior plants that were either stemmy, slow to tiller, had poor regrowth, or appeared diseased were destroyed and open pollinated seed was individually collected from 69 plants in the fall of 1993. Seed from these plants was analyzed for purity and classified by weight into light and heavy fractions. Six plants with seed that weighted more than the average of the lot (and had good seedling habits) were retained to develop Chet.

Small plot field evaluations of Chet were conducted in the central and southern Great Plains in 2001-2003 at the USDA-ARS Southern Plains Range Research Station at Woodward, Oklahoma; Oklahoma State University, Perkins Research Station, Perkins, Oklahoma; and the USDA-NRCS Plant Material Centers at Manhattan, Kansas; Knox City, Texas; and Nacogdoches, Texas. Averaged over these locations, the forage dry matter yield of Chet (6,385 kg ha^{-1}) was 8.8 percent greater than that of 'Woodward' sand bluestem ($P < 0.03$). The seasonal average crude protein (6.4 percent) and *in vitro* digestible dry matter (51 percent) was not significantly different from Woodward in this field trial ($P > 0.05$) in 2001-2002.

Seed yields were evaluated in small plots at Woodward and Perkins Oklahoma in 2001-2002. The seed yield of Chet (59 kg ha^{-1} pure seed) was significantly different and was 59 percent greater than that of Woodward sand bluestem ($P < 0.05$).

In replicated grazing trials during 2000-2003 at the USDA-ARS Southern Plains Experimental Range near Ft. Supply, Oklahoma, the average daily gain to stocker cattle (1.19 kg per day over a 62 day grazing period) was not significantly different ($P > 0.05$) from that of Woodward sand bluestem.

Chet is named in honor of the late Mr. Chester L. Dewald, Research Agronomist, USDA-ARS Southern Plains Range Research Station, Woodward, Oklahoma. Mr. Dewald was instrumental in the breeding and selection of this cultivar prior to his retirement and death.

Seed of Chet will be deposited in the National Plant Germplasm System where it will be available for research purposes, including the development and commercialization of new cultivars. Appropriate recognition is requested if this release contributes to the development of new breeding line or cultivar. Pedigreed seed of Chet will be limited to

Breeder, Foundation, Registered, and Certified classes. Breeder seed will be maintained by the USDA-ARS. Foundation seed will be under the direction of the Oklahoma Foundation Seed Stocks, Inc., Department of Plant and Soil Sciences, Oklahoma State University, Stillwater, Oklahoma 74078. Selection and testing of Chet was accomplished through a cooperative effort of USDA-ARS, Oklahoma State University, and USDA-NRCS and included the following individuals: Tim Springer (lead scientist), the late Chet Dewald, Phillip Sims, Robert Gillen, Verl Louthan, William Cooper, Charles Taliaferro, Richard White, Richard Wynia, Morris Houck, Jr., Rudy Esquivel, Jim Stevens, and Melinda Brakie.

Signatures for release of:

'Chet' Sand Bluestem (*Andropogon hallii* Hack.)

D. C. Caton

Director, Oklahoma Agricultural Experiment Station
Oklahoma State University
Stillwater, OK 74078

7/13/04
Date

J D Dominick

State Conservationist
Natural Resources Conservation Service
United States Department of Agriculture
Stillwater, OK

7/19/04
Date

Robert E Gleason for

Director of Ecological Science Division
Natural Resources Conservation Service
United States Department of Agriculture
Washington, D.C.

7-30-04
Date

Robert M Faunt for JSJ

~~Acting~~ Deputy Administrator, Crop Production and Protection
Agricultural Research Service, U.S. Department of Agriculture

8-17-04
Date