UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

AND

KANSAS STATE UNIVERSITY
AGRICULTURAL EXPERIMENT STATION
MANHATTAN, KANSAS

NOTICE OF THE SELECTED CLASS RELEASE OF ATKINS GERMPLASM PRAIRIE CORDGRASS

The Natural Resources Conservation Service, United States Department of Agriculture, and the Kansas State University Experiment Station announce the naming and selected class release of Atkins Germplasm prairie cordgrass, *Spartina pectinata* Link.

Atkins Germplasm prairie cordgrass has been assigned the NRCS accession number PMK-686 and the Plant Introduction (PI) number 421595. Atkins Germplasm prairie cordgrass has been developed to provide an adapted source for use in the Central Plains Region, primarily for use in wet sites for soil stabilization and wetland restoration.

Origin: Atkins Germplasm prairie cordgrass originated from seed collected in 1966 by M.D. Atkins on the Missouri River bottomlands in Washington County, Nebraska. The collection site was located approximately 1 mile east of Blair, along a railroad right-of-way adjacent to US Highway 30, on NE1/4NW1/4 of Sec.7, T.18N., R.12E.

Method of Selection: Atkins Germplasm prairie cordgrass was selected from a collection of 117 accessions from Kansas, Oklahoma, and Nebraska. It was assembled and evaluated on the basis of seed production, forage production, growth rate and disease resistance at the Manhattan Plant Materials Center. PMK-686 was selected primarily on its growth potential for increased seed production. Further evaluation of the selected material did not produce a significant gain in this trait.

Ecotype Description: Atkins Germplasm prairie cordgrass is a native, warm-season, tall, coarse, perennial grass that spreads by rhizomes and seed. Cordgrass grows rapidly from late spring through summer and often reaches a mature height of 1 to 2 meters. Rhizome production begins in early summer, and may attain a length of 30 cm or more by autumn. Mature plants of cordgrass have a coarse, thick, woody system of rhizomes which form a dense sod. Inflorescence expression and anthesis occur from mid-July to mid-August at Manhattan, Kansas. Seed shatters as it matures in the inflorescence. Reproduction by seed may be a secondary or long range dispersal method for this vegetatively aggressive species. Insect damage during seed development can be a serious problem with this species. Insects of the genera *Batra* and *Eucosma* adversely affect seed production by predation and stem boring, respectively.

Site Description: The collection site is within Major Land Resource Area (MLRA) 107; Iowa and Missouri Deep Loess Hills. Soils at the collection site are a Luton silt loam, overwash. The Luton series consist of deep, clayey soils of the bottomlands. These soils have developed in clayey, stream-deposited materials. These soils are alkaline throughout and are usually calcareous, especially in the lower part of the profile. The slope ranges from 0 to 1 percent. Elevation averages 1050 feet. The average daily maximum temperature is 60.3 degrees F., the average daily minimum temperature is 38.7 degrees F. The maximum extreme temperature is 106 degrees and the minimum extreme is -24 degrees. The average frost free period is 170 days from 4/23 to 10/10. Average annual precipitation is 30.2 inches.

Anticipated Conservation Use: The potential use of Atkins Germplasm prairie cordgrass is in wet sites for soil stabilization and wetland restoration. It has been extensively evaluated for adaptation and erosion control on watershed structures. Cordgrass produces abundant early forage, but is not readily grazed if other choices are available.

Potential Area of Adaptation: Wet areas in Kansas, Nebraska, and Oklahoma,

Potential Soil Adaptation: It is adapted to most soil types, but grows best on deep, wet lowland soils. It can tolerate some dry conditions due to its extensive root system.

Management: Production fields can be established with rhizomes being placed 1 foot apart within row and 6 to 8 feet between rows. Two growing seasons are normally required prior to digging the rhizomes for sale. With wide spacing between rows, the producer can alternate which side of row to dig for production every other year. This production method will allow the plant to recover yearly without weakening it severely.

Rhizomes should be handled in a manner that will adequately protect the material from drying, freezing, overheating, or sunscald. If materials are not planted within a reasonable period of time after harvest, the material should be kept in a cool, moist environment or be heeled-in in moist soil. Planting operations should be halted if the soil is too dry or so wet that soil coverage cannot be ensured.

Plantings should be well established before livestock grazing or trampling is permitted, particularly if the planting is designed for erosion control or critical area protection. Weed control can be accomplished utilizing clipping techniques before the cordgrass reached 1 foot in height.

Plant Performance: Field evaluation and trial results shown in Table 1.

Release Justification: Currently there are no cultivars of prairie cordgrass available for use in the Central Plains Region. Atkins Germplasm prairie cordgrass has been developed to meet this need.

Source Material Maintenance: Foundation stock (rhizomes) is available from the Manhattan Plant Materials Center, Manhattan, Kansas, to commercial

producers. Atkins Germplasm prairie cordgrass production blocks must be established from foundation rhizomes distributed by the Manhattan Plant Materials Center.

Prepared By: Richard Wynia, and John Row, USDA NRCS Plant Materials Center, 3800 South 20th Street, Manhattan, Kansas, 66502; and Terry Conway, USDA NRCS, 760 South Broadway, Salina, Kansas, 67401.

Approvals:

Thomas M. Domingue

State Conservationist
United States Department of Agriculture
Natural Resources Conservation Service
Salina, Kansas

Date 5-29-98

Marc A Johnson

Director
Kansas State University
Agricultural Experiment Station
Manhattan, Kansas

Date 5-5-98

Diane E Helbert

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

Date 8/12/98