ANNOUNCING THE RELEASE OF

BISMARCK GERMPLASM STIFF SUNFLOWER

SELECTED CLASS OF NATURAL GERMPLASM

by

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE
BISMARCK PLANT MATERIALS CENTER
and

NORTH DAKOTA
AGRICULTURAL EXPERIMENT STATION

SOUTH DAKOTA
AGRICULTURAL EXPERIMENT STATION

MINNESOTA
AGRICULTURAL EXPERIMENT STATION

The United States Department of Agriculture, Natural Resources Conservation Service (NRCS); the North Dakota Agriculture Experiment Station; the South Dakota Agriculture Experiment Station; and the Minnesota Agriculture Experiment Station announce the release of a selected class of stiff sunflower (*Helianthus pauciflorus* Nutt. ssp. *pauciflorus)*.

As a selected release, this plant will be referred to as **Bismarck Germplasm stiff sunflower**. It has been assigned the NRCS accession number 9047233 and the Plant Introduction Number PI-601813. A field was established from vegetative material in 1986. Bismarck Germplasm is released as a selected class of certified seed (natural track).

This alternative release is justified because there are no adapted, consistent, commercial seed sources for this important native species. According to Weaver and Fitzpatrick (1934), it is one of the most characteristic and widely distributed forbs in upland prairies. It is anticipated that this plant will be included in prairie restoration projects and other types of conservation plantings where diversity is desired.

Collection Site Information: Bismarck Germplasm stiff sunflower is a composite of the following nine accessions collected as seed in western and central North Dakota in 1975.

1) ND-1350 (9005952) collected by John McDermand on a sandy site southeast of Bismarck, Burleigh County, North Dakota
2) ND-1395 (9005953) collected by John McDermand on mine spoil southwest of field planting at Truax-Traer Coal Mine near Wilton, Burleigh County, North Dakota
3) ND-1396 (9005954) collected by John McDermand on a clayey site two miles west of Elgin, Grant County, North Dakota
4) ND-1397 (9005955) collected by John McDermand 2.3 miles west of limber pine area, Slope County, North Dakota

5) ND-1399 (9005956) collected by John McDermand in the southwest corner of the Truax-Traer Coal Mine at Wilton, Burleigh County, North Dakota
6) ND-1400 (9005957) collected by John McDermand on a sandy site 1.9 miles west of Stanton turnoff at Hwy. 200, Mercer County, North Dakota
7) ND-1401 (9005958) collected by John McDermand on a light soil at the Killdeer Mountain Pass, Dunn County, North Dakota
8) ND-1430 (9005959) collected by James Kramer on the Johnson Ranch, Slope County, North Dakota
9) ND-1486 (9005960) collected by John McDermand on mine spoil with low SAR at Baukol-Noonan Mine, pothole wildlife planting, Oliver County, North Dakota

Description: Stiff sunflower is a strongly rhizomatous forb which often forms dense colonies, mostly in excellent stands of grass. Plant height varies from 1 to 2 feet, with blossoming in late summer. Flowers have yellow petals surrounding the brown to purplish centers. The stiff leathery leaves occur mostly at the base of the plant and have three prominent ribs. The stems are stiff and rough.

Method of Selection: The nine accessions were evaluated for nine years with no major differences. All collections were mixed and vegetatively increased, starting in 1986. Stiff sunflower has not been tested in field plantings.

Environmental Impact Assessment: Stiff sunflower is native to the plains. It is not an aggressive plant. It will spread vegetatively on disturbed sites, but its seed does not easily germinate. The seed requires cold stratification before it will germinate. According to Johnson and Nichols (1970), this sunflower is readily eaten by livestock and is rarely found on lands that have been long overgrazed. This selection is not invasive based on the assessment worksheet and guidelines set forth by the NRCS Plant Materials Program.

Conservation Use: Bismarck Germplasm stiff sunflower is an important forb which would add diversity in seed mixes for a wide range of native grass plantings such as prairie restoration, native landscaping and range improvement.

Potential Area of Adaptation: The area of adaptation has not been tested. Stiff sunflower is naturally adapted to the grasslands of the Northern Great Plains, from eastern Montana east through North Dakota and South Dakota to Minnesota. It grows on many different soils but is found primarily on upland range sites such as silty, shallow and thin upland; and less frequently on lowlands such as limy subirrigated.

Availability of Plant Materials: Generation 1 (G1) seed will be maintained by the Bismarck Plant Materials Center and is available in limited quantities for commercial seed increase. Seed will be distributed through the North Dakota State University Foundation Seedstocks Program as a selected class (green tag) of natural germplasm. Certification is limited to four generations.

References:

Weaver, J.E. and T.J. Fitzpatrick. 1934 (Reprinted 1980). The Prairie. Ecological Monographs. 4:109-295.

Johnson, J. R. and J. T. Nichols. 1970. Plants of South Dakota Grasslands - A Photographic Study. Bulletin 566, Agric. Expt. Sta. SDSU, Brookings, SD. 163 pp.

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Approvals for Release of:

Bismarck Germplasm stiff sunflower (*Helianthus pauciflorus* Nutt. ssp. *pauciflorus*)

Director, Ecological Sciences Division
United States Department of Agriculture
Natural Resources Conservation Service
Washington, DC

6/30/00
Date

State Conservationist
United States Department of Agriculture
Natural Resources Conservation Service
St. Paul, MN

5/1/00
Date

State Conservationist
United States Department of Agriculture
Natural Resources Conservation Service
Bismarck, ND

ACTING

4/14/00
Date

State Conservationist
United States Department of Agriculture
Natural Resources Conservation Service
Huron, SD

Acting

5/18/00
Date

Director
University of Minnesota
Agricultural Experiment Station
St. Paul, MN

5/2/00
Date

Director
North Dakota State University
Agricultural Experiment Station
Fargo, ND

4/17/00
Date

Director
South Dakota State University
Agricultural Experiment Station
Brookings, SD

5-25-2000
Date