

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE
KNOX CITY, TEXAS

NOTICE OF RELEASE OF POTTER COUNTY GERMPLASM SPIKE DROPSEED
SELECTED CLASS OF NATURAL GERMPLASM

The Natural Resources Conservation Service, U.S. Department of Agriculture announces the release of a selected ecotype of spike dropseed, *Sporobolus contractus* A.S. Hitchc.

As a selected release this plant will be referred to as Potter County Germplasm spike dropseed. It has been assigned the NRCS accession number 9042838. Potter County Germplasm is released as a selected class of certified seed (natural track).

This alternative release procedure is justified because there are presently no commercial varieties of spike dropseed available.

Collection Site Information: Potter County Germplasm was originally collected in 1984 from native plants located in the Canadian River bottomland approximately 18 miles north of Amarillo, TX (N. Lat. 35° 28' 30", W Long 101° 48' 30") in Potter County Texas. Elevation at the collection site is approximately 2975 feet; the soil at the collection site is classified as Lincoln Soils, frequently flooded. Average precipitation for the area is around 20 inches. Other plants growing in association included sand dropseed, little bluestem, switchgrass and yellow Indiangrass. The collection site is located in MLRA 78A - Rolling Plains, Northern Part.

Description: Potter County Germplasm is a perennial, warm-season, native bunchgrass. Spike dropseed occurs from western Texas up through Colorado and across through southeastern California and down across Sonora, Mexico. Plants are in small clumps usually 40-115 cm tall with a densely contracted and spikelike panicle. Panicle may be 15-50 cm long and .5-.7 cm wide. Leaf sheaths are rounded glabrous on back, usually with long white hairs on the collar. Leaf blades are 4-35 mm long, flat or becoming involute, 3-8 mm wide and tapering toward the tip. Plants reproduce from seed. Chromosome number reported as $2n=36$.

Method of Breeding and/or Selection: Potter County Germplasm was evaluated against 17 other accessions of the same species. It was selected as the top accession based on foliage, survivability, vigor and overall plant performance. At the Plant Materials Center in 1997 seed yield/acre was 170 pounds with two harvests and in 1998 seed yield/acre was 230 pounds with two harvests. See attachment 1 for initial and advanced evaluation summaries and seed production figures.

Environmental Impact Assessment: Potter County Germplasm spike dropseed is a selection of naturally occurring germplasm and has been unaltered from its original collection. Potter County Germplasm did not meet the assessment of a plant which would become invasive based on literature review and the attached "Invasive Species Worksheet" (see attachment 2).

Conservation Use: Potter County Germplasm may be used in pure stands or as a component in seed mixtures for range seeding and conservation reserve plantings. Spike dropseed reseeds itself readily on ranges following overgrazing or drought. It may be used for stabilizing sandy soils that have high erosion potential. Its forage value is fairly palatable to all livestock. Wildlife can utilize the plants for food and ground nesting cover.

Anticipated Area of Adaptation: Potter County Germplasm's anticipated areas of adaptation is MLRAs 42, 77, 78, 80A,B, and the northern areas of 81A,B, in west and southwestern Texas and western Oklahoma. Spike dropseed is adapted to a wide range of soil types but will perform best on sandy loam soils, loamy fine sands and silty soils.

Availability of Plant Materials: Generation 0 seed (equivalent to Breeder seed) will be maintained by the USDA-NRCS Plant Materials Center at Knox City, Texas and is available in limited quantities to interested parties for increase purposes.

References:

Gould, F. W 1975. The Grasses of Texas. TAMU Press, College Station.

USDA-SCS Soil Survey; Potter County Texas, 1980.

Hitchcock, A. S., Manual of the Grasses of the United States, US Govt. Printing Office 1950

Prepared by:

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Signatures for release of:

Potter County Germplasm spike dropseed (*Sporobolus contractus*)



Name
John P. Burt, State Conservationist
United States Department of Agriculture
Natural Resources Conservation Service
Temple, Texas

11-23-99
Date



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

3/2/00
Date

Attachment 1: Summary of Initial and Advanced Evaluation of *Sporobolus confracus*, spike dropseed

Initial Evaluation Summary

Accession - Origin	Foliage	Fol.Ht.	Seed Amt	Seed Fill	%Stand	Vigor
9035007	5	30	5	5	50	5.5
9042790	5.33	24	5	5	46.66	5.13
9042841	4.5		5	5	93.33	4.38
9029534	6	17	5.5	5	78.33	4.5
9035653 - Dickens Co., TX	4.33	37	5	5	90	4.13
9042858	4.5		5	5	83.33	4.38
9035895	5		4	5	88.33	4.75
9035902	4.5		6	5	86.66	4
9035852	4.33	21	5	5	66.66	4.38
9035813	5		5	5	83.33	4.75
9042857	5		5	5	73.33	4.5
9042819	4.5		5	5	95	4.25
9042782 - Gaines Co., TX	4.33	30	4	4	83.33	5.25
9042838 - Potter Co., TX	3.5		4	5	98.33	3.38
9042917 - Culberson Co., TX	5	17	3	3.5	76.66	4.13
9035928	5.5		5	5	90	3.75
9042804	4.66	27	5	5	81.66	4.88
9042908	5.33	24	5.5	5	86.66	4.75

1 Year Summary of AE Selections of *Sporobolus confracus* spike dropseed

Accession	% Survival	Vigor Rating: 1=best to 9=poor
9042838 - Potter Co., TX	77.8	4.97
9042917 - Culberson Co., TX	63.9	5.05
9035653 - Dickens Co., TX	44.4	6.05
9042782 - Gaines Co., TX	27.8	5.62

Initial Seed Increase Production Figures of Potter County, Correllasm, spike dropseed

Production Year	Area Planted	Production	Converted Lbs./ac.
1999	.20 ac.	58 lbs.	232 lbs.
1998	.20 ac.	46 lbs.	230 lbs.
1997	.20 ac.	34 lbs.	170 lbs.
1994 - 1996	Seed collected from AE planting for initial increase		

Attachment 2: Invasive Species Worksheet

Proposed release species: Potter County Germplasm spike dropseed

Instructions: Circle item under Yes or No column and follow to conclusion.

	Yes	No
1. Does the species invade elsewhere, outside of North America?	To 13	To 2
2. Is it a specific hybrid with known seed sterility?	To 3	To 4
3. Does it spread quickly by vegetative means?	To 15	To 16
4. Is it native to parts of North America other than the region of the proposed introduction?	To 5	To 6
5. Does it spread quickly by vegetative means?	To 15	To 16
6. Does it grow very rapidly in its first two years?	To 8	To 7
7. Does it reproduce quickly vegetatively?	To 10	To 9
8. Does it reproduce quickly vegetatively?	To 17	To 11
9. Is it in a family or genus with species that are already strongly invasive in North America?	To 15	To 16
10. Do the seeds require pretreatment for germination?	To 12	To 15
11. Do the seeds require pretreatment for germination?	To 15	To 17
12. Is it in a family or genus with species that are already strongly invasive in North America?	To 15	To 16
13. Is it in a family or genus with species that are already strongly invasive in North America?	To 17	To 14
14. Is it native to parts of North America other than the region of the proposed introduction?	To 15	To 17
15. Further analysis concerning need for...		
16. Accept germplasm		
17. Reject germplasm		

Adapted from article - Predicting invasions of woody plants introduced into North America, Conservation Biology Vol. 11:193-203, Feb. 1997.

Reference(s) used for analysis of conclusion:

1. Gould, F. W. 1975. The Grasses of Texas. TAMU Press, College Station.
2. USDA-SCS, 1971, 100 Native Forage Grasses in 11 Southern States, Ag. Handbook No. 139.
3. Correll and Johnston, Manual of the Vascular Plants of Texas, Texas Research Foundation, 1970.
4. Quinn, J.A., Ward, R.T., Ecological differentiation in sand dropseed, Ecol. Monogr., Winter 1969.
5. Hitchcock, A. S., Manual of the Grasses of the United States, US Govt. Printing Office 1950
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