

UNITED STATES DEPARTMENT OF AGRICULTURE  
AGRICULTURAL RESEARCH SERVICE  
WASHINGTON D.C. 20250

AND

UTAH AGRICULTURAL EXPERIMENT STATION  
UTAH STATE UNIVERSITY  
LOGAN, UTAH 84322-4810

AND

UNITED STATES DEPARTMENT OF AGRICULTURE  
NATURAL RESOURCES CONSERVATION SERVICE  
WASHINGTON D.C. 20013

AND

UNITED STATES DEPARTMENT OF INTERIOR  
BUREAU OF LAND MANAGEMENT  
WASHINGTON D.C. 20240

NOTICE OF RELEASE OF STAR LAKE INDIAN RICEGRASS  
SELECTED GERMPLASM

Star Lake Germplasm of Indian ricegrass (*Achnatherum hymenoides* [Roem. & Schult.] Barkworth) is proposed for release. This selected class (genetically manipulated track) of pre-variety germplasm is eligible for seed certification under guidelines developed by the Association of Seed Certifying Agencies (2001). This alternative release procedure is being utilized because existing commercial sources of Indian ricegrass are inadequate, propagation material of specific ecotypes is needed for ecosystem restoration, potential for immediate use is high, and commercial potential beyond specific restoration and reclamation objectives is probably limited (Young, 1995). Participating in the release are the USDA-ARS, the Utah Agricultural Experiment Station, the USDA-NRCS, and the USDI-BLM.

The parent population of Star Lake, T-593, was collected July 7, 1988 by T.A. Jones, D.C. Nielson, and R.D.B. Whalley in northeastern McKinley County, NM near the continental divide alongside highway 197, 24 km northwest of Torreon. Elevation at the site is 2,059 m, average annual precipitation is approximately 250 mm, and winterhardiness zone is 5b. The site is classified by USDA-NRCS (Anonymous, 1981) as Major Land Resource Area D36 (New Mexico and Arizona Plateaus and Mesas), by the USDA-Forest Service (Bailey, 1995) as Province 313 (Colorado Plateau Semi-Desert Province) and by the EPA (2002) as Level III Ecoregion 22 (Arizona New Mexico Plateau). Soil collected at the site was 8.0 pH, 0.5 mmhos cm<sup>-1</sup> electrical conductivity.

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and sandy loam texture by feel. The site was occupied by big sagebrush (*Artemisia tridentata* Nutt.), rabbitbrush (*Chrysothamnus* sp.), globemallow (*Sphaeralcea* sp.), and cheatgrass (*Bromus tectorum* L.).

After collection it was noted that T-593 consisted of three seed morphs, termed small elongate (later named Star Lake), large globose (T-593 GS), and jumbo (T-593 JS) (Jones and Nielson, 1999). These morphs were increased separately in North Logan, UT (G-2). Averaged over two years, seed mass of Star Lake, T-593 GS, and T-593 JS was 2.33 mg, 3.37 mg, and 8.62 mg. Averaged over two years, lemma (palea) thickness of Star Lake, T-593 GS, and T-593 JS was 52  $\mu\text{m}$  (49  $\mu\text{m}$ ), 93  $\mu\text{m}$  (83  $\mu\text{m}$ ), and 181  $\mu\text{m}$  (148  $\mu\text{m}$ ), respectively. Because thickness of the lemma and palea is a factor limiting germination (Huntamer, 1934; Zemetra, 1979), germination of Star Lake, T-593 GS, and T-593 JS was 66%, 20%, and 0%, averaged over six comparisons.

Star Lake was compared to 29 other accessions from southern Utah, northern New Mexico, and northern Arizona at Kaysville, UT. Seed harvested in 1996 was germinated (3-wk 5°C prechill + 2-wk 15°C germination period) and counts were made March 13, 1997. Star Lake was highest in germination (77.0%). Test mean and median were 11.1% and 1.5%, respectively.

Seed of the G-2 generation will be maintained by the USDA-ARS Forage and Range Research Laboratory, Logan, UT and will be made available to growers for production of G-3 to G-5 seed by the Utah Crop Improvement Association. Seed through the G-5 generation will be eligible for certification.

T.A. Jones, D.C. Nielson, S.L. Caicco, G.A. Fenchel, and S.A. Young.

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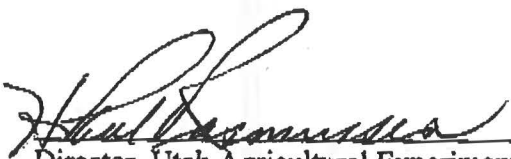
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Director, Utah Agricultural Experiment Station  
Utah State University

8/20/03

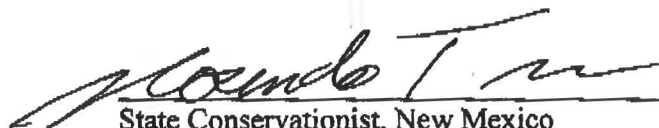
Date



Assistant Director, Renewable Resources and Planning  
Bureau of Land Management  
U.S. Department of Interior

8/28/03

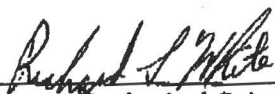
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State Conservationist, New Mexico  
Natural Resources Conservation Service  
U.S. Department of Agriculture

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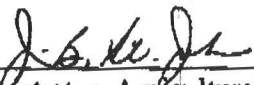
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for

Director, Ecological Sciences Division  
Natural Resources Conservation Service  
U.S. Department of Agriculture

12/10/03

Date



Administrator, Agricultural Research Service  
U.S. Department of Agriculture

6/1/04

Date