

### Registration of Cucharas Green Needlegrass Germplasm

Cucharas green needlegrass [*Nassella viridula* (Trin.) Barkworth] germplasm (Reg. no. GP-86, PI 632556) was released 13 Jan. 2003 as a selected class of Certified seed (natural track). This class of prevariety germplasm is eligible for seed certification under guidelines developed by the Association of Official Seed Certifying Agencies (AOSCA, 2001). Natural track designation is merited because no intentional selection was practiced on this material. Cucharas was collected and intended for use in the central Great Plains, while the existing cultivars Lodorm (Schaaf and Rogler, 1960, 1970) and AC Mallard originate in North Dakota and Manitoba, respectively. Cucharas represents an improvement in germinability over these cultivars of this predominately self-pollinating species (Johnson and Rogler, 1943). Participating in the release were the USDA-ARS and the Utah Agricultural Experiment Station.

Cucharas was collected and tested under the designation T-872. The collection was made 11 July 1993 by T.A. Jones along highway 10 near Cucharas Junction, Huerfano County, CO (37°39'45" N, 104°42'10" W), approximately 7 km northeast of Walsenburg. Associated plant species at the site were the native species western wheatgrass [*Pascopyrum smithii* (Rydb.) A. Löve], blue grama [*Bouteloua gracilis* (Kunth.) Lag. ex Griffiths] and fourwing saltbush [*Atriplex canescens* (Pursh) Nutt.]; the introduced species smooth brome grass (*Bromus inermis* Leys.); and introduced weeds such as *Kochia scoparia* (L.) Schrad., *Lepidium* sp., and *Melilotus* sp. Elevation of the site is approximately 1829 m, winterhardiness zone is 6b, and average annual precipitation is 350 to 400 mm.

T-872 was established in May 1994 at Greenville Farm, North Logan, UT, in an evaluation of 32 green needlegrass accessions from Alberta, North Dakota, South Dakota, Montana, Colorado, and New Mexico. In this comparison, T-872's nonprechilled germination was the highest for 1995-harvested seed and third highest for 1996-harvested seed. High seed dormancy is recognized as a factor limiting stand establishment in green needlegrass, and genetic variation for this trait has been established (Rogler, 1960). Studies have found maximal germination after 4 to 5 yr (McWilliams, 1950) and 7 yr (Rogler, 1960) of storage without temperature control.

T-872 was subsequently compared with Lodorm and AC Mallard (seed received from Dr. Paul McCaughey, Agriculture and Agri-Food Canada, Brandon, MB) in a test at Richmond Farm, Richmond, UT, established in April 2000. Seed yield per plant averaged over 2001 and 2003 was 5.64 g for Cucharas, 2.51 g for Lodorm, and 2.50 g for AC Mallard. The 2002 seed crop was lost to shattering. Nonprechilled germination of 2001-harvested seed was 31.9% for Cucharas, 10.8% for Lodorm, and 16.7% for AC Mallard.

Seed from the Greenville Farm evaluation (G1) was used to establish a seed increase (G2), also at Greenville Farm, in September 1998, which was harvested in 2000 and 2001. Seed of the G2 generation will be maintained by the USDA-ARS Forage and Range Research Laboratory, Logan, UT, and seed of G3 and G4 generations will be made available to growers by the Utah Crop Improvement Association. Seed through the G5 generation will be eligible for certification, but sale of Cucharas seed beyond generation G5 is expressly prohibited to limit genetic shift.

Small quantities of seed will be provided to researchers on request to the corresponding author. Appropriate recognition should be made if this material contributes to the development of a new breeding line or cultivar.

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### References

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### Registration of Ribstone Indian Ricegrass Germplasm

Ribstone Indian ricegrass [*Achnatherum hymenoides* (Roem. & Schult.) Barkw.] germplasm (Reg. no. GP-87, PI 632634) was released 13 Jan. 2003 as a selected class of Certified seed (genetically manipulated track). This class of prevariety germplasm is eligible for seed certification under guidelines developed by the Association of Official Seed Certifying Agencies (AOSCA, 2001). Participating in the release are the USDA-ARS, the Utah Agricultural Experiment Station, and Ducks Unlimited-Canada. Ribstone was evaluated under the experimental designation O-4.

Ribstone was selected from T-918, an accession collected 27 July 1993 by T.A. Jones north of Taber, AB, across the Oldman River from Taber Provincial Park (49°49'15" N, 112°10'06" W). The soil at the collection site was a nonsaline (EC = 0.02 S m<sup>-1</sup>), slightly alkaline (pH = 7.8), sand (960 g kg<sup>-1</sup> sand, 20 g kg<sup>-1</sup> silt, 20 g kg<sup>-1</sup> clay). At the time of collection, this accession was noted as featuring an acute glume-pair angle, a trait previously associated with seed retention in the Indian ricegrass cultivar Rimrock (PI 478833) (Whalley et al., 1990; Jones and Nielson, 1992; Jones et al., 1998). High seed retention facilitates improved mechanical seed harvest of Indian ricegrass, a species that exhibits both indeterminate flowering and seed shattering (Jones, 1990). Associated plant species at the site were other native grass species, green needlegrass [*Nassella viridula* (Trin.) Barkw.], needle-and-thread [*Hesperostipa comata* (Trin. & Rupr.) Barkw.], blue grama [*Bouteloua gracilis* (Kunth) Lag. ex Griffiths], western wheatgrass [*Pascopyrum smithii* (Rydb.) A. Löve], thickspike wheatgrass [*Elymus lanceolatus* (Scribn. & J.G. Smith) Gould], and prairie junegrass (*Koeleria cristata* Pers.); shrubs *Rosa* sp. and *Symphoricarpos* sp.; and forbs *Opuntia* sp., *Cleome* sp., and *Dalea* sp.

Indian ricegrass is a self-pollinating species (Jones and Nielson, 1989). The T-918 accession was established at Evans Farm, Millville, UT, in May 1994 in an evaluation of 10 Indian ricegrass accessions collected in Alberta. T-918 had the highest seed yield in 1995 and 1996 and the third and sixth-highest germination following prechill in 1995 and 1996-harvested seed, respectively. Five of the 10 accessions, including T-918, were advanced to a second trial established in April 1997 at Greenville Farm, North Logan, UT. From this planting, 10 of 123 individual T-918 plants were visually selected in 1999 for acute glume-pair angle. Seed from the 10 plants was bulked