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RELEASE OF TOE JAM CREEK BOTTLEBRUSH SQUIRRELTAIL SELECTED GERMPLASM

Toe Jam Creek Germplasm of bottlebrush squirreltail (*Elymus elymoides* [Raf.] Swezey ssp. *californicus)* is proposed for release. This selected class (natural track) of pre-cultivar germplasm is eligible for seed certification under guidelines developed by the Association of Seed Certifying Agencies (2001). Participating in the release are the USDA-ARS, Utah Agricultural Experiment Station, USDA-Natural Resources Conservation Service, and the USDI-Bureau of Land Management. This alternative release procedure is being utilized because existing sources of bottlebrush squirreltail 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). The great degree of genetic variation within and between *E. elymoides* subspecies for ecophysiological traits (Jones et al., 2003) is probably related to the self-pollinating nature of this grass (Jensen et al., 1990).

Toe Jam Creek (PI 531604) keys to *Sitanion hystrix* (Nutt.) J.G. Smith var. *californicus* (= *E. elymoides* ssp. *californicus),* one of three bottlebrush squirreltail taxa in Wilson's (1963) treatment, while the Sand Hollow germplasm (Jones et al., 1998) keys to *Sitanionjubatum* J.G. Smith (= *Elymus multisetus* [J.G. Smith] M.E. Jones), i.e., big squirreltail (Barkworth et al., 1983; Barkworth, 1997). Recent molecular AFLP data have verified that big squirreltail and bottlebrush squirreltail are indeed distinct species (Larson et al., in prep.), though var. *californicus* was not included in that study.

Toe Jam Creek was collected in northwestern Elko County, NV about 13 ltm west of Tuscarora by J. Garrison (USDA-SCS [NRCS]). D.R. Dewey listed it in his collection as D-2986. No intentional selection has been performed on this accession. The site is classified by USDA-NRCS (Anonymous, 1981) as Major Land Resource Area D25 (Owyhee High Plateau). Elevation at the site is 1829 m. Average annual precipitation at Tuscarora is 312 mm. Toe Jam Creek's intended area of use is he northern Great Basin and the lower Snake River Plain.

Removal of the awn without seed damage has been problematic in Sand Hollow big squirreltail germplasm. Mass of the proximal centimeter of the awn for Toe Jam Creek was 0.266 mg at Evans Farm in 2001, 34% lower than Sand Hollow. Awn mass of Toe Jam Creek was not significantly different from Fish Creek germplasm at North Park Farm in 2001. Toe Jam Creek has been compared with 26 other *E. elymoides* and *E. multisetus* accessions frorn California, Nevada, Oregon, Washington, Idaho, Montana, Wyoming, and Colorado in greenhouse and field trials, none of which keyed to *E. elymoides* ssp. *californicus* (Jones et al., 2003). Heading date of Toe Jam Creek was similar to the average of 17 *E. elymoides* ssp. *elymoides* accessions, but Toe Jam Creek had greater individual seed mass than any of these accessions. G-2 seed harvested from this field trial was used to establish a seed increase at Evans Farm in the spring of 2000, from which G-3 seed was harvested beginning in 2001. Seed of the G-3 generation will be maintained by the USDA-ARS Forage and Range Research Laboratory, Logan, UT and will be made available to growers by the Utah Crop Improvement Association. Seed through the G-6 generation will be eligible for certification.

Seed of Toe Jam Creek germplasm will be donated to the National Plant Germplasm System. Small quantities of seed can be obtained for research purposes by contacting David Stout, Western Regional Plant Introduction Station, Washington State University, Pullman, WA 99164-6402. Appropriate recognition should be made if this material contributes to the development of a new breeding line or cultivar.

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