

UNITED STATES DEPARTMENT OF AGRICULTURE  
NATURAL RESOURCES CONSERVATION SERVICE

**NOTICE OF RELEASE OF JACKSON-FRAZIER  
GERMPLASM MEADOW BARLEY  
[SOURCE IDENTIFIED CLASS - NATURAL TRACK]**

The Natural Resources Conservation Service (NRCS), U.S. Department of Agriculture (USDA), announces the release of a source identified ecotype of meadow barley (*Hordeum brachyantherum* Nevski).

This plant will be referred to as Jackson-Frazier Germplasm meadow barley. It has been assigned USDA NRCS accession number 9056373 and PI-645564. Jackson-Frazier Germplasm is released as a source identified class of certified seed and plants, natural track.

**Origin:** Seed of Jackson-Frazier Germplasm meadow barley was originally collected in 1997 at the Jackson-Frazier Wetland nature preserve in Benton County, Oregon. The preserve is located in EPA Ecoregion 3 - Willamette Valley and the NRCS Major Land Resource Area A2 - Willamette and Puget Sound Valleys. The site is located at an elevation of 225 feet above mean sea level and has an average annual precipitation of 42 inches. The soil type is delineated as Bashaw clay. Meadow barley seed was collected from a large naturally occurring stand in a wet prairie and grown and tested at the Corvallis Plant Materials Center (PMC), Corvallis, Oregon.

**Description:** Jackson-Frazier meadow barley grows 24 to 54 inches (60-138 cm) tall in a loose to moderately dense tuft. Plant height is greater than typically described (20-100 cm) for meadow barley. Culms (stems) are erect to spreading and usually bent at the base. Leaves lack auricles, have a short ciliolate ligule, and are glabrous (hairless) or with a few, scattered fine hairs. Leaf blades are 2 to 9 (11) mm wide (Hitchcock 1969), and mostly basal except for 1-3 (4) short leaves midway up the culm (Guard 1995). Additional leaves occur along upright to spreading vegetative tillers arising from the base. The inflorescence (seedhead or panicle) is a narrow, flattened spike. Spikes are mostly erect, narrow, and 1.5 to 4 inches (4-10 cm) long, with three spikelets per node and one floret per spikelet. The central spikelet is fertile and sessile (stalkless) and the lateral ones reduced, on a short pedicel about 1 mm long, and usually sterile but sometimes staminate (Hitchcock, et. al. 1969, Hickman 1993). Both spikelet bracts (glumes) and fertile floret bracts (lemmas) are bristle or awn-like (USDA Forest Service 1937). The brittle central axis (rachis) of the spike easily breaks off (shatters) in segments from the top down at maturity. By mid-summer only the lowest spikelets remain (Guard 1995). Some plants of Jackson-Frazier Germplasm have strictly green stems with purple joints, but the predominate genotypes have blue-green stems (due to a bluish-white waxy coating). Leaves and spikes range from green to purple-green. These colors may or may not be typical of the species. This cool season grass actively grows

during the winter within its area of origin and year round if sufficient moisture is present. It may flower more than once each year under moist conditions, especially if clipped.

**Method of selection:** Jackson-Frazier Germplasm meadow barley has not undergone purposeful selection and was collected from 100s of wild parental (G0) plants. As accession 9056373 and PI-645564, it has been grown for seed and tested at Corvallis, Oregon, since 1999. The population was increased and maintained because of its reliable seed production under cultivation, good seedling vigor, phenotypic and presumed genetic diversity, stable source of G0 wild seed, and natural origin centered within the Willamette Valley of Oregon. Some plants within the population show slight to moderate signs of stripe rust (*Puccinia striiformis*) in certain years. Infection rates of head smut (*Ustilago* sp.) have been very low but no special resistance to the disease is inferred.

**Area of suggested use:** Based on general similarities in ecosystems and what is known about the species, Jackson-Frazier Germplasm is presumed adapted to, and thus recommended for, the Willamette Valley and associated foothills of western Oregon below an elevation of 1500 ft. This is roughly equivalent to EPA Ecoregion 3 or USDA Major Land Resources Area 2, excluding the Puget valleys of western Washington. This region lies within USDA Plant Hardiness Zones 8a and 8b (Cathey 1990) and American Horticultural Society Plant Heat Zones 4 and 5 (American Horticultural Society 1997).

**Anticipated use:** Recommended uses include freshwater wetland enhancement and restoration, riparian site revegetation, streambank, waterway, and shoreline erosion control, and wetland wildlife habitat plantings. Meadow barley provides quick cover alone or in seeding mixtures with other native grasses for critical area stabilization on summer dry, moist, or wet sites, including roadside ditch banks and ditch bottoms. The species prefers full sun and occurs on course to fine textured soils with pH ranging from 5.5 to 8.5. Jackson-Frazier Germplasm tolerates semi-drought in summer, prolonged soil saturation and inundation in winter, and extended periods of shallow flooding in spring. Adaptation to higher soil salinity may be population specific; therefore this germplasm is not recommended for use on high coastal marshes or tidal surge plains at this time.

**Ecological impact statement:** Jackson-Frazier Germplasm is from a naturally occurring population of meadow barley and has not undergone purposeful selection. It has not been bred or hybridized and does not appear to differ in rate of spread, seed production, or vigor from other naturally occurring populations of meadow barley. Jackson-Frazier Germplasm is recommended for use primarily within the ecoregion and elevation range from which it originated (Ecoregion 3). Within this area, the species is not considered weedy and while it can move into adjacent disturbed areas, it rarely dominates and often gives way to longer lived, more persistent species. According to the “Worksheet for Documenting an Environmental Evaluation of NRCS Plant Releases” as applied to the intended area and type of use, this population was deemed to have low adverse impact on habitats, ecosystems, and land use, be easy to control, and have a moderate level of importance for conservation use. Its biological properties reflect a moderate ability to propagate and maintain itself under natural conditions. Jackson-Frazier Germplasm is not necessarily intended to replace on-site sources of native meadow barley for ecological

restoration plantings. Individuals with such concerns for a particular environment or ecosystem should make their decisions on a case by case basis. Minor to rare signs of ergot (*Claviceps purpurea*) have been observed on Jackson-Frazier meadow barley when environmental conditions are right. When abundant in any grass pasture, this disease may require special precautions for grazing animals due to toxicity (usually mowing or temporary exclusion).

**Availability of plant materials:** The USDA, NRCS, Plant Materials Center, Corvallis, Oregon, will maintain G1 generation seed. A limited quantity of source identified, certified seed (yellow tag) will be available to qualified commercial growers upon request. G0, G1, G2, and G3 seed are recommended for certification.

**References:**

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Hitchcock, C.L., A. Cronquist, M. Ownbey, and J.W. Thompson. 1969. *Vascular plants of the Pacific Northwest, Part I*. University of Washington Press. Seattle, Washington.

U.S. Department of Agriculture, Forest Service. 1937. *Range plant handbook*. U.S. Government Printing Office. Washington, DC.

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**SIGNATURES for RELEASE of  
JACKSON-FRAZIER GERMPLASM MEADOW BARLEY (*Hordeum  
brachyantherum*)**

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