



United States Department of Agriculture
Natural Resources Conservation Service
Plant Materials Program

Willamette Valley Germplasm

Roemer's fescue

Festuca roemeri (Pavlick) E.B. Alexeev

A Conservation Plant Release by USDA NRCS Corvallis Plant Materials Center, Corvallis, Oregon



Willamette Valley Germplasm Roemer's fescue. Photo by Dale Darris

Willamette Valley Germplasm is a selected class pre-variety of Roemer's fescue released in 2012 by the USDA Natural Resources Conservation Service and the Institute for Applied Ecology, Corvallis, Oregon. It is one of five related germplasm releases, each targeting an area of the Pacific Northwest within the natural range of the species.

Description

Willamette Valley Germplasm Roemer's fescue is a native cool season, perennial bunchgrass with mostly basal foliage that is fine-textured and dense. Variation among plants is high. Leaf color varies from shades of green to pale blue. The stiff, erect, smooth stems terminate in an open seedhead and grow 28-45 inches tall on average. They range in color from yellow-green to purple or red, turning mostly straw colored at maturity. The basal width of the plant is 4-7 inches. Plants rarely flower until mid to late May of the second full growing season. Seed matures between mid June and early July in western Oregon.

Source

Willamette Valley Germplasm was collected from nine naturally occurring stands (populations) of Roemer's fescue growing within the Willamette Valley ecoregion.

The collection sites were from 360 to 1100 ft above sea level in an area where the average annual precipitation is 40 to 50 in. Results from a common garden study revealed patterns of genetic variation for growth, fitness, and rate of development among 47 populations from the Pacific Northwest that related to elevation, latitude, and certain climatic features of the seed source. Roemer's fescue variation clustered into seed transfer zones corresponding to EPA Level III or Level IV ecoregions. In order to incorporate substantial genetic diversity, nine of 17 populations collected within the Willamette Valley seed transfer zone were selected to represent the Willamette Valley Germplasm. Populations were eliminated for being too high in elevation or having unusual adaptation or appearance, low seed yield, or poor survival. Random mating among the nine populations was promoted in a crossing block of G1 plants in order to form a genetically diverse polycross and potentially reduce or eliminate any inbreeding depression.

Conservation Uses

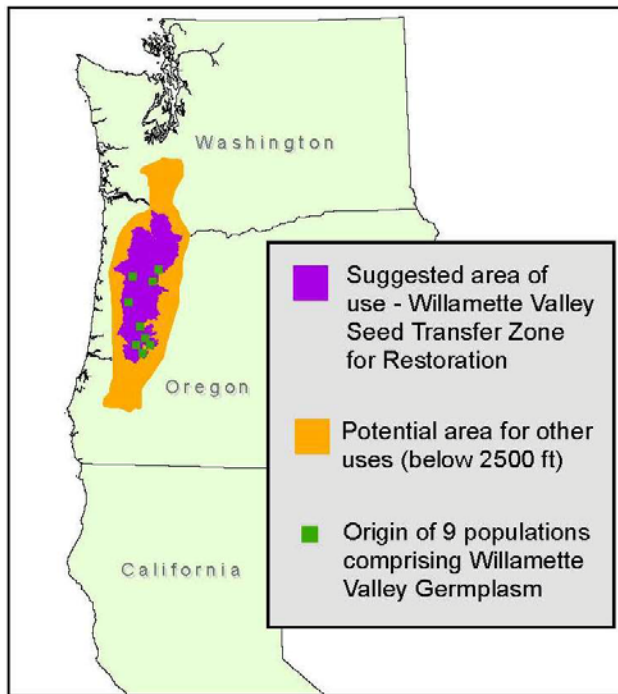
Recommended uses for Willamette Valley Germplasm include restoration of upland prairies, grassy balds, oak savanna, and similar native plant communities, as well as wildlife habitat improvement. This includes food or cover for various song and game birds, small mammals, and beneficial insects. Forage value and palatability for wildlife and livestock are not well documented but may be similar to Idaho fescue. Idaho fescue is rated as fair to good forage. Roemer's fescue is drought tolerant and its non-aggressive growth habit suggests compatibility with forbs. After further evaluation, other uses may include general revegetation and erosion control of disturbed sites and roadsides where a fine textured perennial grass is desired, low input turf, and cover crop for vineyards or young orchards.

Area of Adaptation and Use

Willamette Valley Germplasm Roemer's fescue is primarily recommended for use within the Willamette Valley ecoregion below an elevation of 2500 feet (see map). Movement of the germplasm within this seed transfer zone should pose minimal risk of maladaptation. Pending further testing, use may extend to adjacent ecoregions for select purposes other than restoration.

This germplasm is likely to grow best in full sun and part shade near trees on moderately well to well-drained, medium to fine-textured soils that are moderately acid to slightly basic. Although Roemer's fescue is considered drought tolerant and has extensive roots, it favors more mesic rather than xeric habitats within a site. While the species is known for tolerance to serpentine soils, moderate to low fertility conditions, and wildfire, the

specific adaptation of Willamette Valley Germplasm to such extremes remains to be tested.



Areas of suggested and potential use for Willamette Valley Germplasm Roemer's fescue. Map by Ian Reid, NRCS Portland, OR.

Establishment and Management for Conservation Plantings

Seeds typically germinate without treatment indicating dormancy is low. However, germination is quicker and more uniform after 14 days of cold (34-38°F), moist stratification (moist chilling). There are approximately 500,000 seeds per pound with hulls intact. A seeding rate of 1 pound per acre results in about 12 seeds per square foot. Sown alone, recommended rates for revegetation vary from 4 to 20 pure live seed (PLS) pounds per acre depending on goals, method of sowing, and site conditions. Fertilization encourages weed competition and should be avoided the first four to six months.

If managed for forage production, a rotational system of moderate grazing similar to that used for Idaho fescue is suggested. Idaho fescue is susceptible to overgrazing. In settings where utilization is low, prescribed burning or mowing every few years are possible tools in maintaining stand vigor and stimulating reproductive capacity. For cover or low input turf, Roemer's fescue tolerates being mowed two to three times a year at moderate heights (2-3 inches) with or without fertilization.

Ecological Considerations

Willamette Valley Germplasm is not considered weedy within the intended area of use. It is a known host of rust diseases (*Puccinea* spp.) which may warrant control in some years when cultivated for seed. Trace amounts of ergot (*Claviceps purpurea*) have been observed in similar

populations of Roemer's fescue. The same rusts and ergot commonly infect other grasses, so their presence on this germplasm, if detected, is not deemed a special risk. In the unlikely event of ergot becoming abundant, special precautions should be considered to avoid toxicity to grazing animals (such as temporary livestock exclusion).

Seed and Plant Production

For seed increase the suggested seeding rate is 2 to 4 lbs per acre. Fall sowing is preferred since spring plantings may require irrigation in summer dry areas. Suggested row spacing is 12 to 14 inches. Certified seed production in Oregon requires a minimum isolation distance of 900 feet between Roemer's fescue populations, and allows no more than 1% contamination by red fescue seed as determined by an ammonium hydroxide root florescence test. Depending on the state, one or more herbicides may be labeled for grass weed control in established stands, and others are routinely labeled for post-emergence broadleaf weed control. Fungicides may be labeled for control of rust diseases. Always read and follow label directions. For established stands in western Oregon, apply 50 to 60 lbs of nitrogen per acre annually in February or March. Conventional harvest methods of windrowing and combining after the seed is dry work well, as do flail-vac seed strippers. Post-harvest residue management should include the removal of most crop straw and decadent foliage by baling or flail chopping with a forage harvester. Remaining stubble and foliage should 1 ½ to 2 ½ inches tall.

Availability

For conservation use: G3 and G4 seed should be available from specialized growers by late 2013.

For seed or plant increase: The NRCS Corvallis Plant Materials Center maintains certified G2 and G3 seed.

For more information, contact:
Corvallis Plant Materials Center
3415 NE Granger Ave.
Corvallis, Oregon 97330
Phone: 541-757-4812

Citation

USDA Natural Resources Conservation Service. 2012. Release brochure for Willamette Valley Germplasm Roemer's fescue (*Festuca roemerii*). USDA NRCS Corvallis Plant Materials Center, Corvallis, OR.

For additional information about this and other plants, please contact your local USDA Service Center, NRCS field office, or Conservation District <<http://www.nrcs.usda.gov/>>, and visit the PLANTS Web site <<http://plants.usda.gov/>> or the Plant Materials Program Web site <<http://www.plant-materials.nrcs.usda.gov/>>

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