

'Arlington' and 'Elkton' blue wildrye



Native grass ecotypes for:

- woodland revegetation
- upper streambank and roadside stabilization
- erosion control on disturbed sites
 - quickcover
- site rehabilitation after logging or fire
 - wildlife habitat

Conservation plants by the
Corvallis Plant Materials Center,
Corvallis, Oregon

'Arlington' and 'Elkton' blue wildrye

Blue wildrye (*Elymus glaucus* Buckl.) is a tall, rapidly developing, loosely tufted, native perennial grass. It is considered short-lived (3-8 yrs.) under most conditions. This cool season, upland species occurs extensively in the western and central United States and Canada. Typical habitats include open woods, prairies, thickets, and moist or dry hillsides from sea level on the coast to high elevations in the Rocky Mountains. It is a common constituent of grassland and forest communities of the western interior valleys, foothills, and mountains of Oregon, Washington, and northern California, as well as coastal headlands.

'Arlington' and 'Elkton' are cultivated varieties of blue wildrye valuable for revegetation and erosion control on recently disturbed sites. Important characteristics include high seedling vigor, rapid establishment, good seed production and ground protection, and the ability to reseed readily. Blue wildrye tolerates full sun to partial shade where the tree canopy has not completely closed. It grows well in woodlots, on logged and burned-over timberland, and along roadsides and the upper banks of streams or riparian zones where soils are not flooded for more than a few days.



'Elkton' blue wildrye (left) is earlier maturing than the lighter colored 'Arlington' (right).

'Arlington' was cooperatively released in 1995 by the U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS); the Oregon Agricultural Experiment Station (OAES), Corvallis, Oregon; and the Washington Agricultural Research Center, Pullman, Washington. It originated from a population growing at an elevation of 200 A near the city of Arlington in Snohomish County, WA. 'Elkton' was released by the NRCS and the OAES in 1997. Its origin is a native stand in Douglas County, OR, near the city of Elkton at an elevation of 400 ft.

Description

Blue wildrye is an erect, medium-coarse, perennial bunchgrass that grows to a height of 35-55 inches. The foliage is basal early in the growing season but primarily up and down the stem at the joints when mature. Seedheads are in the form of long, narrow, bearded spikes (with awns), that turn purple at the onset of ripening. The leaves are lax, 1/4-1/2 inches wide and 4-9 inches long. This species is self-fertile and primarily self-pollinated (60-95%).

'Arlington' and 'Elkton' differ in height, rate of development, and foliage color. 'Arlington' is slightly shorter in stem height and stand longevity. 'Elkton' initiates spring regrowth about one month earlier and matures seed 9-14 (21) days ahead of 'Arlington'. The foliage of 'Arlington', especially the stems, are covered with a white waxy coating which contributes to the plant's blue-green color, a trait lacking in 'Elkton'. Taxonomically, the two are identified as separate subspecies, differing primarily in degree of pubescence.

	'Arlington'	'Elkton'
Subspecies	<i>glaucus</i>	<i>jeponsii</i>
Origin	Snohomish Co., WA	Douglas Co., OR
Stem height	40 inches avg.	48 inches avg.
Foliage color	Blue-green	Grass green
Seeds/lb	160,000 +/-	127,000 +/-
Adaptation	w WA, nw OR	w OR, nw CA
Elevation	0-2000 ft	0-2000 (2500) ft
Maturity	July 1-10	June 14-24
Seed yield	400 lbs/ac avg.	550 lbs/ac avg.

Performance

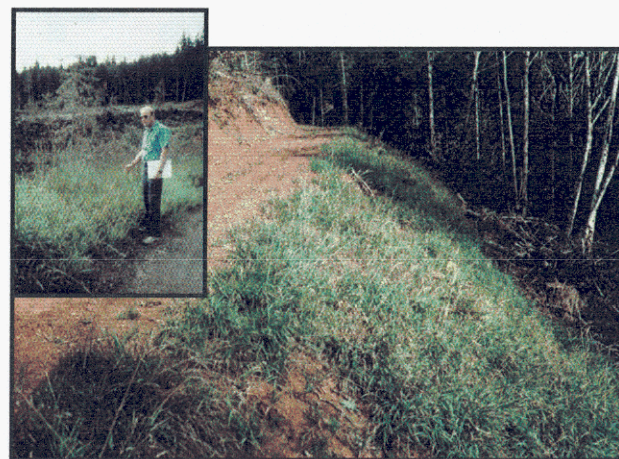
As wild ecotypes of blue wildrye, 'Arlington' and 'Elkton' were not intentionally bred or hybridized but were selected from an original common garden study of 128 populations (accessions) for their adaptation, agronomic performance and maturity differences. 'Arlington' (PI 527333, reg. no. CV-187) and 'Elkton' (PI 593652) were further tested in swards at several locations as NRCS accessions 9019633 and 9019690 respectively, as well as along roadsides and recently disturbed wooded areas in western Oregon and Washington.

'Arlington' and 'Elkton' ranked among the top seven accessions in overall performance, including good plant vigor (both), foliage appearance or fewer visual disease symptoms ('Arlington'), stand longevity ('Elkton'), shorter culm height ('Arlington'), early spring recovery ('Elkton'), and good seed yields (both). Seed yields in both plots and fields averaged 400 lbs/ac for 'Arlington' and 550 lbs/ac for 'Elkton'. 'Arlington' was further selected for its later

maturity and weaker awns, and 'Elkton' for its earlier flowering and seed maturity. 'Arlington' grew taller and produced more seed and above ground biomass when tested in plots near Mt. Vernon, WA, (elevation 150ft) versus Corvallis, OR (elevation 225 ft). 'Elkton' produced more biomass at Corvallis, but seed yields and culm heights were the same at both locations.

Adaptation

'Arlington' and 'Elkton' blue wildrye prefer moderately acid to neutral, well drained soils that are coarse to moderately fine textured: clay loam to silt loam, loamy sand, and gravelly sandy loam. However they will tolerate somewhat poorly drained soils that are not inundated in winter. Mean annual precipitation should exceed 25 inches. The recommended elevation range is 0-2000 A (2500 ft for 'Elkton' in CA).



'Arlington' blue wildrye seeded along a logging road fill slope in Benton County, OR, and Clallam County, WA (upper left).

'Arlington' is primarily recommended for use in the Puget lowlands, Cascade and Olympic Mountains, and Coast Range of Washington. However, it has also performed well in western Oregon. 'Elkton' is recommended for the Cascade and Coast Ranges of Oregon, Willamette and other western interior valleys of Oregon and northwestern California, as well as the Siskiyou-Trinity region. It could be used in extreme southwest Washington as well. This species prefers full sun to partial shade and is not considered saline tolerant.

Uses

'Arlington' and 'Elkton' blue wildrye are used in conservation for erosion control and quick, self-perpetuating cover or site rehabilitation on logging roads, cut-over timberland, burned areas, steep hillsides, and prairies. Establishment is rapid and they may be used as a "pioneer" grass on recently disturbed areas. Other uses include cover under trees in open woods or along the upper bank of riparian zones, wildlife habitat, herbage production, and promotion of native plant diversity. Prior to maturity, blue wildrye is considered fair to good forage for cattle, deer, and elk and poor for sheep. However, the palatability and nutritional value of these varieties for livestock are not fully established.

CAUTION: 'Arlington' or 'Elkton' are not necessarily intended to replace 'local' or on-site sources of native blue wildrye for ecological restoration plantings. NRCS makes no claims concerning the suitability of these selections in native plant restoration efforts. Individuals with such concerns for a particular environment or ecosystem should make their decisions on a case-by-case basis.

Establishment and Management

The recommended drilled seeding rate for most uses is 10 lbs/ac when planted alone. A broadcast rate of 20 lbs/ac should be used on steeper slopes, for weed suppression, or erosion control immediately following soil disturbance or burning. Seed can be broadcast on ashes in the fall following a fire. In mixtures with slower establishing native grasses and forbs, blue wildrye should not exceed 10-20 percent by weight. Otherwise, high seedling densities may outcompete other native species. Consider a soil test and the use of a balanced, starter fertilizer prior to sowing. If planted for herbage, blue wildrye does not withstand heavy grazing well. Use by livestock should be restricted to allow plants to produce some seed at least every other year. A system of rotation-deferred grazing is required. An 8-10 inch stubble should remain after grazing. Close mowing (1-3 inches) in spring will eliminate most stands in 3-5 years.

Seed Production

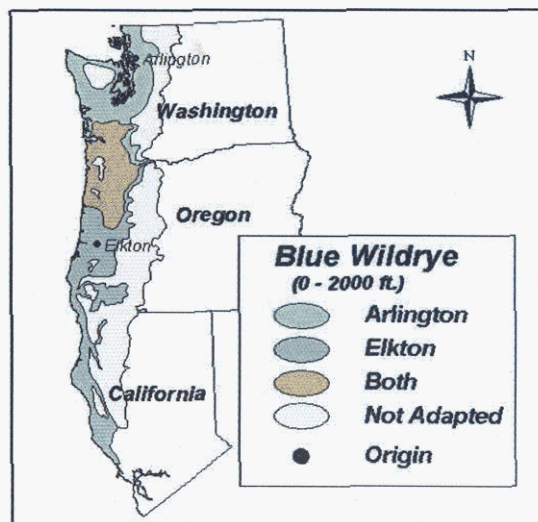
'Arlington' and 'Elkton' blue wildrye should be grown in 8-18 inch wide rows. Mechanical cultivation or shielded spray applications for weed control may necessitate wider rows. Carbon banding has been successfully used for stand establishment in combination with a labeled herbicide. Fall or early spring sowing can result in partial seed crops the first full growing season.

The recommended seeding rate is 8-10 lbs/ac in narrow rows and 3-4 lbs/ac in wide rows. No special scarification or stratification of seed is required. For established stands, apply 20-30 lbs of nitrogen (N)/ac in the fall and 75-100 of N/ac in the early spring. Burning is not needed for post harvest residue management but aftermath should be baled and removed. For more information, refer to "Seed Production of Blue Wildrye" USDA-NRCS Plant Materials Technical Note No. 17. Portland, Oregon. April 1996.

Availability

Seed of 'Arlington' and 'Elkton' blue wildrye is available from seed growers and vendors. Certified seed should be specified. Breeder and/or Foundation seed is available to commercial growers for seed increase from the NRCS Plant Materials Center, 3415 NE Granger Ave., Corvallis, OR, 97330. For more information on where to buy or how to grow and use 'Arlington' and 'Elkton', contact the State Plant Resource Specialist, Pullman, WA, PMC, or NRCS office in your area.

Visit our Plant Materials Internet site at <http://Plant-Materials.nrcs.usda.gov> to find more information on using plants to solve conservation problems.



Recommended Area of Use for 'Arlington' and 'Elkton' blue wildrye

by Dale Darris, USDA-NRCS, July 2001. Map by Ian Reid

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