

***Festuca occidentalis* Hook.**  
western fescue

**Family: Poaceae**



Figure 36. Documented range of *Festuca occidentalis* in northern British Columbia.



Figure 37. Growth habit of *Festuca occidentalis* in cultivation.

***Festuca occidentalis* Hook.**  
**(continued)**

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**Background Information**

*Festuca occidentalis* is frequent in both coastal and interior B.C. south of 56° N, is infrequent northwards to 57° N, but is found east to southwest Alberta. It has a disjunct distribution in Ontario and is found south to Michigan, Wisconsin, Wyoming, Utah and California (Douglas et al. 2001).

**Growth Form:** Tufted bunch grass with a few slender stems, narrow soft basal leaves in tufts, auricles absent, very short ligules (to 0.5 mm), fringed at tips; open fine panicles, drooping at the top (Mackinnon et al. 1992); often with slender black awns, panicle turning white when ripe; mature plant size: 25-70 cm tall. Rooting is often shallow.

**Site Preferences:** Dry to moist forests and forest openings, rocky slopes at low and middle elevations; found on sides of ruts and old burn piles. In northern B.C. it is reported to be shade tolerant to shade intolerant. Found on xeric to mesic, poor to very rich sites in the SBSx or SBSd subzones, xeric poor to very rich sites in the SBSm subzones; on mesic to subhygric, medium to rich sites in the SBPSx or SBPSd subzones, on submesic to hygric, poor to rich sites in the SBPSmc and on submesic to subhygric poor to rich sites in the SBPSmk (Pavlick 1983, Beaudry et al. 1999). Tolerates a minimum of 355 mm and a maximum of 1143 mm annual precipitation; can tolerate minimum temperatures to -42°C (NRCS 2002).

**Seed Information**

**Seed Size:** Length: 3.84 mm (2.30 - 5.69 mm)  
 Width: 1.30 mm (0.99 - 1.60 mm)

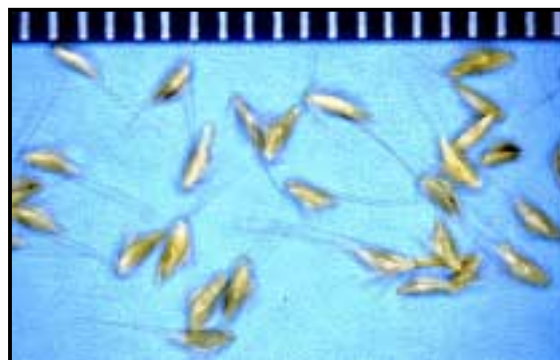
**Seeds per gram:** 3,058 (range: 2,441 - 3,736)

**Volume to Weight Conversion:** 168.4 g/L at 87.3% purity

**Germination Capacity:** At 30°/20° C untreated: 80.8%  
 (55 - 99%)  
 At 25°/15° C untreated: 89.8%  
 (88 - 91%)  
 stratified: 59.4%  
 (41 - 78%)

**Germination Speed:** To first germination: 9.0 days  
 To 50% potential: 9.8 days

**Seed Longevity:** Unknown.



**Figure 38.** Seeds of *Festuca occidentalis*.  
 Rule divisions are 1.0 mm.

**Considerations for Growing**

**Techniques for Seed Production**

**Seed treatment:** Stratification at 5°C for two months resulted in reduced germination capacity, so no pre-germination seed treatment is recommended.

**Soil considerations:** Untreated seed germinates best in cooler soils, finely cultivated.

**Stand establishment:** Loamy firm seedbed recommended; site should be free of all weeds, although grass species can be sprayed with a selective broadleaf herbicide without damage.

**Row spacing:** Unknown; suggest 40-90 cm.

**Seeding density:** 131-246 PLS per linear metre.

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(continued)**

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(Techniques for Seed Production, continued)

*Seeding depth:* 0.6-1.2 cm is recommended for *Festuca saximontana* and *F. idahoensis*, but since *F. occidentalis* seeds are smaller, 0.6 cm should be considered a maximum. Early spring seeding is best (Pahl and Smreciu 1999).

*Stand maintenance:* Regularly cultivate rows and spot spray with herbicide to keep plot weed free; annual fertilization with low N formulations may extend the life of the plot; stand may be rejuvenated by mowing as suggested by Pahl and Smreciu for *F. saximontana*. Plants are nevertheless short-lived, requiring that stands be re-established every three years.

Harvesting and Seed Processing

*Dates of selective harvesting* in the Bulkley Valley of northwestern B.C. have ranged from July 31st to September 7th. This species shatters moderately easily.

*Hand clipping:* Harvest manually with a hand sickle or clippers when the seeds are ripe, followed by drying outdoors in the sun, or indoors in a warm dry area.

*Vacuum:* It is unknown at present if seed can be harvested directly from the stalk with a vacuum. However, since seed shatters relatively easily, we recommend that scattered seed be vacuumed from weed cloth or plastic between rows immediately after any method of harvesting.

*Seed stripper:* Mechanical harvest with a soft-threaded seed stripper head may be feasible but has not been tested.

*Combine/thresher settings:* Use rotary flail; hold seed heads against flail until seed is removed.

*Seed cleaning:* Run through fanning mill twice using the following screens for the first run: prescreen 2.5 x 19 mm slot, top 1.8 x 12.7 mm slot, bottom 1.2 x 7.1 mm slot. The second time through, use a prescreen measuring 1.2 x 7.1 mm slot, a top screen 1.8 x 12.7 mm slot, and a bottom blank.

*Storage requirements:* Cool dry conditions.

**Considerations for Use in Revegetation**

- *Festuca occidentalis* has fast reliable germination, with some seed production in the first year. Rapid germination and early growth makes this species a useful component of seed mixtures where rapid green-up and erosion control is required.
- Plant longevity is typically only 2-3 years, so longer-lived plants must be included in any revegetation mixture to take their place as they senesce.
- *Festuca occidentalis* is found growing in association with *Pinus contorta*, *Picea* sp. and *Populus tremuloides* in much of its northern range (Pavlick 1983).
- It is possibly a valuable forage grass since *Festuca idahoensis* is considered one of the most palatable forages in the association where it grows (Pavlick 1983, Pahl and Smreciu 1999). *Festuca idahoensis* and *F. occidentalis* are closely related, though *F. occidentalis* is of smaller stature and probably has lower overall productivity even if it has similar palatability.
- This species has a high tolerance to drought and fire, and it has low nutrient requirements (NRCS 2002).

