

***Calamagrostis rubescens* Buckl.
(continued)**

pinegrass

Background Information

Calamagrostis rubescens is found east to Alberta and south to Colorado, Utah, Nevada and California; it is common in southern British Columbia, east of the Coast-Cascade Mountains (Douglas et al. 2001b). It is found at lower elevations and warmer topographic exposures in northern B.C. Rose et al. (1998) report that its range extends east into Manitoba.

Growth Form: Rhizomatous grass with a reddish base, ring of hairs where the leaf meets the stem; leaves 2-4 mm wide, collars hairy, auricles absent; ligules to 5 mm long; dense panicle of yellowish green to purple inflorescence 7-15 cm long; mature plant size is 60 - 100 cm tall (Haeussler et al. 1990, MacKinnon et al. 1992).

Site Preferences: Mesic to dry rocky or sandy sites, dry woods, and clearings at low to medium elevations in the southernmost part of the northern Interior (Douglas et al. 1994, MacKinnon et al. 1992). In B.C. it is reported to be tolerant of moderate winter temperatures and frost, tolerant of low nitrogen levels once it is established, tolerant of drought and high air temperatures, shade tolerant to shade intolerant (Beaudry et al. 1999). It is found on xeric to subhygric very poor to rich sites in the SBSx or SBSd subzones, xeric to mesic, very poor to rich sites in the SBSm subzones and xeric poor sites in the SBSw or SBSv subzones; subxeric to submesic very poor sites in the BWBS zone; subxeric to submesic poor to very rich sites in the ESSF zone; xeric to subhygric very poor to very rich sites in the SBPSx or SBPSd subzones and in the SBPSmk (Banner et al. 1993, Beaudry et al. 1999). It is a seral species, invading and dominating on suitable clear-cut sites until the canopy closes, but remains dominant in the understory of open-canopied lodgepole pine and Douglas-fir stands (Champion 2000).

Seed Information

Seed Size: Length: 4.67 mm (3.58 - 6.13 mm)
Width : 0.85 mm (0.67 - 1.00 mm)

Seeds per gram: 8,730 (range: 7,191 - 9,500)

Volume to Weight Conversion: Unknown

Germination Capacity: At 30°/20° C untreated: 19.7% (6- 42%)
At 25°/15° C untreated: 21.0%

Germination Speed: To first germination: 12.1 days
To 50% potential: 15.5 days

Seed Longevity: Unknown

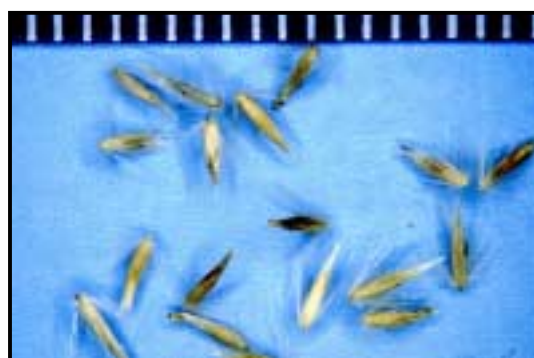


Figure 27. Seeds of *Calamagrostis rubescens*.
Rule divisions are 1.0 mm.

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Considerations for Growing

Techniques for Seed Production

Seed treatment: No pre-germination treatments required.

Soil considerations: Establish on loamy, well prepared soil with a firm seedbed.

Stand establishment: Site should be free of all weeds. Broadleaf weeds can be controlled with the use of a selective broadleaf herbicide without damage to the grass seedlings.

Row spacing: Unknown, suggest 75-120 cm under dryland conditions, 30-90 cm under irrigation.

Seeding density: Unknown at present, suggest 60-100 PLS per linear metre (Smith and Smith 2000).

Seeding depth: 0.6 - 1.2 cm.

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. *Calamagrostis rubescens* seems much more sensitive than *C. canadensis* to competition from weeds; stands were not easy to maintain in the Bulkley Valley of northwestern B.C.

Harvesting and Seed Processing:

Hand clipping: Harvest with a hand sickle or clippers when seeds are ripe (Pahl and Smreciu 1999), 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 stock with a vacuum. If necessary, use a vacuum immediately after manual or mechanical harvesting to harvest seed that scatters. Plastic placed between the rows will assist this type of salvage harvesting.

Seed stripper: Harvest mechanically when seeds are ripe (Pahl and Smreciu 1999), followed by drying outdoors in the sun, or indoors in a warm dry area.

Combine/thresher settings: 1548 rpm with 5 mm gap.

Seed cleaning: Put through fanning mill after threshing: top screen, 4 x 19 mm slot; bottom screen, 4.98 mm round; use hand to rub the seed through the screens, as the fluff balls together.

Storage requirements: Cool dry conditions.

Considerations for Use in Revegetation

- *Calamagrostis rubescens* is not considered highly palatable to grazing animals, except for new spring growth (MacKinnon et al. 1992).
- If grazing is a consideration, nitrogen applications of 200 and 300 kg/ha will increase forage yield and crude protein concentrations. Phosphorous and sulfur should be applied at 55 kg/ha for increased forage value (Champion 2000).
- In Alberta this species is reported to grow on medium to coarse textured mesic to dry soils and to be drought tolerant (Gerling et al. 1996).
- In B.C. it is found on sites with a wide variety of well drained loamy to coarse textured soils (Haeussler et al. 1990).
- The fine root system of this species can provide excellent control of surface soil erosion (Haeussler et al. 1990).
- This species tolerates trampling well, so is a good candidate for use on or near trails (*Cole 1978, 1981).
- *fide* Champion 2000.

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Notes

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