

Scientific Name: *Calamagrostis stricta* (Timm) Koeler **Family:** *Poaceae*

Common Name: boreal reed grass, northern reed grass, slimstem reedgrass

Plant Description

Rhizomatous monoecious perennial native grass with smooth erect stems up to 90 cm, growing in dense tufts; green blades often rolled inward, up to 5 mm wide; inflorescence is an egg or lance-shaped compact panicle 5 to 12 cm long and 5 to 20 mm wide; spikelets laterally compressed, 2 to 4.5 mm long, 1 to 2 mm wide, one floret per spikelet; glumes smooth and sub-equal, first glume with a tail-like appendage at apex; lemma 2 to 4 mm long, surface

dull with hairs on and between the veins, apex notched with bristle-like appendages and with an awn 4 to 4.5 mm long; palea 2 to 4 mm long with smooth veins; florets yellow with 2 styles, 3 anthers 2 to 2.5 mm long, perianth reduced to lodicules (Aiken et al. 1995).

Fruit/Seed: Indehiscent, brown caryopsis (grain) without a stalk (Aiken et al. 1995).

Habitat and Distribution

Found in imperfectly drained areas such as marshes, damp meadows, along stream banks and lake shores (Aiken et al. 1995). High water use (low drought tolerance), partly shade tolerant, minimum root depth of 17 cm (USDA NRCS n.d.).

Seral Stage: Early to mid seral.

Soil: Acidic, wet to mesic (Gerling et al. 1996), sandy soil (Aiken et al. 1995), pH between 5.5 and 7.5; has a moderate tolerance to salinity and low drought tolerance (USDA NRCS n.d.).

Distribution: Circumpolar; found in all Canadian provinces, Greenland and most of the US, to Arizona in the west and West Virginia to the east (USDA NRCS n.d.).

Alaska, Yukon to Devon Island south to Oregon, Utah, Colorado, southern Saskatchewan, North Dakota, Great Lakes (Moss 1983).

Phenology

Flowers in late spring, May to June, with fruits/seeds maturing in summer (Rook n.d.).

Pollination

Wind pollinated (Rook n.d.).



Calamagrostis stricta including inflorescence and rhizome



Seed Dispersal

Wind dispersed with some animal dispersal by granivores.

Genetics

Primarily $2n=28$ (Greene 1980) but can be $2n=56$, 70 or 84 (Moss 1983).

Symbiosis

Many species of *Calamagrostis* have associations with arbuscular mycorrhizae (Malcova et al. 1999, Puschel et al. 2007, Thormann et al. 1999).

Seed Processing

Collection: Cut stems and allow to dry before threshing.

Seed Weight: 0.17 to 0.22 g/1,000 seeds (Smreciu et al. 2002).

0.086 g/1,000 seeds (Pickseed 2010).

0.032 g/1,000 seeds (USDA NRCS n.d.).

Harvest Dates: Collected late August to early September in northern Alberta and Saskatchewan.

Cleaning: Thresh, shake or rub to separate seed from chaff. Winnow, using blower or screens, to remove chaff.

Storage Behaviour: Likely orthodox, dry to 3% relative humidity and store in sealed containers.

Storage: Store dry at room temperature.

Longevity: Seed remains viable at least four years at room temperature.

Propagation

Natural Regeneration: Spreads primarily by rhizomes, less so by seed (Rook n.d.).

Germination: 70% germination after stratification (Smreciu et al. 2002).

Pre-treatment: 30 days cold stratification (Smreciu et al. 2002).

Direct Seeding: 34 seedlings emerged from 200 seeds/row m (Smreciu et al. 2002).

Planting Density: 4,500 to 7,300 plants per hectare (USDA NRCS n.d.).



Seed Rate: Seed crops can be grown on upland sites in areas with good soils and high annual precipitation (Tannas 2001).

Vegetative Propagation: In cultivation it is best propagated by root cuttings if soil is dry enough to support machinery (Tannas 2001).

Aboriginal/Food Uses

No known uses.

Wildlife/Forage Usage

Wildlife/Livestock: Moderately palatable to grazers and browsers (USDA NRCS n.d.); used as forage by wood buffalo (Strong and Gates 2009) and lesser white-fronted geese (Markkola et al. 2003).

Grazing Response: *C. stricta* is an increaser under moderate grazing conditions. Seed heads are usually ungrazed in these conditions. It also reproduces rapidly from rhizomes (Tannas 2001). Decreaser when grasslands are grazed heavily (Tannas 2001).

Reclamation Potential

Can be used to reclaim wet meadows, banks and shore sites (Gerling et al. 1996).



Commercial Resources

Harvest Methods: Although untested, it is likely *Calamagrostis* can be threshed like other grain crops.

Availability: No known commercial sources.

Cultivars: No known cultivars.

Notes

C. stricta is listed as 94% intact (less occurrences than expected) in the Alberta oil sands region (Alberta Biodiversity Monitoring Institute 2014). There is some discussion regarding the taxonomy of the subspecies of *Calamagrostis stricta* and related *Calamagrostis* species as these may form a morphologically indistinct complex circumboreal in distribution (Greene 1980). There are several valid subspecies. In Alberta, *C. inexpansa* and *C. stricta* are both present (ITIS 2010, USDA NRCS n.d.). *Calamagrostis stricta* may hybridize with other *Calamagrostis* species in the wild (Crackles 1997).

Photo credits

Photo 1: Wikimedia commons 2010.

http://upload.wikimedia.org/wikipedia/commons/4/42/Calamagrostis_stricta.jpg [Last accessed May 22, 2013].

Photo 2: Wikimedia commons 2010.

http://upload.wikimedia.org/wikipedia/commons/6/6e/Calamagrostis_stricta_02.jpg [Last accessed May 22, 2013].

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