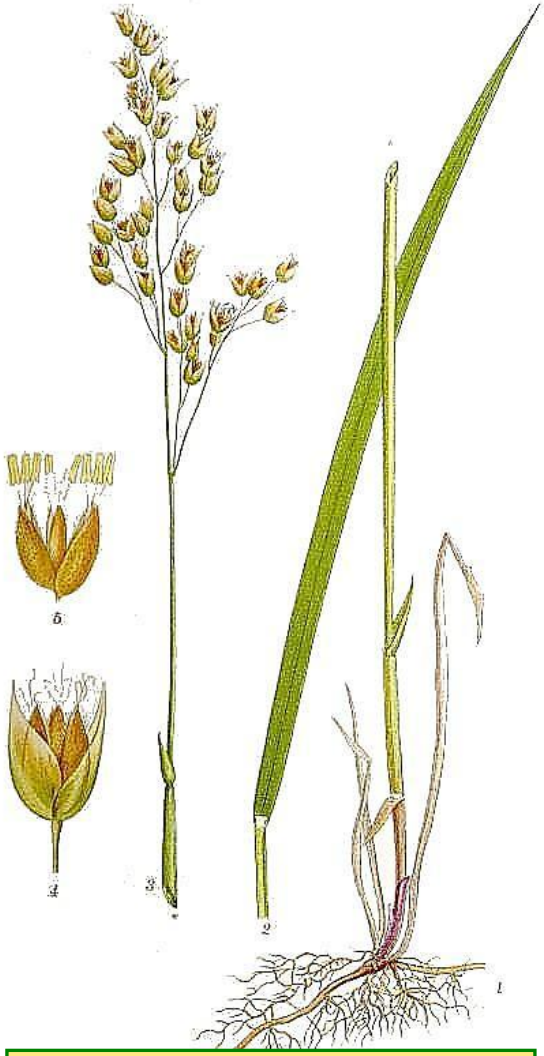
Scientific Name: Anthoxanthum nitens (Weber) Y. Schouten & Veldkamp

Family: Poaceae

Common Names: sweetgrass, vanilla grass, holy grass



***Anthoxanthum nitens* rhizome (1) blade, (2) flowering culm, (3) pistillate flower, (4) and staminate**

Plant Description

Perennial, sweet, vanilla-smelling grass with flat leaves, extensive rhizomes and small, bronze-colored spikelets (Moss 1983). Culms tufted, 10 to 40 cm tall, with leafy shoots; blades 2 to 20 cm long, flat to rolled, tapering to a blunt point, dark green; slightly roughened to smooth and shiny beneath, smooth and slightly roughened above; veins prominent on both sides and white mid-vein below; margins roughened; rolled at emergence; sheaths round, split, often purplish at base (Tannas 2004).

Fruit/Seed: Three flowered, the terminal floret perfect, the others are staminate or neutral; staminate lemma awnless, firm, brown, boat shaped, hairy (Moss 1983).

Habitat and Distribution

Habitat: Wet meadows, around sloughs in fescue and montane grassland (Tannas 1997). Moist to dry, open areas (Moss 1983).

Seral stage: Is usually found in mid-successional communities. It can tolerate some disturbance (Rook 2000).

Soils: Moist, sandy to heavy clay soils (Walsh 1994). Saline tolerant (Walsh 1994).

Distribution: Circumpolar: Alaska, Yukon, District of Mackenzie to Hudson Bay, northern Quebec, Newfoundland south to Oregon, Nevada, Arizona, South Dakota, Great Lakes (Moss 1983).

Phenology

Flowers form from May to June and the seed is ripe July to early August (Walsh 1994).

Pollination

Wind pollination (NANPS 2003).

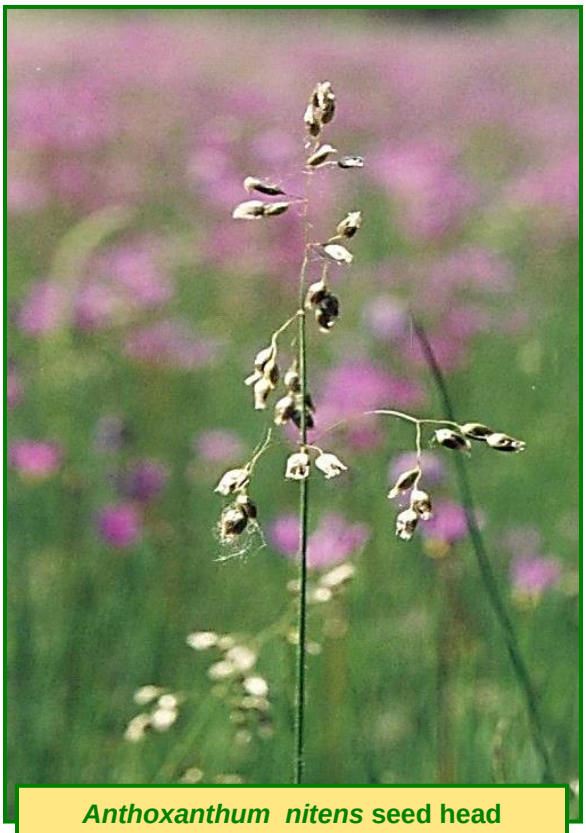
Seed Dispersal

Wind, water and on animal fur (Queensland Government 2013).

Genetics
2n=28, 42, 56 (Moss 1983).

Symbiosis
No literature found.

Seed Processing
Collection: Sweetgrass inconsistently produces seeds. Seeds can be collected in summer by hand picking (Winslow 2001).



***Anthoxanthum nitens* seed head**

Seed weight: 0.41 g/1,000 seeds (Stevens and Winslow 2010). 0.8 to 1.2 g/1,000 seeds (Smreciu et al. 2002).
Harvest Dates: Late June to early August (Walsh 1994).
Cleaning: Dry seed before crushing. Use blowers or screens to remove chaff from seeds (Smreciu et al. 2002).
Storage: Store dry at room temperature (Smreciu et al. 2002).
Longevity: Seed maintains viability up to three years (Smreciu et al. 2002).

Propagation
Natural Regeneration: Can produce by seed or rhizomes (vegetative). New plants are commonly produced vegetatively as many seeds are non-viable (Rook 2000).
Pre-treatment: None required (Smreciu et al. 2002). *Anthoxanthum nitens* requires a period of cold temperatures before it will germinate from seed (Stevens and Winslow 2010). Royal Botanic Garden Kew (2008) stratified the seed at 6°C for 8 weeks.
Vegetative Propagation: Most successful method is by the division of rhizomes (Rook 2000).
Germination: Seed germination tests have averaged 25% to 30%.
100% germination with pre-treatments when germinated on a 1% agar media for 2 weeks at temperatures of 23/9°C (12 hrs day / 12 hours night) (Royal Botanic Gardens Kew 2008).
Plant late fall, late winter, or early spring while keeping seeds moist until seedling emergence, in about 10 to 14 days (Stevens and Winslow 2010). Seedlings grew and survived well in a greenhouse trial (Smreciu et al. 2002).

***Anthoxanthum nitens* seeds**

Aboriginal/Food Uses

Food: Seeds are edible though they were not used as food. Essential oils from the leaves were used as a vanilla flavor additive in candy and drinks (MacKinnon et al. 2009).

Medicinal: Made into medicinal tea for treatment of coughs, sore throat, fever, venereal infection, chafing, windburn, internal pains and sore eyes. Also used to stop vaginal bleeding and help with childbirth. Smoke was also inhaled for cold relief (MacKinnon et al. 2009).

Other: Sweetgrass is a very important plant to the First Nations people in Canada. It is commonly braided and burned as incense; used in ceremonies to cleanse and purify people as well as to bring blessings and protection. Chewed to increase endurance during ceremonial fasting. Used to perfume clothing, repel insects and leaves soaked in water made a sweet hair rinse (MacKinnon et al. 2009). Grass blades were also used for making baskets, mats and sewing material (MacKinnon et al. 2009).

Wildlife/Forage Usage

Wildlife: Less palatable than other grasses because it contains a chemical called coumarin, which causes the grass to have a bitter flavor to grazing animals (Agriculture and Agri-Food Canada 2012).

Livestock: Has good forage value (Tannas 2001).

Grazing Response: Increaser (Wroe et al. 2003).

Reclamation Potential

Deep vigorous rhizomes make it useful as erosion control and slope stabilizer (Walsh 1994).

Commercial Resources

Availability: Are available in Alberta Nurseries (ANPC 2010).

Uses: Medicinal plant (Agriculture and Agri-Food Canada 2012).

Contains a strong anti-oxicidents that can be used to prevent the breakdown of lipids in commercial processing and storage of food products (Grigonis et al. 2004).

Notes

Synonyms include *Hierochloe odorata* (ITIS n.d.).

Photo Credits

Photo 1: Prairie Moon Nursery 2011.

Photo 2: Project Runeberg 2009. Wikimedia Commons.

Photo 3: Wild Rose Consulting, Inc. 2010

Line Drawing: Carl Lindman, Carl Axel Magnus Lindman @ Wikimedia commons 2013

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