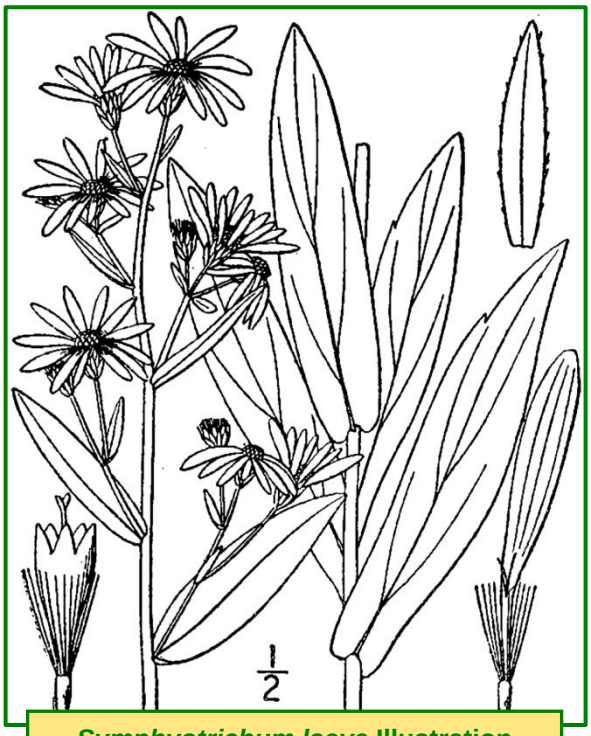
Scientific Name: *Symphyotrichum laeve* (L.) Á. Löve & D. Löve
Family: *Asteraceae*

Common Names: smooth aster, smooth blue aster, purple aster



***Symphyotrichum laeve* Illustration**

Habitat and Distribution

Dry open grasslands and moist sandy forests (Sullivan 1992).

Seral Stage: Occurs at all seral stages. Very common as a colonizer of disturbed sites (Sullivan 1992).

Soil: A wide variety of soil types mesic to xeric (Sullivan 1992).

Distribution: British Columbia to Ontario, southern Quebec south to Washington, New Mexico, Kansas, Missouri, Georgia, Connecticut (Moss 1983).

Phenology

Flowers from approximately the beginning of July to the end of August. Seed is harvested the middle of September (Wick et al. 2008).

Pollination

Flies, butterflies, bees.

Seed Dispersal

Seed born on pappus and easily spread by wind.

Plant Description

Perennial with short rootstocks; stems mostly 30 to 100 cm tall, hairless; leaves numerous alternate, oblong to lance shaped, 2 to 10 cm long, 10 to 45 mm wide; lower leaf stalks are winged, upper leaves stalkless and clasping at the stem; margins smooth to toothed; inflorescence borne in panicle 2 to 3 cm across; disc florets numerous, yellow; ray florets 15 to 25, blue or purple; bracts are sharp pointed, green with a white base, borne in two or more overlapping rows (Royer and Dickinson 2007).

Fruit: Achenes, pappus of pale brown capillary bristles (Royer and Dickinson 2007).

Seed: The fruit is a one-seeded achene (Sullivan 1992, Wick et al. 2008).

***Symphyotrichum laeve* flowers**

Genetics

2n=48 (Moss 1983).

Symbiosis

None known.

Symphyotrichum laeve seed

Seed Processing

Collection: Mature heads may be broken off or cut and placed in breathable bags.

Seed Weight: 0.20 g/1,000 seeds. Wick et al. (2008) weighed seed at 0.41 g/1,000 seeds.

Harvest Dates: Seed was collected in Alberta from Mid-August early September.

Cleaning: Seeds are hand collected when achenes separate easily from the receptacle. Seeds are tan at maturity. Seeds are collected in paper bags and kept in a well-ventilated drying shed prior to cleaning (Wick et al. 2008).

Storage Behaviour: Orthodox; seed may be dried down to 15% relative humidity prior to extended storage under freezing temperatures (Royal Botanic Gardens Kew 2008).

Storage: At 3 to 5°C in sealed containers (Wick et al. 2008).

Longevity: Seed longevity is up to seven years at storage conditions stated above (Wick et al. 2008).

Soil seed banking of this species is not apparent (Sullivan 1992).

Propagation

Natural Regeneration: Primarily by seed as well as short rhizomes (Sullivan 1992). Moderate spread by seed (ALCLA Native Plants n.d.).

Germination: Seed germinates 80% to 100% in 10 to 15 days at 22°C. Germination to true leaf stage is seven to 15 days. Seedlings are thinned at this stage (Wick et al. 2008).

Unstratified seed takes between 7 to 20 days to germinate (Sullivan 1992).

Pre-treatment: Cold, moist stratification. Mix seed with moist but not wet, sterile growing medium (Wildflower Farm, Inc. n.d.). Place mixture in a labeled, sealed plastic bag and store in refrigerator for six to eight weeks; some seed may germinate in the storage bag if moist stratified too long. If sprouting occurs, plant immediately (Wildflower Farm, Inc. n.d.).

Another method is to sow seed outdoors in late autumn so that they may overwinter (Wildflower Farm Inc. n.d.).

Stratification lengths used have varied from 75 days to five months on high elevation seed sources and was not necessary for lower elevation sources (Wick et al. 2008). Containers filled in late fall and irrigated thoroughly prior to winter stratification, covered with a light layer of material (milled sphagnum, peat, perlite and vermiculite with Osmocote controlled release fertilizer) yielded reasonable emergence (Wick et al. 2008).

Wild Rose Consulting, Inc. found no pre-treatment necessary on seeds collected in northeastern Alberta.

Direct Seeding: Wild Rose Consulting found an average of 1% emergence from fall sown seed on three reclaimed sites in northeastern Alberta.

Seed Rate: 11 g seed/m^2 (Sullivan 1992).

Vegetative Propagation: No literature found.

Micro-propagation: No literature found.

Aboriginal/Food Uses

Medicinal: The root can be chewed to treat toothaches and the pain of teething, and can be made into tea to treat fevers (induces sweating) and to help the organs of women to return to normal function after childbirth (Marles et al. 2000).

***Symphyotrichum laeve* adult plant**

Wildlife/Forage Usage

S. leave have high nutrient contents that decrease as they mature throughout the growing season (Sullivan 1992).

Wildlife: Grazed by white tailed deer (Sullivan 1992).

Livestock: Grazed by livestock (Sullivan 1992).

Grazing Response: Decreaser (Sullivan 1992). Plants damaged by grazing respond with increased growth the following season (Sullivan 1992).

Reclamation Potential

Has been used to revegetate ditches along the sides of roads and highways and it is also recommended to be seeded or planted to reclaim native mixed-grass and tall-grass prairie sites (Sullivan 1992).

Commercial Resources

Availability: Available from Alberta nurseries (ANPC 2010).

Cultivars: Bluebird, Purple burst, Kurts, Calliope, Geyer's Aster (Dave's Garden n.d.). These cultivars are not suitable for use in reclamation.

Uses: As a garden ornamental (ANPC 2010).

Notes

Synonym: *Aster laevis* (Budd and Best 1969, ITIS n.d.).

Photo Credits

Photo 1: Walter Muma @ Ontariowildflowers.com 2011.

Photo 2: Prairie Moon Nursery 2011.

Photo 3: Walter Muma @ Ontariowildflowers.com 2011.

Line Drawing: Britton, N.L. and A. Brown 1913 @ Wikimedia Commons.

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