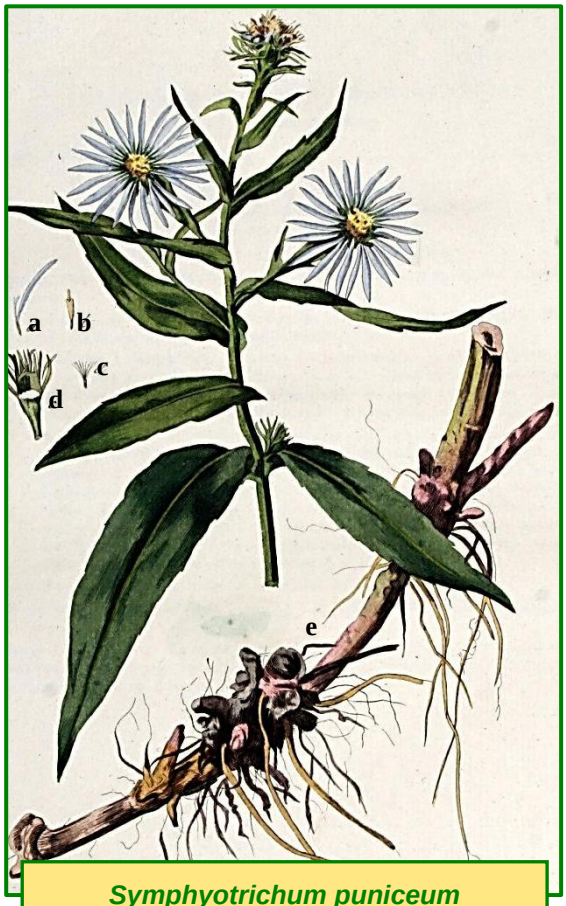
Scientific Name: *Symphyotrichum puniceum* var. *puniceum* (L.) Á. Löve & D. Löve

Family: *Asteraceae*

Common Names: purple stem aster



Symphyotrichum puniceum **illustration a. petal b. seed c. pappus d. empty seed head e. rhizome**

Plant Description

Perennial herb growing from thick rhizome, stout stem 0.5 to 1.5 m high, reddish purple, simple or branching above, with spreading hairs; alternate lanceolate to oblong leaves 6 to 16 cm long, 1 to 2 cm wide, sessile, distantly serrate or occasionally entire, hairy beneath and hairy leaf midribs; numerous flower heads in leafy cluster, 30 to 60 ray flowers blue to purplish 8 to 16 mm long, disc flowers yellow; slender loose bracts, involucres 6 to 12 mm high (Moss 1983).

Fruit/Seed: Hairy achenes with white pappus hairs.

Habitat and Distribution

Fairly common in swamps and marshy ground (Moss 1983). Found in wet, grassy roadside ditches. Moderately shade tolerant.

Seral Stage: Mid-successional species.

Soil: Requires moist soil and can grow in nutritionally poor, light to heavy textured soils (Plants for a Future, n.d.).

Distribution: Fairly common in boreal forest, across prairies; north to Lake Athabasca. Alberta to Newfoundland south to South Dakota, Kansas, Iowa, Illinois, Alabama, Georgia (Moss 1983).

Phenology

Flowers from July to November. Seeds ripen in August through September. Late flowers often fail to produce seeds due to a lack of pollination.

Symphyotrichum puniceum **in flower**

Pollination

Flowers are pollinated by bees, flies, beetles and Lepidoptera (moths and butterflies).
Purple stem aster is self-fertile (Plants for a Future n.d.).

***Symphyotrichum puniceum* seed**

Seed Dispersal

Seed born on pappus and easily spread by wind.

Genetics

2n=16 (Moss 1983).

Seed Processing

Collection: Hand pick; entire stems can be cut and dried to allow additional seed ripening.
Seed Weight: 0.14 to 0.23 g/1,000seeds (0.19 average).
Harvest Dates: August in northeastern Alberta.
Cleaning: Pull seeds from seed heads by hand. Rub seeds with pappus between corrugated rubber in a box. Sieve to remove seeds from chaff using appropriate size screens. Small chaff and dust can be removed by winnowing.
Alternately, pappus with attached seeds can be placed on a sieve with opening size large enough to let seeds through stacked on a sieve that will catch the seeds. Place a smaller sieve over the top sieve and direct a strong flow of air (such as that produced by a reversed vacuum) through the top sieve. Seeds will be removed from the pappus and lodge in the small mesh sieve.
Storage Behaviour: Orthodox; seeds can be dried, without damage, to low moisture contents, and their longevity increases with reductions in both moisture content and temperature (Royal Botanic Gardens Kew 2008).
Storage: 79% viability following drying to 15% moisture content and freezing for 31 days at -20°C (Royal Botanic Gardens Kew 2008).
Longevity: Some germination has been recorded in six-year-old seeds stored at room temperatures.

Propagation

Natural Regeneration: Spreads slowly by seed and by rhizomes (ALCLA Native Plants n.d., USDA NRCS n.d.).
Germination: 25% germination in 30 days with fresh, 1 or 2 year old seed from northeastern Alberta. 75% germination on 1% agar media germinated at temperatures of 25°C in 8 hrs of light and 16 hours dark (Royal Botanic Gardens Kew 2008).
Pre-treatment: 30 days cold stratification.
Direct Seeding: No literature found.
Vegetative Propagation: Can be propagated by division in spring or autumn (Plants for a Future, n.d.). Leafy rhizome cuttings survive well when planted on a moist reclaimed site in northeastern Alberta (Smreciu, et al 2008).
Micro-propagation: No literature found.

Aboriginal/Food Uses

Food: No literature found.

Medicinal: Aboveground parts are dried and boiled to make a decoction to treat kidney problems, chills and cold sweats when drunk repeatedly. If collected when plants are in flower, the stems, leaves and flowers can be used to treat headaches. Dried roots can be mixed with tobacco or made into a powder and inhaled to treat headaches or chewed and applied to sore teeth. Roots can be used as a heart medicine, a diuretic, emetic tea, medicine for sore kidneys, fever, teething sickness, failure to menstruate, recovery after childbirth and facial paralysis. Purple stem aster has proven anti-inflammatory properties (Marles et al. 2000).

Reclamation Potential

Spreads rapidly and forms large colonies in wet meadows and ditches of northeastern North America (Taylor and Hamblin 1976).

Commercial Resources

Availability: Occasionally small amounts of seed are offered by nurseries or seed producers in Alberta.

Cultivars: None are known.

Notes

Synonym *Aster puniceus* L.

Symphyotrichum puniceum is listed as 96% intact (less occurrences than expected) in the Alberta oil sands region (Alberta Biodiversity Monitoring Institute 2014).

Photo Credits

Photo 1: Robert H. Mohlenbrock. 1995 @ USDA NRCS.

Photo 2: Prairie Moon Nursery 2013.

Line drawing: Christiaan Sepp @ Wikimedia commons 2013.

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