

Scientific Name: *Drosera rotundifolia* L.

Family: *Droseraceae*

Common Names: round-leaved sundew



Drosera rotundifolia leaves with sticky insectivorous leaves.

Plant Description

Insectivorous, flowering stems 10 to 20 cm in a rosette of 4 to 12 leaves; round, basal leaves, 3 to 10 cm long, 6 to 10 mm across, covered with sticky red hairs; raceme flower cluster, 3 to 10 flowered; flowers are white with 5 sepal, 5 petals, 4 to 8 stamens and 1 pistil (Royer and Dickinson 2007).

Fruit: Capsule that splits into 3 sections, 3 to 5 mm long that contains many seeds (Crowder et al. 1990, Royer and Dickinson 2007).

Seed: Numerous, small, smooth dark brown and spindle shaped (Crowder et al. 1990, Moss 1983).

Habitat and Distribution

Swamps and bogs (Moss 1983). It is almost always associated with sphagnum moss (Lahring 2003). Shade intolerant (Matthews 1994).

Seral Stage: Mid to late seral (Matthews 1994).

Soil: Prefers low nutrient environments and can tolerate very acidic soils (pH 3.2 to 7.3); no tolerance to salt (International Carnivorous Plant Society 2006, Lahring 2003, Matthews 1994).

Distribution: Circumpolar. Alaska, Yukon, District of Mackenzie to Hudson Bay, Newfoundland south

to California, Nevada, Idaho, Montana, New Dakota, Great Lakes, Appalachians, Alabama, Florida (Moss 1983).

Phenology

Flowers bloom from June to September only during the day, one per day starting from the bottom of the inflorescence (flowers are indeterminate). The flowers self-pollinate during the night (Matthews 1994).

Seeds start to appear in July and ripen successively into the late fall (Matthews 1994).

Pollination

By insects or wind (Matthews 1994).

Seed Dispersal

Water and possibly wind and birds (Crowder et al. 1990).



Drosera rotundifolia flower

Genetics

$2n=20$ (Moss 1983).

Symbiosis

Vesicular mycorrhiza reported (Crowder et al. 1990).

Seed Processing

Collection: Cut the flower stalk off at the base when the stalk is completely brown. Be aware that seed at this stage will start to rot if left too long (May n.d.).

Seed Weight: 0.02 g/1,000 seeds (Royal Botanic Gardens Kew 2008).

Harvest Dates: Seeds are indeterminate and can be harvested in late summer and into the fall (Matthews 1994).

Cleaning: Seed can be cleaned using fine screens (International Carnivorous Plant Society 2006).

Storage Behaviour: Possibly orthodox (Royal Botanic Gardens Kew 2008).

Storage: *Drosera* ssp. seed has remained viable up to 10 years stored at temperatures around 4 to 5°C (May n.d.).

Longevity: Seeds were found to survive 1 to 5 years in the soil seed bank (Royal Botanic Gardens Kew 2008).

Propagation

Natural Regeneration: Reproduces vegetatively by the production of plantlets or when axillary buds below ground begin to produce a second rosette (Matthews 1994).

Also reproduces through seed (Matthews 1994).

Germination: 1 to 2 months after sowing in temperatures of 20°C (Plants for a Future n.d.). Plants require light to germinate (do not bury the seed in the soil) (May n.d.).

Germination can take anywhere from 2 to 7 weeks depending on the age of the seed (May n.d.).

Seeds achieved 100% germination when germinated on 1% agar with 250 mg/L gibberellic acid at 20°C (8 hours/day 16 night) with pre-treatments (Royal Botanic Gardens Kew 2008).

84% germination was reached when seed was sown on 1% agar and 101 mg/L potassium nitrate at 20°C (8 day /16 night) with warm and cold stratification (Royal Botanic Gardens Kew 2008).

Long fibered or live sphagnum moss, coarse silica sand, and perlite for propagation (International Carnivorous Plant Society 2006).

Pre-treatment: Requires 2 to 6 weeks of cold stratification (May n.d.). Seed scarification may also

assist germination (Royal Botanic Gardens Kew 2008).

Warm stratification at 20°C for 8 weeks and cold stratification at 5°C for eight 8 weeks on 1% agar (Royal Botanic Gardens Kew 2008).

Vegetative Propagation: *Drosera* sp. can be propagated from cuttings (Dave's Garden 2011).

Micro-propagation: Have been propagated by *in vitro* methods for commercial preproduction (Bobák et al. 1995).



***Drosera rotundifolia* catching a fly**

Aboriginal/Food Uses

Food: No literature found.

Medicinal: Used to treat many respiratory disorders including asthma and tuberculosis, soothe sore throats and cough. *D. rotundifolia* is believed to have an anti-inflammatory, antispasmodic, antibacterial and anti-angiogenic properties. Used to treat warts and corns (MacKinnon et al. 2009).

Wildlife/Forage Usage

Wildlife: Eaten before they flower by moose (Matthews 1994).

Livestock: No literature found.

Grazing Response: Unknown but it has been found in fields that have been grazed by both cattle and sheep (Matthews 1994).

Reclamation Potential

Drosera rotundifolia tolerates low nutrient conditions and prefers acidic soils. Wild Rose Consulting has

observed *Drosera* growing on hydrocarbon heavy soils in Fort McMurray.

Commercial Resources

Availability: No seed available for commercial use.

Cultivars: 'Charles Darwin' (International Carnivorous Plant Society 2006).

Uses: *D. rotundifolia* is used in 200 to 300 registered medications in Europe, mostly cough medicines (MacKinnon et al. 2009). Also a homeopathic remedy for a variety of ailments (abc Homeopathy n.d.).

Is used to curdle milk to make cheese in Sweden (Mackinnon et al. 2009).

Notes

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

Is a carnivorous plant and relies on small crawling insects, such as ants and springtails, as well as *Diptera* spp. to supplement the nutrients that the plant gets from the soil (Krafft and Handel 1991).

Photo Credits

Photo 1&2: Bill Bouton @ flickr 2012.

Photo 3: i- saint @ flickr 2012.

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