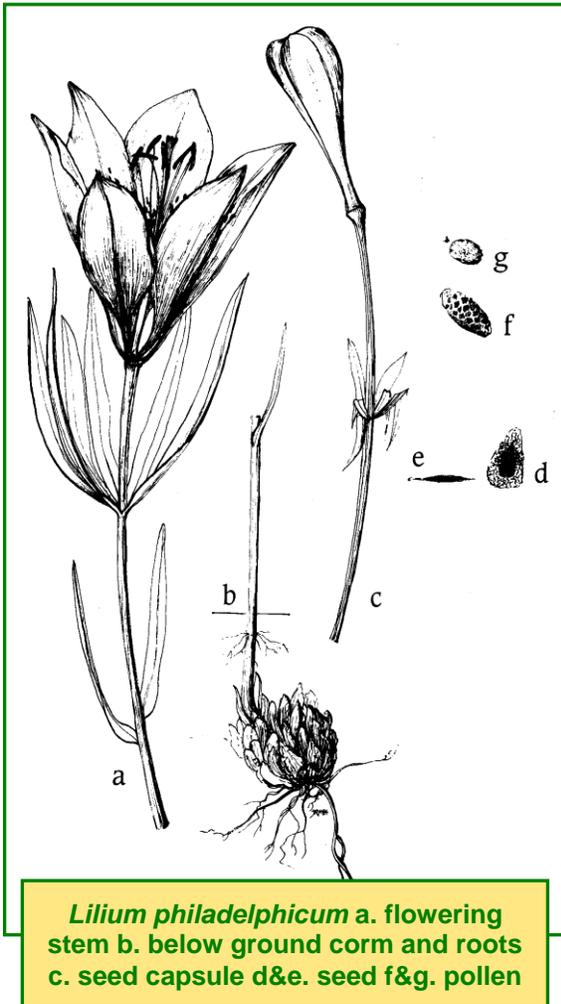


Scientific Name: *Lilium philadelphicum* L.

Family: *Liliaceae*

Common Names: tiger lily, wood lily, prairie lily, wild lily, red lily, western red lily



Lilium philadelphicum a. flowering stem b. below ground corm and roots c. seed capsule d&e. seed f&g. pollen

Plant Description

Erect, smooth, leafy perennial, 30 to 60 cm high; leaves 5 to 10 cm, linear to lance-shaped, alternate, whorled at flower; single or triple bloom per stem; orange to red, dotted black/purple petals and sepals, 5 to 8 cm long, dark purple anthers; white, thick-scaled bulb (Moss 1983).

Fruit: Cylindrical to egg-shaped capsule, 2 to 4 cm (Moss 1983).

Seed: Flat, triangle to tear shaped seed, golden yellow with darker centre, 4 to 7 mm, raised welts on surface (Moss 1983).

Habitat and Distribution

Lilies are most often found in clearings in woodlands, prairies, roadside, and meadows. Lilies take advantage of margins, such as those resulting from forestry cut lines and road building. Somewhat shade intolerant (Johnson et al. 1995).

Seral Stage: Late seral, although establishing in margins, lily is one of the later species to invade.

Soils: Sandy to loamy, well-drained soils, more tolerant of higher pH than lower (Johnson et al. 1995).

Distribution: Scattered in the Rocky Mountains, boreal forest and parkland in Alberta. Southeastern British Columbia to western Quebec south to New Mexico, North Dakota, Michigan, Ohio (Moss 1983).

Phenology

Blooms June to July (ALCLA Native Plants n.d.). Stems and seeds ripen in August and September (Moss 1983).

Pollination

Swallowtail and monarch butterflies, as well as sweat bees have been observed as pollinators (Lawrence and Leighton 1999). It is also pollinated by wind (Cook 1988).

Seed Dispersal

Likely wind dispersed (Horning and Webster 2009).

Genetics

$2n=24$ (Moss 1983)



Symbiosis

Vesicular-arbuscular mycorrhiza (Currah and Van Dyk 1986).



***Lilium philadelphicum* is an herbaceous perennial of the boreal forest.**

Seed Processing

Collection: Ripe stems detach easily from bulb. Once the flower is gone the plant is difficult to spot in the field it is suggested that collection sites be scouted out and marked while it is still in bloom.

Seed Weight: 0.83 g /1,000 seeds (Royal Botanic Gardens Kew 2008).

Harvest Dates: Late July-early August.

Cleaning: Air-dry fruits at ambient temperature. If capsules are intact, open capsules and empty seeds. Otherwise crush material or remove large chaff and crush remaining material. Sieve to remove seeds

from chaff using appropriate size screens. Small chaff and dust can be removed by winnowing.

Storage Behaviour: Orthodox, seeds can be dried, without damage, to low moisture contents.

Longevity increases with reductions in both moisture content and temperature (Royal Botanic Gardens Kew 2008).

Storage: Seed should be stored dry. 94 % viability following drying to a moisture content of 15% and freezing for 5 months at -20°C (Royal Botanical Gardens Kew 2008).

Longevity: Seed viable for at least 2 years.

Propagation

Germination: 90% germination in 30 days, fresh, 1 or 2 year old seed in north-eastern Alberta.

Royal Botanic Gardens Kew (2008) achieved 94% to 100% germinations on a 1% agar media.

Pre-treatment: 30 to 60 days cold stratification (2 to 4°C) (Prairie Moon Nursery Inc. 2011).

No pre-treatment required (Smreciu et al. 2012).

Direct Seeding: Seeds sown directly into reclaimed soils in northeastern Alberta emerged well and matured to become reproductive in a pre-trial plot but have not emerged in other trails (Smreciu et al. 2012).

Seeding Rate: 200 seeds/m² to obtain 2 plants/m².

Vegetative Propagation: Using undamaged scales of underground bulb. Dispersed by mice and small rodents when they dig the bulbs for food.

Aboriginal/Food Uses

Food: Tubers can be eaten fresh or dried (Royer and Dickinson 1996).

Flowers, seeds and bulbs can be eaten raw; bulbs are best boiled in two changes of water. Bulbs can be dried whole or mashed and dried (Northern Bushcraft n.d.).

Medicinal: Crushed leaves used to make a poultice to treat small poisonous spider bite root as part of a compound medicine can treat heart problems; boiled tubers eaten as a soup can treat appendicitis; and a dried tuber placed in a tooth cavity then crushed can relieve toothaches (Royer and Dickinson 1996).

Wildlife/Forage Usage

Wildlife: Bulb scales may be eaten by rodents and other small mammals. Grizzly bears also feed on lily bulbs. Utilized by a variety of other wildlife species although of little forage value.

Livestock: Fair forages value (Gerling et al. 1996).

Grazing Response: Not able to withstand heavy grazing.



***Lilium philadelphicum* seeds**

Reclamation Potential

May establish on margins of wooded areas. Wild Rose Consulting did not see any emergence of seedlings after two growing seasons on oil sands reclamation sites (Smreciu et al. 2012).

Commercial Resources

Availability: Not widely available but some producers exist in Alberta.

Cultivars: None are known.

Uses: Horticultural.

Notes

Tiger lily is listed as 94% intact (less occurrences than expected) in the Alberta oil sands region (Alberta Biodiversity Monitoring Institute 2014).

Is a prolific seed producer.

Genetic diversity is maintained by fire, which releases dormant bulbs, lowers competition with other plants and removes cover for small mammals therefore reducing the rate of grazing and the rate of seedling establishment (Lawrence and Leighton 1999).

Photo Credits

Photo 1: Glen Lee, Regina Saskatchewan

Photo 2: Wild Rose Consulting, Inc. 2012.

Line Diagram: John Maywood, used by permission of Bruce Peel Special Collections, University of Alberta.

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