NIGHT-FLOWERING CATCHFLY

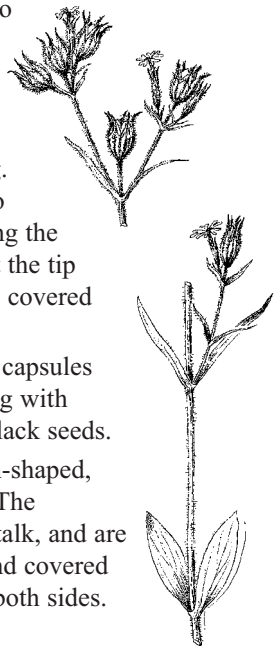
Silene noctiflora L.

Family: *Caryophyllaceae* (Pink).
Other Scientific Names: Melandrium noctiflorum.
Other Common Names: Sticky cockle, night-flowering campion.
Legal Status: Regional Noxious: Peace River.

Identification

Growth form: Annual forb.

Flower: The white to pinkish flowers are fragrant, arranged in small clusters, and open only at night. The flowers have 5 notched petals, 20–35 mm long. The sepals are fused together to form a tubular calyx surrounding the flower. The calyx has 5 teeth at the tip and 10 prominent nerves and is covered in sticky hairs.



Seeds/Fruit: The pale, smooth capsules are egg-shaped, 1.5–2.5 cm long with tiny, rough, brown to greyish black seeds.

Leaves: Basal leaves are spoon-shaped, 5–12 cm long, on short stalks. The opposite stem leaves have no stalk, and are lance-shaped, 2–10 cm long, and covered in slightly sticky stiff hairs on both sides.

Stems: The several stems are erect and branched, 20–90 cm tall. Stems are swollen at the nodes and hairy, with the hairs becoming sticky near the top.

Roots: Taproot.

Seedling: A leaf rosette is formed after the seedling leaves (cotyledons) have emerged.

Similar Species

Exotics: White cockle (*Lychnis alba*) is perennial and lacks the sticky hairs on the upper part of the plant. The white cockle produces separate male and female flowers, while the catchfly has both sexes in the same flower.

Natives: A number of *Silene* are native to the province, and several are rare. While all *Silene* share the tubular flower and inflated calyx, the native species are nearly all perennial and none have the stickiness of night-flowering catchfly.

Impacts

Agricultural: Infests grain fields, legume crops, and pastures and can be a problem in gardens and horticultural nurseries. It sometimes contaminates clover and forage seed, making it difficult to clean. Livestock find it unpalatable, whether in pasture or cured in hay (BC Ministry of Agriculture and Food 1984).

Ecological: Grows on roadsides, railroads, fields, and disturbed habitats, where it usually remains a minor component. Its prolific seed production enables it to colonize disturbed sites rapidly.

Human: None known.

Habitat and Ecology

General requirements: In BC, grows in fields, disturbed areas, and roadsides at low- to mid-elevations. It requires high summer temperatures for germination and usually grows on sandy or gravelly soils.

Distribution: Found in all agricultural reporting regions in the province and considered a major concern in the Peace River region. It is found in all provinces (but is uncommon in Newfoundland and the Maritimes) and throughout the northern US (McNeill 1980).

Historical: Introduced from Europe. This plant was known in Canada by the 1860s.

Life cycle: An annual or winter annual, night-flowering catchfly overwinters as seed or as leafy rosettes if there is protective snow cover. In spring, the stems rapidly elongate, and flowering begins by mid-June, with some plants not coming into flower until September. Seed ripens about a month after flowering starts. Some seeds germinate in the autumn but most remain dormant over winter.

Mode of reproduction: By seed.

Seed production: A single plant can produce over 2,500 seeds.

Seed bank: Seeds are very viable, especially after an after-ripening period of 3–6 months. Seeds remain viable longer than 3 years in cultivated soil.

Dispersal: Most seeds fall to the ground from the parent plant. Seeds are very similar to those of crop clovers and are difficult to separate, so seed impurities have been an important source of dispersal. Ingested seeds survive passage through the digestive system of livestock.

Hybridization: None known.

Management

Biocontrol: None.

Mechanical: Shallow cultivation can create sufficient disturbance to population density of this plant.

Fire: In Britain, stubble burning and early tillage has decreased density, but this weed flowers much later in Britain than in BC.

Herbicides: Resistant or somewhat resistant to several common herbicides, including 2,4-D, MCPA, fenoprop, and mecoprop (McNeill 1980). EPTC and trifluralin are effective when used before planting, while bromoxynil and MCPB are effective post-emergence. More consistent management is often achieved with combinations of 2 or more herbicides. Consult the most recent edition of BC Ministry of Agriculture, Food and Fisheries Crop Production Guides for specific recommendations. **Before applying herbicides, read the label for full use and precautionary instructions.**

Cultural/Preventive: Improved separation of crop seed has reduced the spread of night-flowering catchfly.

Integrated Management Summary

Once established, night-flowering catchfly is most effectively managed with herbicides. Small infestations can be hand-pulled. Minimize disturbance and seed disturbed areas to perennial grasses and forbs. Manage grazing animals to maintain perennial plant communities.

References

BC Ministry of Agriculture and Food. 1984. Night-flowering catchfly. Agdex 640 Fact Sheet.

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McNeill, J. 1980. The biology of Canadian weeds. 46. *Silene noctiflora* L. *Canadian Journal of Plant Science* 60: 1243–1253.