



Climbing Nightshade

Solanum dulcamara L. (aka Bittersweet nightshade, Bittersweet, Woody nightshade)

Provincial Designation:
Not Regulated



5548542

Photo credit: Ansel Oommen, Bugwood.org



Photo credit: Megan Evans, AISC

Overview:

Native to Europe, Asia, and Africa, climbing nightshade is a perennial vine or shrub from the Solanaceae (Nightshade) family. It was likely first introduced as an ornamental or for medicinal use before becoming widespread across the continent by the early 1900s.¹ Climbing nightshade occurs in all northern and central U.S. States and most Canadian provinces² with some confirmed populations in southern Alberta.

Climbing nightshade is in the same family as potatoes, tomatoes, and peppers which causes concern that it could act as a reservoir for many serious agricultural pests. For instance, studies have shown climbing nightshade can act as an overwintering host for Pepino mosaic virus on tomatoes⁴ and for the potato psyllid *Bactericera cockerelli* that transmits Zebra Chip disease to potatoes⁵.

Climbing nightshade flowers from June to September and are insect-pollinated. Seeds are distributed by birds that eat ripe fruits and appear to be unaffected by their toxicity¹.

It can be distinguished from other nightshades in Alberta from its vining growth, purple flowers, bright red berries, and unpleasant smell produced when its leaves and stems are crushed.

Distribution:

Isolated populations in Alberta.

Habitat:

Prefers moist soils, but will grow in a variety of soil types.¹ Tolerant to light levels ranging from full sun to shade in riparian areas and other habitats associated with freshwater, but will also invade disturbed areas, forest understory and grasslands.¹

Reproduction:

Reproduces by seed and rhizomes.

Identification:

Stems: are hollow, purple-tinged, and can grow to 1-3m long and as much as 7m, either erect, along the ground, or over other plants and structures.¹

Leaves: are alternate, ovate to lanceolate, 5-12cm long, often with one or more ear-like lobes at the base³ but not separated into leaflets. Leaves are dark green to purplish and connected to the stem via stalks.

Flowers: are star-shaped with 5 pointed purple (occasionally white) petals and bright yellow stamens fused into a cone⁶ and grown in branched clusters. Petals often fold backward toward the stem to expose the yellow centre.⁶

Fruits: are oblong berries, 8-12mm long, green when unripe turning red when ripe³ with about 30 yellow, flat seeds per berry.

Roots: are woody taproot and rhizomes.

Toxicity:

All parts of the plant, including the fruit, are poisonous to humans, pets, and livestock with unripe berries containing the highest concentration of toxins.¹ Ripe berries are mildly toxic to adults but potentially dangerous for children.³

Prevention:

Always follow GrowMeInstead by checking wildflower seed mixes and avoid growing it as an ornamental. Use gloves when handling this species.

Control:

Grazing: Climbing nightshade is toxic and generally unpalatable to livestock. Invasive plants should never be considered as forage.

Mechanical: Pulling or digging roots can be effective for small infestations ensuring the entirety of the root is removed as plants may regenerate from root fragments.⁶ Larger infestations can be cut to the ground and covered with a weed barrier for at least two years.⁶

Climbing Nightshade (Continued)

Mowing is not recommended as roots will sucker over the growing season requiring repeated cuttings.¹

Chemical: Currently no selective herbicides are registered for use on climbing nightshade. Always check product labels to ensure the herbicide is registered for use on the target plant in Canada by the Pest Management Regulatory Agency. Always read and follow label directions. Consult your local Agricultural Fieldman or Certified Pesticide Dispenser for more information.

Biological: None researched to date.



Photo credit: Steve Dewey, Utah State University, Bugwood.org



Photo credit: Leslie J. Mehrhoff, University of Connecticut, Bugwood.org

REFERENCES:

1. Waggy, MA. 2009. *Solanum dulcamara*. U.S. Department of Agriculture <https://www.fs.usda.gov/database/feis/plants/shrub/soldul/all.html>. Accessed January 7, 2021.
2. USDA, NRCS. *Solanum dulcamara* L. Climbing nightshade. The PLANTS Database <https://plants.usda.gov/core/profile?symbol=SODU>. Accessed January 7, 2021.
3. OMAFRA. Ontario Weeds: Climbing nightshade. [https://www.omafra.gov.on.ca/ipm/english/weeds-herbicides/gallery/climb_nightshade.html#:~:text=Habitat%3A%20Climbing%20nightshade%20occurs%20throughout,occasionally%20in%20hedges%20and%20gardens.&text=Stems%20partially%20woody%2C%20weak%2C%20erect,\(3%2D10ft\)%20long](https://www.omafra.gov.on.ca/ipm/english/weeds-herbicides/gallery/climb_nightshade.html#:~:text=Habitat%3A%20Climbing%20nightshade%20occurs%20throughout,occasionally%20in%20hedges%20and%20gardens.&text=Stems%20partially%20woody%2C%20weak%2C%20erect,(3%2D10ft)%20long.). Accessed January 7, 2021.
4. Stobbs, LW, and N Grieg. 2014. First report of bumblebee (*Bombus impatiens* Cresson) transmission of Pepino mosaic virus between tomato (*Solanum lycopersicum* L.) and perennial climbing nightshade (*Solanum dulcamara* L.). *Canadian Journal of Plant Pathology*, 36(4):529-533. Accessed January 7, 2021.
5. Swisher, KD, VG Sengoda, J Dixon, E Echegaray, AF Murphy, SI Rondon, JE Munyaneza, and JM Crosslin. 2013. Haplotypes of the potato psyllid, *Bactericera cockerelli*, on the wild host plant, *Solanum dulcamara*, in the pacific northwestern United States. *Am. J. Potato Res.* 90:570-577. Accessed January 7, 2021.
6. Best Management Practices: Bittersweet Nightshade. King County Noxious Weed Control Program. <https://your.kingcounty.gov/dnrp/library/water-and-land/weeds/BMPs/bittersweet-nightshade-control.pdf>. Accessed January 7, 2021.