Leafy Spurge;
R. Mueller

Invasive Species Council of BC

FACTSHEET
MARCH 2017

Leafy Spurge

Euphorbia esula

About Leafy Spurge

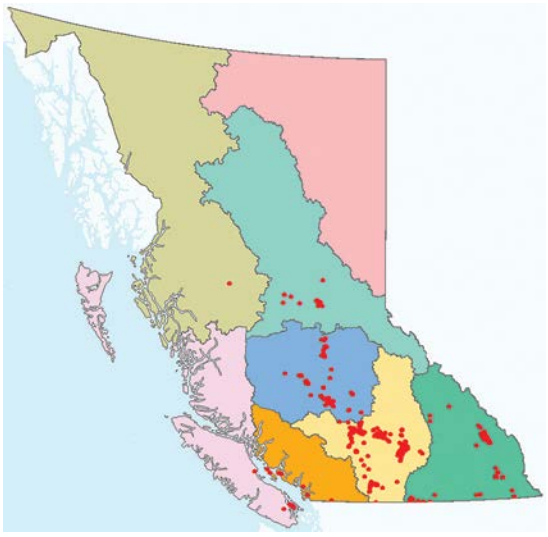
Leafy Spurge is an herbaceous perennial plant that has been introduced from Eurasia. It is believed that leafy spurge was first brought to Canada in contaminated seed stocks brought by immigrants to Canada. This species is also known by the common name, wolf's milk, as this plant contains toxic white, milky latex in its leaves and stems. This milky latex has been known to irritate the skin of people and animals, producing blisters and swelling. It also produces an allelopathic compound that inhibits the growth of other plants, enabling it to out-compete native species and establish a monoculture.

Legal Status

BC Weed Control Act listed noxious (Provincial). *Forest and Range Practices Act*, Invasive Plant Regulations.

Distribution

Leafy spurge is believed to be present in all the Canadian provinces except Newfoundland. Within British Columbia, isolated pockets of leafy spurge are present in the Thompson, Cariboo, Boundary, East Kootenay, Nechako and North Okanagan.



Leafy Spurge Distribution
(2011)

Identification

Flowers: Distinguishable clusters of yellowish-green flowers which have a pair of heart shaped yellow-green bracts below each inconspicuous flower.

Stems: Stems grow in thick clusters that range from 0.3 m to 0.9 m tall. Stems have fine hairs on the surface.

Leaves: Linear to oblong leaves are narrow and waxy and can be 5-8 cm long. Leaves are bluish-green, hairless, stalkless, and usually alternate on the stem.

Fruits: Produces smooth capsules that vary in colour from light grey to dark brown and are approximately 2 mm in length. These capsules can be found growing in slightly hairy pods on top of the bracts.

Leafy Spurge
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Similar Native Species: Leafy spurge is often mistaken for Cypress spurge *(Euphorbia cyparissias)*. Cypress spurge is shorter and less robust than leafy spurge. Leafy spurge has two subspecies and one hybrid subspecies. *Euphorbia esula* subsp. *esula, Euphorbia esula* subsp. *tommasiniana, Euphorbia esula* nothosubsp. *pseudovirgata.*


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7 years

IS THE TIME LEAFY SPURGE SEED REMAINS VIABLE IN THE SOIL

Ecological Characteristics

Habitat: It is adapted to a wide variety of site conditions, is capable of growing on a range of soil types and can tolerate very dry to very wet climates; however, it does require warmth for good growth. It tolerates dry roadsides, fields, waste places and disturbed soil and is most aggressive in semi-arid areas.

Reproduction: Reproduces by seed and vegetatively. Seeds have a high germination rate and can remain viable in the soil for up to 7 years. Plants also have an extensive lateral root system that can reach nearly 4.6 m laterally, and about 9.1 m deep. As many as 300 underground adventitious buds can be found on these long roots, all capable of producing new shoots.

Dispersal: The three-sided capsules explode when ripe, sending the enclosed seeds up to 4.6 m from the parent plant. Seeds are covered in a sticky gel that can easily attach to animals and humans leading to further dispersal. Seeds float on water, and can be transported and deposited by flood water. Seeds can also be moved through contaminated soil.

Impact

Ecological: Leafy spurge is considered among the most 'unwanted' invasive plants in BC. It is an aggressive, long-lived, weed that tends to displace all other vegetation in rangeland, pasture, and native habitats. Leafy spurge can decrease rangeland diversity, threaten native plants and degrade wildlife habitat.

Economic: Landowners with severe infestations on their grazing land may face decreased land values, experience reduced cattle stocking rates and income. In Manitoba, losses due to leafy spurge are estimated at $20 million (USD) per year.

Social: Leafy spurge displaces native vegetation and biodiversity reducing recreational and tourism values associated with British Columbia's landscapes. This species also poses health risks to BC citizens as it contains white milky latex that can cause the skin on people (and pets) to swell and blister.

Integrated Pest Management

IPM is a decision-making process that includes identification and inventory of invasive plant populations, assessment of the risks that they pose, development of well-informed control options that may include a number of methods, site treatment, and monitoring.

Prevention

- Monitor for leafy spurge on frequently travelled trails and entrances to pastures – also on disturbed sites.
- Avoid driving through or mowing patches when seeds are viable (July-August).
- Remove plant parts and seeds from personal gear and clothing, also check and clean any equipment or vehicles before leaving an infested site.

» Avoid transporting any hay, topsoil or gravel that has come from an infested area.

» Bag or tarp any plant parts before they are transported to a disposal site.

Cultural control

» Multi species (sheep and goats) grazing is effective as it removes the top growth of the plant, causes stress to the root system, and opens up areas for native grasses to establish and grow. Grazing also removes the flowering portion of the plant and over time, helps to reduce the number of seeds deposited into the soil bank.

» Burning is an effective tool to reduce top growth however it can stimulate plant growth. Burning should be used in combination with other control techniques.

Mechanical control

» Hand pulling can be effective for very small patches. Because hand pulling encourages vegetative growth, small patches must be pulled every 2-3 weeks. If using this method, ensure to use gloves to avoid the toxic sap.

» Mowing can be effective in preventing seed production, if timed properly. Repeat mowing.

Biocontrol

The flea beetles *Aphthona nigriscutis* and *Aphthona cyparrissae* have been proven the most effective bioagent control against leafy spurge in BC. The adult beetles feed on the leaves while the root mining larvae puts the plant under the most stress. The damage caused by the flea beetles will also make the plants more susceptible to other control methods.

The leaf tying moth *(Lobesia euphorbiana)* has also been proven effective. The larvae roll the terminal leaves of the plant into a tight tube and feed upon developing flower buds. This prevents the plant from flowering and seeding and may also weaken the plant to help other bioagents thrive. The leaf tying moth is not currently available for general distribution in BC.

Chemical Control

Herbicide recommendations and use must first consider site characteristics and be prescribed based on site goals and objectives. Herbicide labels and other sources or information must be reviewed before selecting and applying herbicides

» Herbicides can eliminate small patches of leafy spurge with persistent treatments. Larger areas require additional (integrated) control measures, because long-term control is extremely difficult to achieve with any single control method. Thus, herbicides are an important component of any integrated pest management (IPM) program focused on leafy spurge control.

» Proper timing of herbicide applications is essential for good Leafy spurge control. Leafy spurge is most susceptible to picloram alone or picloram plus 2,4-D or dicamba plus 2,4-D applications when the plant is in the true flowering and seed production stage from mid-to late June, or in early to mid-September after the stems have developed new fall re-growth.

» Glyphosate, a non-selective herbicide, provides good leafy spurge control when applied during active growth.

Application of herbicides on Crown land must be carried out following a confirmed Pest Management Plan *(Integrated Pest Management Act)* and under the supervision of a certified applicator. *www.env.gov.bc.ca/epd/epdpa/ipmp/index.html*

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Leafy Spurge Cutout

Disposal

Note: *Disposal of invasive plants varies by region. Contact your local government for specific information on how to dispose of your invasive plants.*

- Chemically treated plants can be left on site to compost.
- Tarp and bag removed plants, plant parts and seeds before transporting to a designated disposal site (e.g. landfill or transfer station).
- It is recommended that transfer stations provide disposal bins intended solely for invasive plants. This will ensure the plant matter within the container is transported in a sealed unit and properly disposed of at the landfill.
- Burning and composting are not recommended as extreme temperatures are required.

References/Links

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ADDITIONAL CONTACT INFO