

Leafy spurge

The problem

Leafy spurge (*Euphorbia esula*) is a troublesome perennial weed that spreads rapidly once established, forming large, dense monocultures, which are difficult to control. Native to Central and Southern Europe, this plant has invaded large areas of rangeland, farmland, and roadsides in the Prairie provinces and has been a problem in pastures, roadsides, uncultivated crops, and reduced tillage crops in eastern provinces for decades. Although found on heavier soils, leafy spurge thrives in coarse soils as well.

Mature leafy spurge plants over-winter by using their extensive perennial root system. This extensive root system produces new shoots from pinkish root buds each spring at depths of 30 cm or more. The root system spreads horizontally, producing new crowns from pinkish adventitious root buds and vertically to depths up to 4.5 m. Over time, the perennial roots increase in size and diameter, and within large stands, crowns remain connected underground increasing plant reserves, which makes mechanical and herbicide control less effective.

In addition to their ability to spread rapidly, leafy spurge plants are unpalatable to cattle and horses rendering fields unsuitable for grazing when present. Furthermore, the milky liquid produced from its stems and flowers is an irritant and can cause severe skin rashes in both livestock and humans. To make things worse, leafy spurge thrives in areas where vegetation is grazed out and releases toxins that prevent the growth of native vegetation, therefore, facilitating its ability to take over rangelands and pastures.

What to look for

Some key characteristics to differentiate leafy spurge from other species:

- Leafy spurge stems are smooth, yellowish brown, and mostly un-branched below the flowers. They grow in clumps from 30–70 cm tall and are interconnected by a perennial root.
- Leaves are linear, alternate, and attached directly to the stem with no petiole. This is different than Cypress spurge leaves which are crowded on side stems. All plant parts have a milky sap.
- Leafy spurge has greenish-yellow flower clusters with leafy flower parts. They grow in flat-topped clusters at the tops of the stem and on side shoots.
- The dried seed pods release and spread seed up to 5 m. Seed persists in the soil for five to eight years.

Envu solutions

A multiple-year control program is required to control seed production and prevent the continued growth of the large underground root system. Applying Esplanade™ in addition to Navius® FLEX to leafy spurge infestations will provide both pre and post-emergent control for bareground application while Navius® FLEX alone will provide post-emergent control in rangeland and non-crop areas while allowing desirable forage grasses to flourish. Control should include an integrated program using herbicides as a tool in addition to other control methods.

The benefit of using herbicides with residual control is to prevent the germination of seedlings throughout the year. Herbicides should be applied when the plant is actively growing to maximize uptake and translocation to the root:

- In late May and June once flowering has started but before seed production
- In early September once growth has resumed

As part of an integrated control program, once a leafy spurge infestation has been controlled with herbicides, it is essential to prevent new infestations. While the absence of leafy spurge will facilitate the regrowth of desirable vegetation, seeding and fertilization will further promote the competitive growth of desirable cover.

Additionally, cleaning equipment after herbicide application within a site, mowing, ditching, or any work on infested sites is critical to prevent linear spread down rights-of-way or to new fields.



Leafy spurge treated/untreated.



Leafy spurge close up.

Application type	Solution	Rate	Application timing
Pre- and post-emergent bareground	Esplanade or Navius FLEX + 0.25% v/v non-ionic surfactant	375 mL/ha 167 g/ha	When weeds are actively growing
Post-emergent selective weeding in rangeland and non-crop areas	Navius FLEX + 0.25% v/v non-ionic surfactant	167 g/ha	Weeds actively growing mid-May thru mid-September

For more information about effective vegetation management, contact your Envu representative or visit ca.envu.com.

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