



INVASIVE ALIEN SPECIES

Leafy Spurge

(*Euphorbia esula*)

SK Provincial Designation: Noxious

Overview:

Leafy spurge is a long-lived perennial that was introduced to Eastern North America as either an ornamental or crop seed contaminant in the early 1800's. It spread gradually from the east to the great plains where it became an aggressive invader.

It reproduces primarily by re-sprouting from its extensive, persistent, creeping root system, but also by seed. Leafy spurge roots can extend 4.5 m laterally and about 9 m deep. Leafy spurge forms dense stands over time and a large plant can produce up to 130,000 seeds.



All parts of the plant contain a milky-colored sap that can have a range of negative effects on livestock, from skin irritation to rare toxic conditions as well as skin irritation to humans skin exposed to the sap.

Cypress spurge is very similar in appearance, to leafy spurge, but it is more compact, has shorter, narrower leaves arranged more closely on the stems, and has a more branched growth habit than leafy spurge. It can also be aggressive in certain areas.



Identification:

Stems: Stems are arranged in clumps, smooth and hairless, grow up to 1 m tall and contain a milky sap.

Leaves: Leaves are numerous and attached directly to the stem, arranged alternately or sometimes spirally. The leaves are up to 7 cm long, narrow, waxy, have smooth edges and are bluish-green in color, turning yellowish or reddish- orange in late summer.

Flowers: Flowers are small, yellowish-green, lack both petals and sepals, and are supported by 2 green, heart-shaped, leaf-like bracts, arranged in numerous small clusters.

Seed: Seeds are about 2mm, smooth, oblong, light gray to dark brown in color and grow in pods on top of the bracts. When mature the dried seed pods explode, distributing seed as far as 5 m from the parent plant.

TOP and RIGHT: Leafy spurge flower clusters (photos by Saskatchewan Ministry of Agriculture)

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Leafy Spurge (*continued*)

Habitat:

Native to much of Europe and Asia, it is adapted to a wide variety of site conditions. It grows on a range of soil types and tolerates very dry to very wet climates, but does require some warmth for good growth. Seasonal flooding of riparian infestations can distribute seed long distances.

Prevention:

Producers should exercise caution when using hay from road ditches and when purchasing hay from known infested areas. If possible they should use weed seed free hay and isolate animals that were grazed on infested areas for a week so that all the seeds can pass through the animal's body. People working in infested areas should wash the under carriage of vehicles in a commercial area making sure all seedlings; stems; flowers; etc. are washed down the drain. Don't remove soil or gravel from an leafy spurge infested areas.

Control:

Leafy spurge is extremely resilient and a combination of control methods will be necessary to achieve significant control.

Grazing: Sheep and goats will readily graze leafy spurge and are less affected by the sap. The subsequent re-sprouting will weaken the plants by diminishing root reserves. However there is the risk of seed being carried by the animals to non-infested locations.



ABOVE: Leafy spurge rhizome (photo by Steve Dewey, Utah State University, Bugwood.org)



ABOVE: Milky sap is apparent when stems or leaves are broken (photo by Chet Neufeld)

Cultivation: There are two types of cultivation for leafy spurge; intensive throughout the growing season, and fall-only cultivation. Intensive cultivation programs should begin two to four weeks after leafy spurge emerges in the spring. Till at least four inches deep every three weeks until the soil freezes for one or two years. Fall only cultivation should be done when the re-growth of leafy spurge is three to six inches tall, and should be repeated for three years.

Mechanical: Hand-pulling and mowing is relatively ineffective other than on small, young infestations as the perennial root will persist to re-establish the infestation. Wear gloves and wash after handling leafy spurge to avoid skin rashes.

Chemical:¹ A few herbicides have successfully reduced the density of infestations, but timing is critical. A combination of chemical control and seeding/fertilizing to encourage competition from desirable vegetation is the best approach. Consult your Ministry of Agriculture Regional Forage Specialist, the Agriculture Knowledge Centre at 1-866-457-2377 or the Guide to Crop Protection for more details.

Biological: Four flea-beetles and 2 moths have been imported for bio-control of leafy spurge. Flea-beetle larvae are root-feeders and adults consume shoot and leaf tips. See the factsheet "Biological Control of Weeds on the Prairies" on the Saskatchewan Agriculture web site for more details.

1. Always follow the product labels. Pesticides should only be applied by certified pesticide applicators. The use of pesticides in any manner not published on the label or registered under the *Minor Use of Pesticides* regulation constitutes an offence under both the *Federal Pest Control Products Act* and provincial acts in Saskatchewan. For the latest information on pesticides for agricultural use in Saskatchewan, please consult the provincial *Guide To Crop Protection*, produced annually by the Saskatchewan Ministry of Agriculture.