

Leafy spurge

Colorado Department of
Agriculture

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Key ID Points

1. Flowers are yellowish-green and have a pair of heart shaped yellow-green bracts below each inconspicuous flower.
2. The entire plant contains white, milky latex.

Leafy spurge Identification and Management



Identification and Impacts

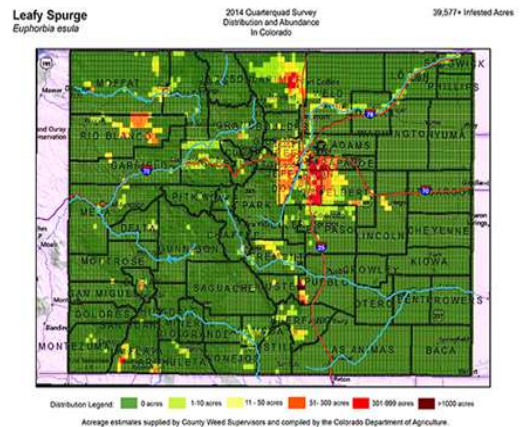
Leafy spurge (*Euphorbia esula*) is a non-native deep-rooted perennial that spreads by seed and extensive, creeping roots. The roots can extend as deep as 30 feet into the soil and are extremely wide-spreading. The roots are brown and contain numerous pink buds that generally produce new shoots or roots. Leafy spurge can grow from 1 to 3 feet in height. The stems are smooth, pale green, and thickly clustered. Leaves are alternate, narrow, linear, and 1 to 4 inches long. The flowers are very small and yellowish-green. They are enclosed by very visible yellowish-green, heart-shaped bracts. The entire plant contains white, milky sap that exudes readily upon stem or leaf breakage. This sap can damage eyes and sensitive skin. Leafy spurge is one of the earliest plants to emerge in the spring. Flower clusters develop 1 to 2 weeks after stem emergence which is from mid-April to late May. One large leafy spurge plant can produce up to 130,000 seeds. Three-sided seed capsules explode when ripe and project the seeds up to 15 feet away from the parent plant.

Leafy spurge has adapted to a wide variety of habitats in the state and is very competitive with other plant species. Where it becomes established in rangeland, pasture, and riparian sites, it crowds out practically all other vegetation. The competitive,

rapidly growing, and extensive root system makes leafy spurge very difficult to manage. Develop a management plan that uses several control methods that are compatible with your site.

The most effective method of control for Leafy spurge is to prevent its establishment through proper land management. Maintain healthy pastures and rangeland and continually monitor your property for new infestations. New infestations are much more easily controlled than established infestations. Details on the back of this sheet can help to create a management plan compatible with your site ecology.

Leafy spurge is designated as a "List B" species on the Colorado Noxious Weed Act. It is required to be either eradicated, contained, or suppressed depending on the local infestations. On the back of this sheet are leafy spurge management recommendations. For more information, please visit www.colorado.gov/ag/csd and click on the Noxious Weed Program link. Or contact the State Weed Coordinator at the Colorado Department of Agriculture, Conservation Services Division, 303-239-4100.



Flower photo, top, © Norman Rees, USDA, APHIS. Invasive.org. All other photos © Kelly Uhing.

Euphorbia esula

**CULTURAL**

Establishment of selected grasses can be an effective cultural control of leafy spurge. Contact your local Natural Resources Conservation Service for seed mix recommendations. Maintain healthy pastures and prevent bare spots caused by overgrazing. Bareground is prime habitat for weed invasions.

**BIOLOGICAL**

Both sheep and goats can be effective grazers of leafy spurge. The flea beetles *Apthona nigriscutis*, *A. lacertosa*, and *A. cyarissiae*, are effective especially when combined with grazing and/or herbicides. For more information, contact the Palisade Insectary of the Colorado Department of Agriculture, 970-464-7916.

Photo © USDA.

**MECHANICAL**

Due to the extensive root system, hand-pulling this plant is not a viable option. Mowing will reduce seed production if repeated every 2 to 4 weeks during the growing season, but will provide little long-term control.

Integrated Weed Management:

Persistent monitoring of areas with known or potential infestations is crucial to managing leafy spurge. A combination of management methods in a long-term management plan is imperative. The management objective is to exhaust the root system and deplete the soil seed bank.

HERBICIDES

NOTE: The following are recommendations for herbicides that can be applied to range and pasturelands. Rates are approximate and based on equipment with an output of 30 gallons per acre. Please read label for exact rates. **Always read, understand, and follow the label directions. The herbicide label is the LAW!**

HERBICIDE	RATE	APPLICATION TIMING
Fosamine (Krenite S)	1.5 gal/acre or 6.5 oz/gal water	Spring only, during bloom to post-bloom stage. Add non-ionic surfactant @ 0.32oz/gal water or 1 qt/100 gal water.
Picloram (Tordon 22K *this is a Restricted Use Pesticide*)	1 qt./acre or 1 oz/gal water	Spring, just after full-bloom and/or fall. DO NOT apply near or under trees/shrubs or where soils have rapid permeability. Add non-ionic surfactant @ 0.32oz/gal water or 1qt/100 gal water.
Imazapic (Plateau)	12 oz/acre or 0.4 oz/gal water	Fall only treatment prior to hard freeze. Add a methylated seed oil surfactant (MSO) @ 0.32oz/gal water or 1 qt./100 gal water.
2,4-D Amine	2-3 qts/acre or 2-3 oz/gal water	Apply early spring and fall. Prevents seed formation only. Retreatment will be necessary. DO NOT apply when outside temperatures will exceed 85 degrees. Add non-ionic surfactant @ .32oz/gal water or 1qt/100 gal water.

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