

Dyer's woad

List A Species

Rangeland, pasture, and riparian site recommendations

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Dyer's woad Identification and Management



Dyer's woad is a prolific seeder and the soil seed reserve is unknown. Managed sites must be monitored for at least 10 years after the last flowering adult plants have been eliminated and treatments need repeated when necessary.

The key to effective control of dyer's woad is prevention and early detection. Eradicating populations of dyer's woad can be achieved through different control methods. When populations are small, handpulling is an effective approach. Herbicide applications can be effective also. Details on the back of this sheet can help to create a management plan compatible with your site ecology.

Dyer's woad is designated as a "List A" species on the Colorado Noxious Weed Act. It is required to be eradicated wherever found in the State. For more information visit www.colorado.gov/ag/weeds and click on the Noxious Weed Management Program. Or call the State Weed Coordinator at the Colorado Department of Agriculture, Conservation Services Division, 303-239-4100.

Identification and Impacts

Dyer's woad (*Isatis tinctoria*) ranges from 1 to 4 feet tall with a deep taproot. The plant acts as winter annual, biennial, or short-lived perennial. The basal rosette produces stalked, bluish-green leaves covered with a fine hair. Leaves have a white mid-rib on the upper surface of the leaf. The flowers are numerous, yellow and very small. Flowers are clustered on the upper portion of multi-branched stems, which typically occurs in April to early June. Fruit or seed pods are winged, slightly pear shaped and change from light green to a shiny purplish-black color as they mature. The seeds contained in the fruit are cylinder-shaped and brownish-yellow. The seeds usually form in June and July.

The typical habitat for Dyer's woad includes rangelands, pastures, forests, roadsides, fields, disturbed sites and railroad Rights-of-Way. The plant thrives in light sandy and gravelly soils and will establish in rocky soil with minimum water holding capacity. Dyer's woad impacts the natural plant communities by outcompeting native plants. It causes a loss of wildlife and livestock forage by displacing native grasses and other native species.



Key ID Points

1. Ranges from 1-4 ft. tall
2. Numerous flowers that are yellow and very small
3. Seed pods turn dark purple to black



All photos courtesy of Steve Dewey, Utah State University, bugwood.org

Isatis tinctoria

**CULTURAL**

Keeping desirable vegetation healthy and thick will help keep invaders out. Survey your land regularly to detect new invaders and eradicate any new populations quickly.

**BIOLOGICAL**

Biocontrol agents are not included in the prescribed management plans by the State for List A Species. Eradication is the management objective of all List A's. No biocontrol agent for dyer's woad is available. For information on biocontrol in Colorado, please contact the Palisade Insectary of the Colorado Department of Agriculture at 970-464-7916.

**MECHANICAL**

Hand pulling or digging are effective control methods when dealing with dyer's woad. Hand pulling should occur when soil is moist and be certain to pull all the roots. It is important to bag specimens carefully so as to not scatter seeds if the plant is flowering.

Integrated Weed Management:

Since dyer's woad has been identified in very small quantities around Colorado, preventing the populations from spreading is important in management of the weed. Eradication requires intensive and persistent control efforts to effectively eliminate weed infestations and soil seed reserves. If populations occur hand pulling and herbicide control methods are effective in eradication.

Dyer's woad

HERBICIDES

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

Herbicide	Rate	Application Timing
Metsulfuron (Escort)	0.5-1 oz. product/acre + 0.25% v/v non-ionic surfactant	Apply at the rosette to bloom growth stages. (Late winter to early spring)
Chlorsulfuron* (Telar)	1 oz. product/acre + 0.25% v/v non-ionic surfactant	Apply at the rosette to early bolt growth stage. (Late winter to early spring)

Note: *This herbicide has residual soil activity that will affect all broadleaf seedlings germinating after application has occurred.

Additional herbicide recommendations for other species can be found at:
www.colorado.gov/agconservation/CSUHerbicideRecommendations.pdf