

Management of *Isatis tinctoria* (dyer's woad)



Lewis and Clark County Noxious
Weed Control District
3402 Cooney Dr Helena | MT 59602

Montana Priority 1A Noxious Weed

Plant Description

Isatis tinctoria, dyer's wood, can be a short-lived perennial, biennial, or winter annual that grows 30-100 cm tall. Dyer's wood develops a taproot and several lateral roots. It has four-petaled, small, bright yellow flowers that form an umbrella shape at the top of the plant. The basal and stem leaves are bluish-green and have a cream-colored midrib on the upper surface. Seeds do not split open, they hang perpendicular to the ground. Dyer's wood only reproduces via seed, so control efforts should be focused on seed production.

Mechanical Control

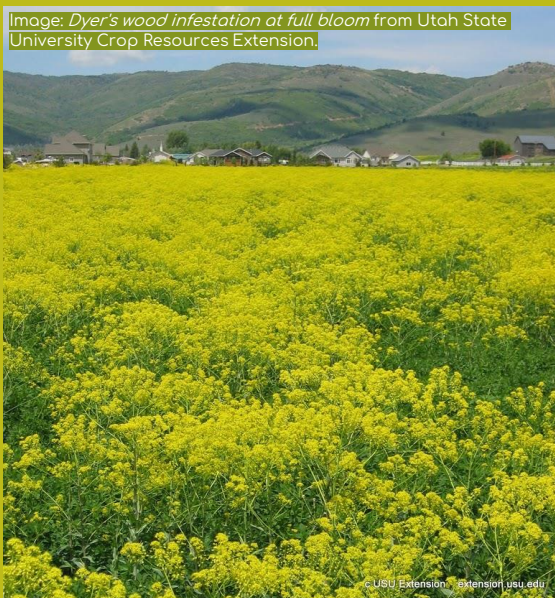
Hand removal can provide effective control if the root crown is removed. This is most effective after bolting but prior to seed set. Plant material should be bagged and disposed of when plants are in the pre-bloom or flower stage. Mowing may reduce seed production but will not provide control due to the potential for resprouting.

Biological Control

Rust fungus, *Puccinia thlaspeos*, is not commercially available, but does occur naturally within North America. Effectiveness is currently unknown, further research is needed.

Cultural Control

Revegetation is important. Introduce desirable species, especially in areas with disturbance. Plant competition can help prevent the invasion of new and existing unwanted vegetation. Controlled burns will work as a means to dispose of plant debris but does not typically destroy the root system. Livestock typically avoid grazing.



Recommended Treatment Timeline

Control Type	Spring	Summer	Fall
Mechanical	Hand pull, bag and dispose	Hand pull, bag and dispose	Hand pull, bag and dispose
Biological	None available		
Cultural	Controlled burn, Revegetation		Revegetation
Chemical	Foliar spray		Foliar spray

Chemical Control

Follow the directions on herbicide labels, the label is the law. Calibrate equipment for accurate application. Commonly used herbicides are listed below, order of listing is not reflective of efficacy or recommendation.

Personal protective equipment must be worn when applying herbicides. Only apply herbicides in appropriate weather conditions.^a

Use appropriate surfactants as listed in the product label.^a

^aRead and follow all instructions in the label of the herbicide.

Chemical Control Table							
Use Site	Herbicide (Active Ingredient - Trademark)	Pre-emergent or Soil Residual Activity	Post-emergent (Foliar Applied)	Large Sprayer Rate per Acre	Spot Treatment Rate for Every 1 Gallon of Water	Restricted Entry Interval (Hours)	Application Notes and Environmental Advisories*
Turfgrass, Non-Cropland, Rangeland	2,4-D -Several products available	no	yes	1.5 - 2 qt	Consult label	48	Apply during seedling to rosette stage. Toxic to fish and aquatic invertebrates. Groundwater and surface water advisories.
Non-Cropland, ROW	Metsulfuron methyl - Escort XP ^b	no	yes	½ - 1 oz	1 gram	4	Apply during rosette to bloom stage. Groundwater and surface water advisories. Non-target organism advisory. Windblown soil particle advisory.
	Chlorsulfuron -Telar XP ^b	yes	yes	1 - 2.6 oz	0.6 - 1.6 gram	4	Apply during seedling to rosette stage. Groundwater and surface water advisories. Non-target organism advisory.

^bLewis and Clark County Noxious Weed Control Division does not endorse any trademarks or commercial names listed above.

This table summarizes selected registered use sites and is not intended to represent all approved uses. Pesticide applicability, use sites, and restrictions vary by product and formulation. Applicators must consult and follow the most current product label, which takes precedence over this document.

References

- Ditomaso, J. M., Kyser, G. B., Oneto, S. R., Wilson, R. G., Orloff, S. B., Anderson, L. W., Wright, S. D., Roncoroni, J. A., Miller, T. L., Prather, T. S., Ransom, C. V., Kenneth George Beck, Duncan, C. A., Wilson, K. A., J Jeremiah Mann, Department, Davis., & Weed, Davis. (2013). *Weed control in natural areas in the Western United States*. University Of California Weed Research And Information Center. 62719-259.
- Dyer's Wood — *Isatis tinctoria*. Montana Field Guide. Montana Natural Heritage Program.
<https://FieldGuide.mt.gov/speciesDetail.aspx?elcode=PDBRA1K010>
- Envu. *Escort XP*. U.S. Environmental Protection Agency Registration No. 101563-167.
- Envu. *Telar XP*. U.S. Environmental Protection Agency Registration No. 101563-176.
- PBI Gordon Corporation. *Gordon's Amine 400 2,4-D Weed Killer*. U.S. Environmental Protection Agency Registration No. 2217-2.



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