

# DALMATIAN TOADFLAX

*Linaria dalmatica*



## CONTROL

### Hand Pulling

Hand pulling may only be effective on extremely small infestations that have not yet established an extensive root system. For all other infestations, hand pulling is not an effective method of control.

### Mowing

Due to the extensive root system, mowing is not a recommended method of control, though it will reduce seed production if repeated often enough to prevent flowering.

### Biological control

There have been six biocontrol agents released in the U.S. for the control of Dalmatian toadflax. Of those, only one is readily available and known to be well established in Montana.

### Grazing

Sheep and goats can be trained to feed on Dalmatian toadflax and have been shown to consume nearly 90% of the vegetative matter, drastically reducing seed production but increasing overall toadflax density in the infestation from re-sprouting. The seeds of Dalmatian toadflax will

### Ideal Timing for Treatment Options

Spring	Summer	Fall
	Hand-pulling	
Biological Control		
Grazing		
Foliar		Foliar

pass through the systems of grazers unharmed, so be sure to contain animals for at least five days and feed them weed-seed free forage before moving them to a weed-free site.

### Herbicide

Herbicide treatments for Dalmatian toadflax are highly variable due to a thick, waxy covering on the leaves, creeping rhizomes and long-lived seeds. Timing of herbicide application may also play a large part in successful herbicide control. The herbicide chart on the back lists approved controls for Dalmatian toadflax. Always consult product labels and read them carefully to ensure correct species/land management usage and chemical application.



## Dalmation Toadflax Life Cycle

Life Cycle	Root	Leaves	Stems	Flower	Seed/Fruit
Perennial	Taproot and horizontal roots	Waxy, pale green to bluish-green. Heart-shaped to oval, alternate, smooth edges, and clasp stem.	Up to 3 feet tall, robust, waxy.	Bright yellow snapdragon-shape with an orange throat and a long spur. Occur along length of stem at top of plant.	Irregular angled seeds in two-celled capsule.

## Herbicides for Dalmation Toadflax, *Linaria dalmatica*

Active Ingredient	Rate	Efficacy	Comments
Chlorosulfuron	2-3 oz/acre	Apply to actively growing plants in bud or bloom stage	Foliar best on seedlings and saplings. Habitat is okay for riparian use. Though non-target species may be killed or injured through root transfer.
Imazapic	8-12 oz/acre	Apply in fall after a hard frost (top 25% of plant is necrotic)	Add methylated seed oil to mix. Note crop rotations.
Dicamba	1-3 qt/acre	Apply in early spring before toadflax reaches bloom stage	Avoid drift to sensitive crops. Dicamba severely injures or kills most broadleaf plants. Repeated applications may be necessary.
Picloram	1 pint/acre	Apply to growing toadflax in spring before full bloom or in late summer or fall	Do not apply to shallow groundwater areas. Avoid desirable broadleaf plants and diversified crop areas.

Information on diagnostic identifying characteristics adapted from "Montana's Noxious Weeds" by Pokorny and Mangold, Montana State University Extension Bulletin EB0159.