

# WHITETOP

Cardaria draba



## CONTROL

### Hand Pulling

The tremendously deep and rhizomatous root system of whitetop makes hand pulling an ineffective management tool in all situations except infestations that are very small and new.

### Mowing

While mowing may reduce seed production and biomass, it is not considered a viable management tool for whitetop.

### Tilling

Cultivation six inches deep and repeated within 10 days of regrowth is a very effective.

### Biological control

N/A

### Grazing

Cattle, sheep and goats will all utilize whitetop; however, this species contains toxic levels of glucosinolates which cause anti-thyroid symptoms in livestock. Recommended

## Ideal Timing for Treatment Options

Spring	Summer	Fall
	Tilling	
Grazing		
Foliar Spray		Foliar Spray

time for grazing is from the rosette to bloom stage when levels of glucosinolates are lowest. Avoid when seed pods are present (before fall). As with mowing, grazing will reduce biomass and seed production, but will not effectively manage whitetop infestations.

### Herbicide

Whitetop can be controlled with a number of herbicides, but it is difficult and usually requires a number of reapplications. The herbicide chart on the back lists labeled controls for whitetop. Always consult product labels and read them carefully to ensure correct species/land management usage and chemical application.



## Whitetop Life Cycle

Life Cycle	Root	Leaves	Stems	Flower	Seed/Fruit	Toxic
Perennial	Rhizomes	Blue-green to gray-green, alternate on stem, covered with soft white hairs, and lance- to arrowhead-shaped. Lower leaves stalked; upper leaves clasp stem.	Up to 2 feet tall.	Numerous white flowers with 4 petals borne on ½ inch long stalk. Dense clusters create white, flat-top appearance.		Cattle

## Herbicides for Whitetop, *Cardaria draba*

Active Ingredient	Rate	Efficacy	Comments
Imazethapyr	4-6 oz/acre	Apply as early as post emergence treatment when weeds are actively growing but before they reach 3 inches in height	Do not use near wells, surface water, or shallow ground water.
Chlorsulfuron	0.5-1 oz/acre	Apply when weeds are in the bud to early bloom stage. Can suppress whitetop regrowth for 1-2 years	Premature treatment may result in top kill of desirable grasses: be sure to allow native desirable species to be well established.
Metsulfuron methyl	1-2 oz/acre	Apply when weeds are in the bud to early bloom stage in non-crop areas with established grasses	Do not use near wells, surface water, or shallow ground water.
Imazapic	8-12 oz/acre	Apply after weeds reach full bloom or fall re-growth	See label for different grass species.
2-4, D	2 quarts/acre	Does not kill root crowns resulting in resprouting	Non effective herbicide
Glyphosate	Per label instructions	Does not kill root crowns resulting in resprouting	Non effective herbicide

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