WATCH OUT *for* Whitetop

by Kim Goodwin, Montana State University
& Dave Burch, Montana Dept. of Agriculture

Invasive weeds are non-native plants that invade ecosystems and replace native plants. Noxious weeds are usually invasive and designated by State law as priority plants that require control by landowners. These weeds can reduce grazing land and impact wildlife habitat. Early detection and quick response is critical to slow spread and protect weed-free areas. The purpose of this bulletin is to provide early control methods for whitetop (*Cardaria draba*). Contact your county weed coordinator or Extension agent for management of large infestations.

Whitetop (Mustard Family), a native of Eurasia, was introduced to North America in contaminated seed. Whitetop is a relatively long-lived, rhizomatous perennial forb. It has numerous white flowers with 4 petals, giving the plant a white, flat-topped appearance. Leaves are lance-shaped, alternate on the stem, and covered with soft white hairs. Mature plants can reach 2 feet tall. The roots usually occur to a depth of 30 inches, but some can reach 12 to 30 feet. The deep roots and rhizomatous nature of this plant make it difficult to control.

Habitat

Whitetop prefers open, unshaded areas. It occurs on fields, waste areas, meadows, pastures, croplands, and along roadsides. It grows well on alkaline soils that are wet in late spring. Whitetop generally grows better in moist sites or areas with at least 12 inches of annual precipitation. Whitetop invasion of arid rangelands is not common. This weed spreads vegetatively and can eliminate native vegetation. In the absence of competition, a single plant can produce more than 450 shoots and spread over an area 12 feet in diameter in a single year. With competition, a plant does not usually exceed 50 shoots per year.

Biology and spread

Whitetop reproduces by vegetative shoots and seeds. Plants emerge in early spring and flower in early summer. The plants usually set seed by mid-summer. If conditions are favorable, a second crop of seeds can be produced in the fall. A typical plant can produce 1,200 to 4,800 seeds each year. Buried seeds usually remain viable for about 3 years. Seeds are dispersed along roads, railways, and waterways. Seeds can be transported by water, wildlife, livestock, vehicles and equipment. Seeds are also dispersed to new sites in mud on boots and impure materials like mulch, forage and feed grains, crop and grass seed, top soil, and gravel.

Early control methods

Young, individual seedlings may be hand-pulled before the root system becomes extensive. Small patches with developed root systems should be treated with herbicides. Follow-up applications will be necessary to impact the root system and ensure reproduction is stopped completely.

Herbicide selection and timing should be advised by your county weed coordinator and application must follow label directions. Applications of 2,4-D alone are not very effective. Roots may rapidly sprout new growth and repeated applications are usually required. But this herbicide may be the only cost-effective choice near water. Effective herbicide treatments on sites distant from surface or ground water follow. Include surfactants to improve herbicide performance.

- Metsulfuron (Escort®) applied at a rate of 1 to 2 ounces/acre plus 2,4-D at a rate of 1 quart/acre.
- Chlorsulfuron (Telar®) applied at a rate of ½ to 1 ounce/acre plus 2,4-D at a rate of 1 quart/acre.

Photo by C. Evans

Whitetop flowers are flat-looking and clumped at the top of the stem.

Acknowledgements

This bulletin was produced with suggestions from Jim Jacobs, Connie Bollinger, Shana Wood and Susan Anderegg. Funding assistance was provided by the Montana Noxious Weed Trust Fund.

Prevent whitetop spread and colonization by locating and eradicating new plants and patches. The key to eradication is 100% control to prevent reinvasion and eliminate root reserves. Prevent invasion by using weed-free mulch, forage and feed grains, crop and grass seed, top soil, and gravel. Monitor sites for new weeds where at-risk material was used. Revegetate disturbed areas with native grasses and maintain healthy and competitive native plant communities to hinder invasion. Encourage outdoor users to clean equipment, remain on trails, and report new invasions.

MONTANA STATE UNIVERSITY EXTENSION

#EB0175