

Dalmatian toadflax

Dalmatian toadflax (*Linaria dalmatica*)

Dalmatian toadflax is a noxious weed that many mistake for a wildflower due to its pretty snapdragon like yellow flowers. It was introduced from the Mediterranean region to the Northeastern US as an ornamental garden flower in the 1800's. It quickly escaped cultivation and currently resides in over 34 states and is considered a noxious weed in most of the western states. It has a deep spreading perennial root system that makes it difficult to pull and allows it to spread vegetatively. It also has waxy leaves making it extremely difficult for most herbicides to penetrate the leaves. It is incredibly competitive in western ecosystems where it can outcompete surrounding desirable vegetation eventually turning areas into a near monoculture. These invaded landscapes cannot be utilized by grazing cattle due to mild toxicity. They also may offer less wildlife habitat value due to reductions in perennial grass availability.

Dalmatian Toadflax Control methods

Herbicide control

Dalmatian toadflax is a difficult to control species. There are several different chemicals available for Dalmatian toadflax, although some of the most commonly used herbicides are restricted use meaning a licensed applicator must be utilized. Because Dalmatian toadflax is a perennial plant that can persist from its root system, all current herbicides systemic herbicides, meaning they are capable of moving to and controlling the root system. These current herbicides have varying success in controlling Dalmatian toadflax and when used improperly can sometimes lead to injury with desirable plants. Regardless of the herbicide used, nearly all studies have shown that best timing to treat toadflax is the fall when plants appear to be dying back to their root systems.

For more detailed information on herbicides for Dalmatian toadflax contact your local weed and pest. You can also contact the Laramie County Conservation District for an onsite consultation of the weeds on your property.

Mechanical methods

Dalmatian toadflax is a perennial invader, meaning the root system must be controlled in addition to aboveground biomass - this is difficult to do. Mechanical methods can also help slow the spread if they are employed early enough in the season to stop seed production. However, because Dalmatian toadflax is so vigorous, if plants are managed too early, they may be able to regrow and still produce seed by season's end.

Pulling and digging will only be effective if they are performed for multiple years to deplete the perennial roots reserves while ensuring seed production is halted. However, these activities can also create significant soil disturbance which can lead to reinvasion. Mowing can also remove aboveground biomass with less ground disturbance but may take an even greater period of time to reduce Dalmatian toadflax density than digging. If birds are a concern, when mowing in June make sure to walk the area

prior to mowing to determine if there are any ground nesting birds with nests in the same location. You will see the birds flush as you walk the area which can help locate nesting locations.

Bio-control

There are two relatively similar species of insects available for toadflax control in Wyoming. The most effective is the Toadflax stem boring weevil *Mecinus janthiniformis*. As the name suggests, this weevil penetrates the stem and bores into the base of the plant, causing significant damage to the plant. The weevil is usually released in the late spring to early summer to ensure it has time to establish within the plant before winter conditions occur. Some research has found that this weevil is capable of reducing the density of Dalmatian toadflax, but no research has found it to successfully eradicate.

Successful releases tend to be associated with dense and large invasions of Dalmatian toadflax suggesting the weevil population requires a certain size of invasion. They also tend to persist better in areas that do not become wind scoured during the winter. This has been hypothesized to be because the insulative qualities of snow protect the weevils from harsh Wyoming temperatures during the coldest months; however, studies have not been done to confirm these observations.

Livestock, particularly goats and sheep have also been used to manage toadflax. Much like mechanical control strategies, targeted grazing can only target aboveground growth meaning a long-term commitment is likely required. Currently no studies have shown effective control through targeted grazing alone, but in combination with herbicides can effectively reduce the density of Dalmatian toadflax. Do not overgraze pastures. Overgrazing reduces the capability of existing grasses to compete with weeds.

Prevention

No post-invasion management methods are consistently effective at controlling Dalmatian toadflax. Thus, prevention is the most effective and economical method of Dalmatian toadflax control, especially in places like Wyoming where Dalmatian toadflax is still spreading. Early detection of an invasion in an area is the best way to keep Dalmatian toadflax out of an area. Inspect your property at least annually for any plants and respond to new issues as soon as possible. Research has shown the likelihood of eradicating invasive plants is far greater when they are responded to within the first year and when the population is small.

If uncertain about the identification of a suspected plant, please contact the weed and pest district or conservation district for assistance.

For more information on Dalmatian toadflax or other weeds contact the Laramie County Conservation District at 772-2600 or the Laramie County Weed and Pest 245-3213 or 634-5348

Here are some informational websites on weeds.

<https://wyoweed.org/>

<http://laramiecountyweeds.com/weeds>

<https://www.lccdnet.org/>