



Dalmatian Toadflax *Linaria dalmatica* (L.) P. Mill.

Synonym: *Linaria genistifolia* ssp. *dalmatica* (L.) Maire & Petitm.

Common Names: Dalmatian toadflax, broadleaf toadflax

Native Origin: A plant native from central Europe east to central Asia; originally introduced into North America as an ornamental plant

Description: Dalmatian toadflax is a short-lived, herbaceous perennial in the figwort family (*Scrophulariaceae*) that grows up to 4 feet tall. Stems are somewhat woody at the base, and frequently branched in the upper portion. Both leaves and stems are waxy. Leaves are heart-shaped, 1 to 3 inches long and with clasping bases. Flowers are bright yellow with orange markings and elongate spurs and occur in simple racemes on the stems. Flowering occurs from mid-summer to early fall. Seed capsules are ½-inch long pods and bear an average of 140 to 250 small black to brown seeds with wings. Taproots may reach depths of 4 to 10 feet, and lateral roots can extend 12 feet from the parent plant.



Habitat: Dalmatian toadflax is typically found along disturbed sites, roadsides, clear cuts, railroad right-of-ways, fences, croplands, pastures, and rangelands. It prefers dry sites with coarse, well-drained soils.

Distribution: Dalmatian toadflax is classified as a noxious weed or weed seed in 22 states in the U.S. and 3 Canadian provinces. This species is reported from states shaded on Plants Database map and invasive in AZ, ID, UT, and WA.

Ecological Impacts: Dalmatian toadflax is capable of forming colonies through adventitious buds from creeping root systems. It can rapidly colonize disturbed or cultivated ground to out-compete desirable native plant species and decreases plant species diversity. It can significantly reduce crop yields and stress native communities. It can compete to reduce the abundance of grasses and other forbs. In a study, toadflax-free plots produced 2.5 times more grass than plots where toadflax was present.

Control and Management: Keys to successful control include prevention of seed production, depleting root reserves, and killing seedlings before vegetative reproduction begins.



- **Manual-** Hand-pulling, mowing, and tillage can be effective in preventing seed production and starving toadflax roots, thereby controlling infestations under certain conditions only if done repeatedly and/or in combination with other control methods
- **Chemical-** Effective herbicides for Dalmatian toadflax include chlorsulfuron, dicamba, picloram and imazapic. It may be necessary to retreat infestations every 3 to 4 years. Follow label and state requirements. Triclopyr and glyphosate do not effectively control this plant.
- **Biological control-** Flower feeding beetles (*Brachyterolus pulicarius* and *Gymnetron antirrhini*) reduce seed production in toadflax.

References: www.forestimages.org, <http://plants.usda.gov>, www.nps.gov/plants/alien, www.fs.fed.us/database/feis/plants/forb/linspp/index, www.invasivespeciesinfo.gov/plants/toadflax.shtml, www.denix.osd.mil/denix/Public/ES-Programs/Conservation/Invasive/natural.html#toad, www.cdfa.ca.gov/phpps/ipc/weedinfo/linaria.htm, www.oneplan.org/Crop/noxWeeds/nxWeed05.htm, www.nysaes.cornell.edu/ent/biocontrol/weedfeeders/toadflax.html, tncweeds.ucdavis.edu/esadocs/linadalm.html