Yellow toadflax

Linaria vulgaris

Colorado Department of Agriculture

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Yellow toadflax Identification and Management

Key ID Points

1. Yellow flowers that are like snapdragons with deep orange centers.
2. Stems that are woody at the base and smooth to the top.

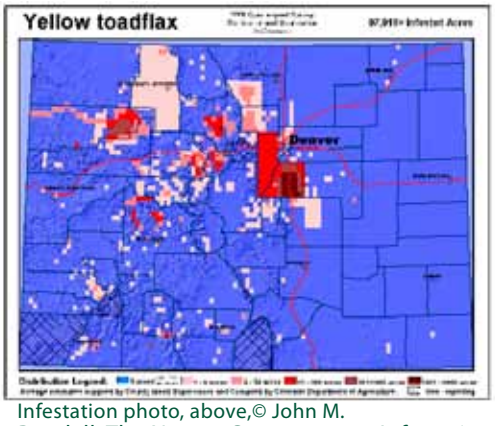
Identification and Impacts

Yellow toadflax (Linaria vulgaris) is a perennial escaped ornamental plant that is native to the Mediterranean region. The leaves are narrow, linear, and 1 to 2 inches long. The stems are woody at the base and smooth toward the top. Sparingly branched and 1 to 3 feet tall. The showy snapdragon-like flowers are bright yellow with a deep orange center and have a spur as long as the entire flower. It develops an extensive root system, making control options varied. Yellow toadflax displaces desirable plant communities reducing ecological diversity and rangeland value. Decreases forage for domestic livestock, some big game species and decreases habitat for associated animal communities. The plant is known to be mildly poisonous to cattle. Goats and sheep have been known to graze the plants with little effect.

Habitats for Yellow toadflax include roadsides, vacant lots, gravel pits, fields, waste areas, other disturbed sites and rangeland. It has adapted to a variety of site conditions, from moist to dry and does well in all types of soil. The plant can even establish in areas of excellent condition in natural disturbances or small openings.

The key to effective control of Yellow toadflax is prevention and integrating as many management strategies as possible. Prevention is always desirable when dealing with Yellow toadflax. Early detection and eradication can keep populations from exploding, making more management options available. With the plants varying genetically using many different approaches is important such as; herbicide, mechanical, cultural and biological methods. Details on the back of this sheet can help to create a management plan compatible with your site ecology.

Yellow toadflax is designated as a "List B" species in the Colorado Noxious Weed Act. It is required to be either eradicated, contained, or suppressed depending on the local infestations. For more information visit www.colorado.gov/ag/weeds and click on the Noxious Weed Management Program. Or call the State Weed Coordinator at the Colorado Department of Agriculture, Conservation Services Division, 303-239-4100.



Infestation photo, above,© John M. Randall, The Nature Conservancy. Infestation map, Crystal Andrews, Colo.Dept.of Agriculture. Flower photo, top, © Missouri Extension. Flower bract photo, left,© Paul Slichter, University of Wisconsin, Stevens Point. Leaves photo © Gary Fewless, Unviersity of Wisconsin, Stevens Point.

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Management Recommendations

Yellow toadflax

CULTURAL
Establish select grasses and forbs as an effective cultural control of Yellow toadflax. Contact your local Natural Resources Conservation Service for seed mix recommendations. Bareground is prime habitat for weed invasions, so maintain healthy pastures and prevent bare spots caused by overgrazing.

BIOLOGICAL
Calophasia lunula, a predatory noctuid moth, feeds on leaves and flowers of Yellow toadflax. Eteobalea intermediella, a root boring moth and Mecinus janthinus a stem boring weevil are also available. For more information, contact the Colorado Department of Agriculture's Insectary in Palisade, Colorado at 970-464-7916.

MECHANICAL
Handpulling or digging is not recommended for eradication of Yellow toadflax because it's unlikely that the entire root will be excavated and a new plant is likely to occur. A single new plant might be an exception. Tillage is not recommended due to the creeping root system.

Integrated Weed Management:

Because of the high genetic variability of the toadflax species it is critical to integrate as many management strategies as possible into the control program. Two local populations may respond differently to the same herbicides.

Keys to management are to prevent seed formation and vegetative spread by roots. Controlling is expensive and difficult to treat toadflaxes, prevention is the best option.

HERBICIDES

NOTE: The following are recommendations for herbicides that can be applied to range and pasture-lands. *Rates are approximate and based on equipment with an output of 30 gallons per acre.* Always read, understand, and follow the label directions. The herbicide label is the LAW!

Herbicide	Rate	Application Timing
Aminocyclopyrachlor + Chlorsulfuron (Perspective)*	4 oz. product/acre + 0.5% v/v methylated seed oil	Apply at flowering through fall post-flower into senescence. IMPORTANT: Applications greater than 5.5 oz. product/acre exceeds the threshold for selectivity. DO NOT treat in the root zone of desirable trees and shrubs. Not for use on grazed or feed forage.
Picloram* (Tordon/Picloram 22K - Restricted use pesticide) + Chlorsulfuron (Telar)	1 qt./acre Tordon + 1.25 oz./acre Telar + 0.25% v/v non-ionic surfactant	Apply at flowering through fall post-flower into senescence. Typically late August through September application timing has shown best results. Re-treatment may be necessary. Refer to label for grazing restrictions on Telar. DO NOT use near trees, desirable shrubs, water, or high water table.
Note: *Product not permitted for use in the San Luis Valley.		
Additional herbicide recommendations for this and other species can be found at: www.colorado.gov/agconservation/CSUHerbicideRecommendations.pdf		

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