

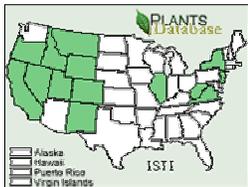


# Dyer's Woad *Isatis tinctoria* L

**Native Origin:** Dyer's woad was introduced into North America from Europe, in the late 17th century. It was introduced into Virginia where it was cultivated as a blue dye and has since naturalized as a weed of dry areas.

**Description:** Dyer's woad can be a winter annual, biennial, or short-lived perennial, 12 to 48 inches in height, in the mustard family (Brassicaceae). Leaves are alternate, simple, petiolate, bluish-green with a prominent whitish mid-vein and are up to 8 inches long. Stems are up to 4 feet tall and bear ¼-inch wide, yellow flowers in flat-topped clusters during May and June. Fruits are teardrop shaped, ¾-inch long, purplish-brown at maturity, pendulous, and each contains a single seed. It spreads primarily by seed. Thick taproots penetrate the soil to an average depth of about 5 feet.

**Habitat:** It invades disturbed and natural areas. It is found on dry, rocky or sandy soils, dry pastures, uncultivated fields, roadsides, railroad rights-of-ways, forest and rangeland.



**Distribution:** Its current distribution in the U.S. includes eastern states of New York, New Jersey, Virginia, West Virginia, and Illinois. It is also located in the western states and is a serious weed problem to Utah, Idaho, Wyoming, California, Oregon, Montana, and Nevada.

**Ecological Impacts:** This species occurs in dense infestations, out-competes native vegetation, it reduces forage availability by suppressing annual grasses.

**Control and Management:** Repeated treatment may be necessary because seed-bank may persist for several years.



- **Manual-** Mowing is not effective due to re-sprouting from the crown. Hand pull after the plants have bolted and before seed set. Remove the crown to prevent re-sprouting.
- **Chemical-** Use herbicides, 2,4-D is the most economical treatment. Plants should be treated in the seedling to rosette stages. A one-percent solution is effective for spot treatments. Dense infestations require higher labeled rates (1.9-2.85 lb ae/A) for control. Follow label directions and state requirements.
- **Biological Control-** Eurasian rust fungus, *Puccinia thlaspeos* C. Schub is used in the United States. The rust enters the plant through the leaves and is systemic in nature. Severely infected plants produce few to no seed and mortality is frequent in infected seedlings and rosettes.

**References:** [www.oneplan.org/Crop/noxWeeds/nxWeed07.htm](http://www.oneplan.org/Crop/noxWeeds/nxWeed07.htm), [www.plants.usda.gov](http://www.plants.usda.gov), [www.cdfa.ca.gov/phpps/ipc/weedinfo/isatis.htm](http://www.cdfa.ca.gov/phpps/ipc/weedinfo/isatis.htm), [www.cdfa.ca.gov/phpps/ipc/weedinfo/isatis.htm](http://www.cdfa.ca.gov/phpps/ipc/weedinfo/isatis.htm)  
European Biological Control Laboratory, USDA-ARS, France

