Yellow Star Thistle

Common names: Yellow starthistle, St. Barnaby's thistle, golden starthistle, yellow cockspur, and cotton-tip thistle

Scientific name: *Centaurea solstitialis* L.

Related species: Other knapweeds and starthistles including the similarly yellow flowered starthistles *C. melitensis* L. and *C. sulphurea* Willd.


Yellow starthistle seedlings


Yellow starthistle plants


Yellow starthistle seedhead

Yellow starthistle is an early detection target species. Information on reporting yellow starthistle infestations

Yellow starthistle is one of the most serious weed species in the West. There are no documented reports of yellow starthistle in Minnesota. If allowed to establish in Minnesota, it is probable that yellow starthistle would be highly damaging. The goal is to find and eliminate populations before they become established and spread.

Native to Asia Minor, the Middle East, and south-central Europe, yellow starthistle was probably brought to North America in the mid-1800s as a contaminant of alfalfa seed. By the early 1900s, yellow starthistle had overtaken several wheat fields and pastures and began to spread rapidly. Based on a 2003 estimate, there are approximately 15 million acres of yellow starthistle in 17 western states.

Description
An annual (occasionally biennial) weed, yellow starthistle forms a rosette in the fall. Basal rosette leaves are lobed and approximately 2-3" long. Plants bolt in the spring and summer and send up multiple flowering stalks. The stems are winged and branched. Stem leaves are alternate, narrow, have few or no lobes, and are approximately 1/2-1" long. The grayish-green stems and leaves are covered with wooly hair. Height is highly variable ranging from 6 inches to 6 feet depending on conditions, but height averages around 1-3 feet. Flower heads are golden yellow and approximately 5/8" in diameter. A pointed yellowish spine is formed at the end of each bract. Together they look like a ring of spikes just below the flowers. The flowers are pollinated primarily by bees. Two types of seed are produced. Seeds in the center of the seedhead have white pappi (fluffy hairs) that aid seed movement by wind and animals. Seeds near the seedhead edge do not have pappi.


Yellow starthistle rosette


Yellow starthistle flower and seedheads


The basal rosette leaves of yellow starthistle are deeply lobed


There are 2 types of yellow starthistle seed. Most seed produced has the white, fluffy hairs (Image credit: Cindy Roche, Bugwood.org)

Habitat
Yellow starthistles thrives in sunny, open areas such as grasslands, fields of alfalfa and small grains, and roadsides. It can tolerate a wide range of soil moisture conditions.

Means of spread and distribution (View yellow starthistle distribution)
Yellow starthistle reproduces exclusively by seed. Seeds can remain dormant in soil for 10 years. Established stands produce large amounts of seed that can be spread by wind, water, vehicles, humans, wildlife, and by moving soil, hay, or grain containing seed. There are no documented reports of yellow starthistle in Minnesota. View yellow starthistle distribution

Impact
In the West, yellow starthistle is invasive and displaces desirable vegetation forming dense monocultures. Decreases in soil moisture, forage, and plant species diversity have been documented. Infestations reduce pasture forage quality and the spines can injure the eyes, noses, and mouths of grazing animals. Yellow starthistle is toxic to horses and causes "chewing disease". Yellow starthistle seeds can be a contaminant in harvested grain reducing quality and value. In natural areas, yellow starthistle can substantially diminish native plant and animal diversity.

Prevention and management
Be on the lookout for yellow starthistle. It may arrive from one of the western states as a contaminant of other plant materials or on vehicles or other equipment. If you suspect that you found yellow starthistle, please report the find to the Minnesota Department of Agriculture.

Yellow starthistle management tools and methods include hand pulling, herbicide application, biological control, targeted grazing, and prescribed burning. In Minnesota, eradication is the treatment goal so all plant parts must be destroyed either by hand pulling and bagging or by herbicide treatment.


Yellow starthistle infestation (Image credit: Steve Dewey, Utah State University, Bugwood.org)

Legal status
Yellow starthistle is a prohibited noxious weed on the eradicate list. This means that all of the above and below ground parts of the plant must be destroyed, as required by Minnesota Statutes, Section 18.78. Additionally, no transportation, propagation, or sale of these plants is allowed.

Toxicity
Yellow starthistle is toxic to horses and causes "chewing disease". In most cases, horses die from starvation or dehydration because chewing disease results in permanent, untreatable brain damage to the fine motor control area. Yellow starthistle is not toxic to other grazing animals, including mules and burros.