



WASHINGTON STATE Noxious Weed Control Board

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Malta starthistle

Centaurea melitensis



By Franco Folini, CC BY-SA 2.0, <https://commons.wikimedia.org/w/index.php?curid=24443015>

Family: Asteraceae

Other Common Names:

Tocalote, Maltese starthistle,
Napa thistle

Weed class: B

Year Listed: 2018

Native to: The
Mediterranean region, from
southern Europe and
northern Africa

Is this Weed Toxic?:

possibly toxic to horses

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Why Is It a Noxious Weed?

This is a new noxious weed for 2018. Malta starthistle causes detrimental impacts to ecosystems, being able to displace native plant species and impact wildlife. It has been found to negatively impact endangered plant species in California, reducing other plants' abilities to reproduce. While invading disturbed habitats, it can also establish in undisturbed habitats, competing with other species for resources such as nutrients, light, and water. It may poison and cause horses to develop "chewing disease" (Equine nigropallidal encephalomalacia), but as yet, its toxicity has not been confirmed experimentally.

How would I identify it?

General Description

Malta starthistle is an annual that begins as a basal rosette of leaves, then grows stems up to ~3 feet tall, though often shorter, with spiny yellow flowerheads that resemble yellow starthistle, *Centaurea solstitialis*, a Class B noxious weed. Plants have simple to branching wiry stems, covered in hairs, being loosely gray-tomentose.

Flower Description

Like yellow starthistle, flowerheads of Malta starthistle, are comprised of yellow disk flowers. Flowerheads are single or in clusters of two to three. Base of the flowerhead is egg-shaped, 8-15 mm, loosely cobwebby-tomentose or becoming glabrous. Main bracts have a slender, central spine at the tip, 5-12 mm long that is often purplish to brownish colored. At the base of the central spines are lateral spines, usually in 3 to 4 pairs, with the upper pair near the middle of the central spine. The yellow disk florets can be sterile or fertile.

Malta starthistle has both cleistogamous flowerheads (self-fertilizing flowers that do not open) and chasmogamous flowerheads (flowers that open and can be cross-pollinated).

Leaf description

Like stems, leaves are often grayish-green, covered in stiff hairs and minute resin glands. Often, the older leaves have sparse, fine, white cottony hairs. Basal rosette leaves and lower stem leaves have petioles or tapering leaf bases, with leaf blades that are longer than wide, with typically the widest point toward the tip, and tapering to the base. Leaves 0.8 to 6 inches (2 to 15 cm) long. Leaf margins are smooth to toothed, or deeply lobed. The terminal lobe is usually the largest and rounded at the tip.

Stems leaves are alternate and become linear to oblanceolate (wider toward the tip), moving up the stem, 0.4 to 2 inches (1 to 5 cm) long, with margins that are entire, toothed or wavy. Basal rosettes and sometimes lower stem leaves may wither by the time plants begin to flower.

Stem description

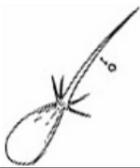
Plants grow one to a few main stems that branch toward the top of the plant. Stem leaf bases extend down the stem, giving a winged appearance. Stems are grayish-green, covered in stiff hairs, sometimes minutely scabrous and minutely resin-gland dotted.

Fruit Seed Description

Each fertilized flower can produce a dry, single-seeded fruit with attached bristles, called a cypsela. Cypselae are dull white, to gray to tan, often with slightly darker stripes, and are about 2 to 3 mm long. The pappus is made up of many white to pale tan, unequal, stiff bristles, 1 to 3 mm long. The base is deeply notched with a scar.

May Be Confused With

Malta starthistle and similar species comparison table from our [written findings](#):

	Habit	Leaves	Flower	Bracts	
Malta starthistle, <i>Centaurea melitensis</i>	Typically shorter than yellow starthistle, growing up to 3 feet tall. Grayish green color covered in stiff hairs and glandular dots.	Basal and lower leaf margins entire to deeply lobed, rounded larger lobe at tip.	Flowerheads smaller than yellow starthistle; about ½ to 5/8 inch; self-fertilizing flowerheads do not open.	Central spine about 0.2 to 0.5 inches, 5 to 10 mm (-12mm) long, tinged purple to brown; dense to sparse cobwebby hairs.	 © Ron Vanderhoff
Yellow starthistle, <i>Centaurea solstitialis</i>	Branched stems with wings, grayish-green, plant covered in woolly hairs, up to 3.3 feet	Basal and lower leaves deeply lobed, upper stem leaves smaller, thin and pointed	Flowerheads terminal, up to an 1 inch; made up of small, yellow flowers	Tip of bract with still, straw-colored spine, up to 1 inch long	Image from PNW 432 
Bighead knapweed, <i>Centaurea macrocephala</i>	Tall perennial, grows up to 5.6 feet	Light-green, broadly lance-shaped with toothed edges and pointed tips	Large, solitary flowerheads are 1 to 3 inches in diameter; flowers yellow	Bracts light green to golden, with thin, papery, fringed margins, no sharp central spine.	Image from PNW 432 
Purple starthistle, <i>Centaurea calcitrapa</i>	Forms a rosette with cluster of spines at center; multiple branched stems; bushy growth habit; young plants covered with cobwebby hairs, becoming hairless with age.	Basal and lower leaves deeply lobed and divided; upper stem leaves narrow and undivided.	Flowerheads narrow; made up of light to dark purple flowers; seeds without a pappus (plume)	Bracts with spine tips, up to 1.2 inches long	

Where does it grow?

Malta starthistle grows in open, disturbed habitats such as grasslands, rangelands, creek beds, fields, pastures, roadsides and waste places. In California, plants have also established in less disturbed to undisturbed communities such as pine-oak woodlands, chaparral, coastal dunes and bluffs, wetlands, and even serpentine habitats. [View the county level distribution map](#) of Malta starthistle.

How Does it Reproduce?

Malta starthistle reproduces by seed. Seed production per plant is highly variable. Seeds fall near the plant and also may be dispersed a short distance by wind. Seeds can then be further dispersed by people, animals, water and soil movement.

How Do I Control It?

It is important to use an integrated weed management plan when controlling invasive plant populations. Using a combination of methods that can be adapted over time as on the ground conditions change can provide successful control of populations. Monitoring and additional control work will be essential to prevent Malta starthistle from reestablishing. Since Malta starthistle is an annual, it is key to deplete the seedbank with multiple years of management to control infestations. Where populations are limited, plants should be removed quickly before additional seed can be produced and spread. Removing invasive species can open up a habitat to reinvasion if follow-up management does not occur. By planting a variety of desirable species, a community will be present to provide competition and shading to weed seedlings and to also provide a food source for pollinators. When possible, carry out control methods when pollinators are not active on plants. Wear protective clothing when working among plants with developed flowerheads to avoid injury from the spines. Also, make sure to clean equipment, tires and shoes when leaving infestations to prevent spread.

Mechanical/Manual methods:

Removal methods such as hand-pulling, mowing, or cultivation (when used to prevent seed production), should reduce and eventually eliminate the infestation. DiTomaso et al. (2013) recommend using the same mechanical control methods used on yellow starthistle to

control Malta starthistle, as they are expected to be effective.

Malta starthistle plants can be hand-pulled, making sure to remove as much of the taproot as possible. The best time to pull plants is either as rosettes or after they have bolted but before they have produced viable seed—so before they begin to flower. Repeatedly hoeing plants can also be effective at controlling small infestations. Bag and trash pulled plants as unopened flowerheads may be self-fertilizing and can produce viable seed. Plants may be easier to pull if they are under stress from competing vegetation.

When it's feasible to use, mowing should take place only when plants are in late bud or early bloom stage. Mowing should occur regularly at a height that will remove the lowest branches. Leaves should not be left below the level of the cut (USDA forest service 2015). If mowing mature plants that are in flower, collect mowed material to prevent dispersing the seed.

Cultural Methods:

There have not been any studies conducted on the effectiveness of using prescribed fires as a control method for Malta starthistle.

Biological Control:

Grazing may provide some control, but no studies have been conducted on its effectiveness. Short-duration, intensive grazing may be part of an effective control strategy to manage Malta starthistle, especially when combined with other control methods. Sheep, goats and cattle may graze plants in the early spring before flowerheads have formed. Avoid having horses feed on Malta starthistle plants in case it may cause chewing-disease, and ensure other suitable forage is available for

other livestock. No specific biological control agents have been researched and released to control Malta starthistle.

Chemical Control:

Use herbicide control in combination with other control methods to reduce usage when possible. If using a foliar spray, treat plants when pollinators are not present or are the least active.

Centaurea melitensis is not currently included in The Pacific Northwest Weed Management Handbook but check back as this resource is continually updated:

<https://pnwhandbooks.org/>

The [Malta starthistle weed report](#) from the book [Weed Control in Natural Areas in the Western United States](#) (DiTomaso et al. 2013) provides herbicide control recommendations.

For More Information

[Download the written findings for Malta starthistle, *Centaurea melitensis*](#)

[Malta starthistle weed report from the book *Weed Control in Natural Areas in the Western United States*](#)

[Field Guide for Managing Malta Starthistle in the Southwest](#)

[Comparison images with Malta starthistle and similar species](#)

[CalPhotos: additional images of Malta starthistle, primarily from California](#)

Additional Photos



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