

Yellow Starthistle

Centaurea solstitialis

Physical Control:

1. Burning: Consult local fire departments for information regarding controlled burns. Burns should be performed following the rainy season after annual grasses die. Continue annual burns for 3 years to deplete the soil seed bank.
2. Grazing: Allow sheep, goats, or cattle to graze on plants before spines emerge, from February to August. Do not move livestock to a non-infested area without checking and removing seeds from fur and hooves. WARNING: Yellow starthistle is toxic to horses.
3. Hand-pulling: Remove plants with at least one inch of root below the crown before seed is produced. If hand-pulling after seed production, carefully clip off flowerheads and collect in a bag before removing plants.
4. Mowing: Mow soon after bolting, but before seed production. Repeat mowing 4 to 5 weeks later. Do not mow early on in plant growth, because it will induce rapid regrowth.

Biological Control:

For information regarding all of these insects, see www.agrobiologicals.com. Contact BioCollect (510) 436-8052 for ordering *U. sirunaseva* and Integrated Weed Control (888) 319-1632 to order the three other insect species.

1. Weevils (*Bangasternus orientalis* and *Eustenopus villosus*)
2. Flies (*Urophora sirunaseva* and *Chaetorellia australis*).

Chemical Control:

Use herbicides only when it is sure that the affects will cause more biological or ecological good than harm. Contact the State Department of Agriculture or County Agriculture Commissioner to learn information regarding state and local application permits and posting requirements. Be sure to follow all label instructions and warnings. See table for herbicide specifics. All of the herbicides listed affect a wide spectrum of broadleaf plant species.

Commonly used herbicides for yellow starthistle control (modified from Bussan and Dyer 1999, <http://wric.ucdavis.edu/yst/manage/management15.html>)

Common name	Trade name	When to Apply	Rate of Application*
2,4-D	Class®, Navigate®, Weedar®, and others	Apply Jan. - Mar. to rosettes. Post-emergence only from seedling to bolting	Apply 8-12 oz. active ingredient per acre
Clopyralid	Transline®, Stinger®, Reclaim®, Curtail®	Apply Dec. - Mar. Effective both pre- and post-emergence	Transline®: Apply 4-10 oz. product per acre
Dicamba	Banvel®, Vanquish®	Apply Jan. - Mar. to rosettes. Post-emergence only from seedling to bolting	Banvel®: Apply 8-12 oz. active ingredient per acre
Glyphosate	Roundup®, Rodeo®, Accord®	Apply late Mar. - mid-May. Post-emergence, seedling to early flowering	Apply 16 oz. active ingredient per acre
Triclopyr	Remedy®, Garlon®	Apply Jan. - Mar. Post-emergence only, good on seedlings, fair on mature plants	Remedy®: Apply 8-24 oz. active ingredient per acre

* http://www.cdfa.ca.gov/phpps/ipc/weedmgmtareas/MariposaMF/yst_bio-mgt.pdf

Long-term Control:

An Integrated Pest Management (IPM) program utilizing a combination of control methods is most desirable. Once dense stands of starthistle are removed, revegetate the area with native perennial grasses. Continue to monitor the area annually for starthistle reinvasion.