

# Yellow Starthistle

*Centaurea solstitialis*



## FAMILY

Asteraceae - daisies & sunflowers

## ORIGIN

Mediterranean

## LIFE CYCLE

Annual or biennial

## OTHER NAMES

Yellow star-thistle, St. Barnaby's thistle

### QUICK FACTS

- Yellow starthistle can grow up to **5 feet tall** and has long, sharp spikes around its yellow flowers. As it matures, it loses nutritional value to livestock, and the spikes deter livestock from grazing in contaminated fields. Spikes can also cause **puncture wounds** to those who come in contact with them.
- Originating from the Mediterranean region, yellow starthistle spread through **contaminated alfalfa seeds**, traveling from South America to California and later spreading to the majority of the U.S. It is now considered **invasive** in most Western states.
- Yellow starthistle is **toxic** to horses, causing a nervous disorder called **"chewing disease"**. It often outcompetes native plants by forming dense, **allelopathic** monocultures, which can have a negative impact on ecosystems.

Yellow starthistle has become invasive throughout most of the U.S., but has become a severe problem in western states. It is often spread through contaminated seeds, but with its allelopathic tendencies, long germination cycle, and density, yellow starthistle can easily outcompete most native plants. Its sharp spikes and toxicity to horses limit grazing in contaminated fields. Yellow starthistle mainly grows in disturbed areas, but its long germination period gives this thistle more opportunities to outcompete other plants.

### What does it look like?

Yellow starthistle is a gray-green to blue-green forb that can be either an annual or biennial, depending on the region's rainfall patterns, and can grow up to 5 feet tall. It has yellow thistle-like flowers with spikes around the base. Stems of mature plants are rigid and covered with a white, cottony wool. While similar in appearance to many varieties of knapweed and thistle, Yellow starthistle can be identified by spikes around the flower base, a yellow flower, and a preference for full sun.



Radha Veach, inaturalist.org

**Plant:** This weed begins as a rosette with simple roots and continues to develop its roots until it is ready to bolt. Its stem appears winged, is rigid, and covered with a whitish cottony wool that extends to the stem's leaves. The stem can vary in size from 4 inches to 5 feet tall. Yellow starthistle is compact and flat when in full sunlight, but larger in low-light settings.



Cindy Roche, Bugwood.org

**Roots:** Yellow starthistle has deep taproots that can extend over 3 feet down by mid-spring, growing at a rate of approximately one inch per day.



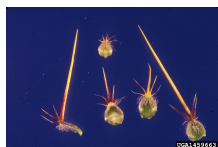
Mary Ellen (Mel) Harte, Bugwood.org

**Leaves:** Basal leaves are about 3 inches long and deeply lobed, and can vary in quantity from 6 to 28. The stem leaves are only about 1 inch long and entire (without lobes). The stem leaves are linear in shape and have woolly hairs throughout the growing season.



University of Idaho, University of Idaho, Bugwood.org

**Flowers:** Flower buds grow singly from the ends of a short stem, usually 6 weeks after germination. They have many bright, thistle-like yellow flowers. Straw-colored spikes grow from flower bracts in a radial star shape and are about 1 inch long.



Steve Dewey, Utah State University, Bugwood.org

**Seeds:** Nearly fully dispersed 3 weeks after flowering, and have a longevity of up to 10 years. Two types of seeds grow in seed heads; The outer rings are dark and lack a pappus, while the rest are brown with a pappus ring. Seeds germinate over an extended period, typically starting with the first rainfall and concluding with the last rain. Both seed types germinate at different times of year. Dense seedling cover causes seedlings to compete with each other for sunlight, resulting in low seedling survival rates.

# Impact and Management

## Livestock

Yellow starthistle is edible to most livestock besides horses; however, once the plant develops spikes around its flower, most livestock are deterred from grazing in those areas or are injured by those spikes.



Cesar Garcia, inaturalist.org

## Agriculture and Food Security

Farmers and ranchers face increased costs associated with managing this weed. It can reduce the available forage for domestic livestock and cause injury. It can infest grain fields and other agricultural areas, where seeds can contaminate grain harvest and lower crop quality and value. Yellow starthistle can also drain groundwater, reducing soil quality for future crops.

## Ecosystem Health

Once established, Yellow starthistle displaces native plants via dense monocultures and allelopathy, resulting in loss of biodiversity as native plants struggle to compete. This can significantly reduce forage availability for wildlife, further decreasing diversity and wildlife habitat. This weed also depletes the soil of its nutrients and alters water cycles. [3,6]

## Health & Safety

Yellow starthistle can physically injure children, workers, livestock, and wildlife, causing puncture wounds or infections. The obstruction of firebreaks and pathways by large weed infestations can exacerbate fire risks in dry regions, threatening property and personal safety. Horses are particularly vulnerable to developing chewing disease and mouth ulcers after consuming this plant..

While preventative measures are best, yellow starthistle is easiest to manage early in its lifecycle, varying depending on the method used. Herbicides work best before seeds have germinated, and hand-plucking is suggested before the stem has grown, due to the deep roots. Mowing and grazing stop seed spread and are most effective before flowering or spike growth; however, they do not kill plants completely. Burning can be effective in highly contaminated areas if done consecutively for several years, but due to the longevity of seeds, it is not guaranteed to eradicate all plants. reserves.

### DO's

- Encourage the growth of native plants. Yellow starthistle cannot tolerate shade, and is less likely to germinate in dense, undisturbed areas.
- Mow, cut, or pluck plants before flowering has occurred. This prevents new plant growth and limits reproductive success.
- Combine several management methods, including mechanical, herbicides, and seeding of desired plants.

### DON'Ts

- Avoid disturbing the soil unnecessarily, as tilling and digging give yellow starthistle the opportunity to grow and spread.
- Allow livestock to overgraze. Disturbed soils are ideal for weed growth and leave less space for native and desired plants.
- Wait until it is a widespread issue. Yellow starthistle is most manageable in individual, small infestations.



For more information on managing yellow starthistle, please visit [www.nmweeds.org](http://www.nmweeds.org)

