

# YELLOW STARThISTLE

## *Centaurea solstitialis* L.

**Family:** Asteraceae (Sunflower).

**Other Scientific Names:** None.

**Other Common Names:** St. Barnaby's thistle.

**Legal Status:** Provincial Noxious.

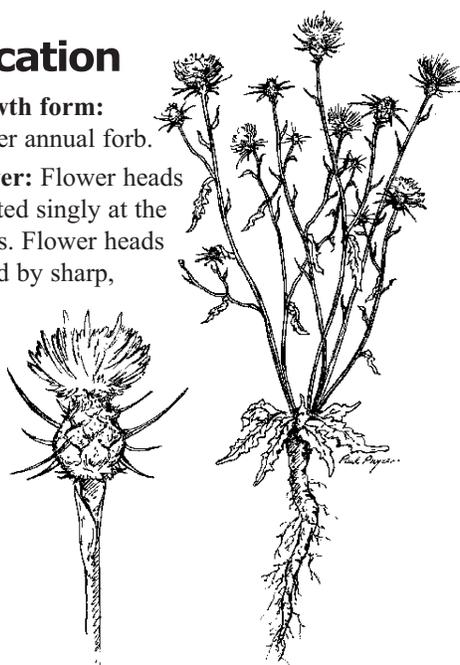


### Identification

**Growth form:**  
Winter annual forb.

**Flower:** Flower heads are yellow, located singly at the ends of branches. Flower heads are distinguished by sharp, straw-coloured thorns, which are up to 2 cm long.

**Seeds/Fruit:** Yellow starthistle has 2 types of seeds: plumed and plumeless.

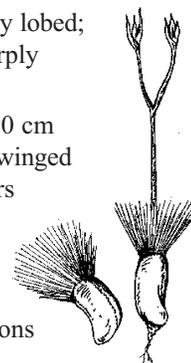


**Leaves:** Basal leaves are deeply lobed; upper leaves are entire and sharply pointed.

**Stems:** Mature plants are 60–90 cm tall and have rigid, branching, winged stems covered with cottony hairs (Whitson et al. 1996).

**Roots:** Taproot.

**Seedling:** Seedlings have oblong, tongue-shaped cotyledons (Herzog and Randall 1998).



### Similar Species

**Exotics:** None in BC.

**Natives:** None known.

### Impacts

**Agricultural:** In horses yellow starthistle causes a neurological disorder called “chewing disease” (Maddox et al. 1985).

**Ecological:** A pioneering plant that becomes established on disturbed land. In the US, it forms dense

infestations, reducing the available forage for livestock and wildlife. It may have allelopathic effects on some associated native species (Maddox et al. 1985).

**Human:** No information available.

### Habitat and Ecology

**General requirements:** Yellow starthistle invades rangelands, pastures, roadsides, cropland, and disturbed habitats. It is intolerant of shade and requires light for rosette and taproot development (FEIS 1996). It can establish on deep, well-drained soils as well as on shallow, rocky soils that receive 25–100 cm of annual precipitation.

**Distribution:** Yellow starthistle is not known to occur in the province but is well established in the US Pacific Northwest, where it appears to be spreading. It occupies mid- to high-elevation sites and appears best adapted to

dry habitats formerly dominated by big sagebrush (*Artemisia tridentata*), bluebunch wheatgrass (*Elymus spicatus*), Idaho fescue (*Festuca idahoensis*), and Sandberg bluegrass (*Poa secunda*) (Sheley et al. 1999).

**Historical:** Introduced from Europe.

**Life cycle:** Seedlings usually emerge in the autumn, form rosettes, and begin growing a taproot. Root growth continues throughout the winter. Yellow starthistle bolts in late spring and flowers from June through August, depending on elevation and latitude.

**Mode of reproduction:** By seed.

**Seed production:** Plants usually produce 700–1,000 seeds/plant, but vigorous plants may produce up to 170,000 seeds/plant (Herzog and Randall 1998; FEIS 1996).

**Seed bank:** Seeds may remain viable for several years (Herzog and Randall 1998).

**Dispersal:** Plumed and plumeless seeds are dispersed at different times. Plumed seeds are dispersed by wind shortly after maturity. Plumeless seeds remain in the seed head until it disintegrates in the autumn or winter.

**Hybridization:** No information available.

## Management

**Biocontrol:** None available in the province. The most commonly used biological control agent in the US is *Bangasternus orientalis*, a seed head weevil. Larvae feed on the seeds and can destroy up to 60% of the seeds in a head (Rees et al. 1996).

**Mechanical:** Hand-pulling can be used to remove small infestations of yellow starthistle. Mowing can be used to control larger infestations. Mowing alone is ineffective as a management method but can be helpful in stressing yellow starthistle plants that grow above desirable seeded species during re-vegetation (Sheley et al. 1999).

**Fire:** Hastings and DiTomasso (1996) reported that yellow starthistle was controlled with prescribed burning in California grasslands. Burning should be conducted during the early flowering stage before seed-set.

**Herbicides:** Herbicides are most effective when applied from the seedling to bolt stages. Picloram, dicamba, and 2,4-D are the most commonly used herbicides for this weed. Consult the most recent

edition of BC Ministry of Agriculture, Food and Fisheries Crop Production Guides for specific recommendations. **Before applying herbicides, read the label for full use and precautionary instructions.**

**Cultural/Preventive:** Grazing management should aim to promote plant communities with perennial grasses and forbs that provide good ground cover.

### Integrated Management Summary

Integrate herbicide applications with seeding of competitive grasses where applicable. Cattle and sheep will graze yellow starthistle before it has spines, but the plant may need to be grazed several times in a growing season for successful management. As this weed is not currently in the province, all efforts must be directed toward maintaining a competitive perennial cover and to preventing plants found from going to seed.

## References

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- Maddox, D. M., A. Mayfield, and N. H. Poritz. 1985. Distribution of yellow starthistle (*Centaurea solstitialis*) and Russian knapweed (*Centaurea repens*). *Weed Science* 33: 315–327.

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