

SPECIES FACT SHEET

Brassicaceae (Mustard family)

Whitetop*Cardaria draba***At a Glance**

- Perennial forb
- Grayish, stout, solitary, erect or trailing stems up to 19 inches (48.3 cm) tall
- Leafy below and branching above, with a generally soft, hairy appearance
- Blooming in May or June, the inflorescence appears flat-topped and covered with dense, white flowers
- Fruit is shaped like an inverted heart
- Exotic

Habitat and Ecology

Whitetop is found throughout the U.S. (Figure 1), but it poses the most problems in the west (Lyons 1998). Native to central Europe and western Asia, whitetop was first observed in the U.S. near the beginning of the 20th century. It was reported in California in 1876, observed in New York in 1898 (introduced from ship ballast), and introduced in the southwest in 1910 via imported alfalfa seed (Bossard and Chipping no date). The plant is usually found in open, unshaded areas on disturbed soils, including roadsides, fields, feed lots, watercourses, and along irrigation ditches (Lyons 1998). Whitetop and its relatives can grow in a

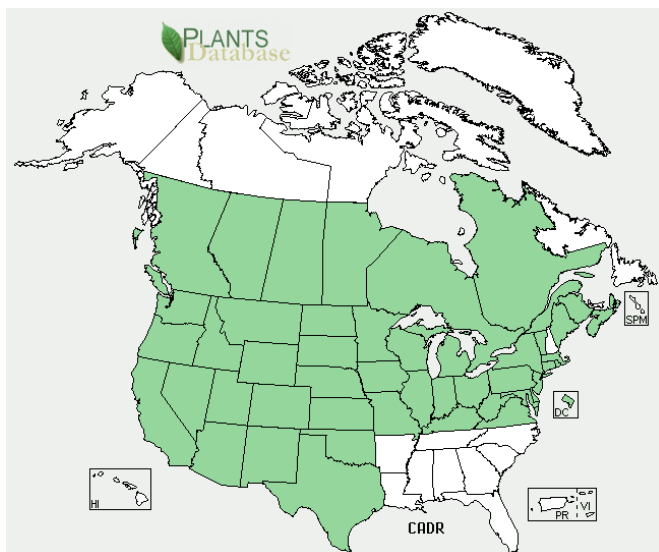


Figure 1. Distribution map courtesy of USDA Plants Database <http://plants.usda.gov/index.html>.

EXOTIC

PHOTO: JOSEPH DITOMASO, BUGWOOD

Whitetop (*Cardaria draba*)

variety of soil types including heavy clay, or light sandy or gravelly loams; whitetop favors non-acidic soils. It does best during moist years or under irrigation.

Description

A member of the mustard family, whitetop is a hardy perennial with stout, solitary, erect or trailing stems that can grow up to 8 to 19 inches (20.3-48.3 cm) tall (Lyons 1998). Stems are grayish and leafy in the bottom portion and branching up top. The plant generally has a gray-green, soft hairy appearance, being densely hairy below. The inflorescence appears flat-topped and covered with dense, small white flowers. The species reproduces by seed and increases its coverage by creeping roots. It can develop into monospecific stands.



PHOTO: STEVE DEWEY, BUGWOOD

Whitetop features

Leaves

Leaves are 1.5-3 inches (3.8-7.6 cm) long and broadly ovate to obovate (Lyons 1998). They are blue-green in color and the edges are entire or, sometimes, toothed. Lower leaves of the plant are long and slender and taper to a short petiole (leaf stem). The leaf surface may contain few to dense hairs. Upper leaves are comparatively shorter and broader, and they clasp the stem. The lower leaves dry up and fall off as the seeds mature.

Flowers, Fruit, and Seeds

Inflorescences of this species have a flat-topped appearance and consist of numerous small white flowers about 0.08 inches (2 mm) wide (Lyons 1998). The flower stalks diverge somewhat from the stem. Each flower has four white petals with long narrow bases and four sepals with white margins. Whitetop blooms in late May or June in the U.S.

The fruit of whitetop is shaped like an inverted heart and is 0.12-0.16 inches (3-4 mm) long (Lyons 1998). The hairy fruit has two chambers that typically contain one or two seeds. It has a persistent style on the upper end. The fruit “deflates” as it dries, and the veins become obvious. The seeds, which are 0.08-0.12 inches (2-3 mm) long and 0.04-0.06 inches (1-1.5 mm) wide, are rounded at one end and taper to a blunt point at the other end. They are dark red-brown in color. The plant is a prolific seed producer, producing 1,000-5,000 seeds per stem (Bossard and Chip-ping no date).



Heart-shaped fruit

PHOTO: T.F. NIEHAUS, SMITHSONIAN INST.

Regeneration from Roots

Whitetop can spread rapidly and regenerate from its thick roots. Resprouting can occur from intact roots or those damaged by control efforts. For example, root segments that are only 0.5 inch (1.3 cm) in length can produce new plants if the root remains near the soil surface (i.e., within 2.7 to 4 inches [6.8-10.2 cm]) (Scurfield 1962, as cited in Lyons 1998).

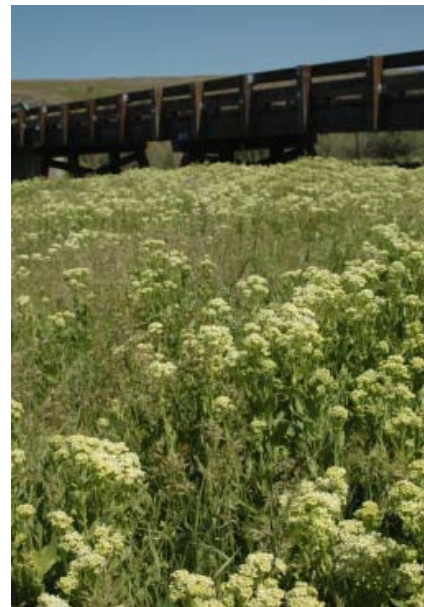


PHOTO: CHRIS EVANS, BUGWOOD

Whitetop invasion.

Similar Species

Cardaria species can be confused with *Lepidium* species, but they can be distinguished from one another by both leaves and fruit (Lyons 1998). The upper leaves on *Lepidium* plants clasp the stem to form a complete ring of tissue, as opposed to *Cardaria* plants which do not. *Lepidium* fruit is flattened, keeled (ridged), or winged, while the fruit of *Cardaria* is rounded or inflated. Lastly, *Lepidium* fruit is dehiscent (opens and releases seeds) while *Cardaria* fruit is indehiscent (does not open and shed seeds).

Whitetop is also easily confused with two other *Cardaria* species (*C. chalepensis* and *C. pubescens*), where they occur (Lyons 1998). The three species can be distinguished from one another by their hairiness and fruit-shape characteristics. *C. draba* has heart-shaped fruit, while *C. pubescens* has globe-shaped fruit and *C. chalepensis* has oval or lens-shaped fruit. Also, *C. pubescens* has hairy fruit and sepals.

Etymology

The name “cardaria” is derived from “kardia”, the Greek word for heart, and refers to the heart-shaped fruit of the plant. As noted, other plants in the genus do not have fruit resembling a heart.