

cicer milkvetch

Astragalus cicer L.

Synonyms: n/a

Other common name: chickpea milkvetch

Family: Fabaceae

Invasiveness Rank: **NR** The invasiveness rank is calculated based on a species' ecological impacts, biological attributes, distribution, and response to control measures. The ranks are scaled from 0 to 100, with 0 representing a plant that poses no threat to native ecosystems and 100 representing a plant that poses a major threat to native ecosystems.

Description

Cicer milkvetch is a long-lived, perennial, non-bloat legume with vigorous creeping roots or rhizomes. Stems are large and hollow, upright when young and becoming decumbent (near-ground level growth) and trailing. Where established outside of Alaska - stems of cicer milkvetch can reach to 3 m in length in one season. Young plants may reach heights of almost 1 m, but older plants become more trailing in nature. Leaves are 25-50 cm long with 10 to 13 pairs of leaflets, plus one terminal leaflet. Leaflets are 1.9 cm to 6.3 cm in long. Flowers are pale yellow to white with 15 to 60 flowers growing in a compact flower cluster (raceme), flowers at the base of the stem develop first. Pods are bladder-shaped to globe-like, inflated, and have many short stiff black hairs giving the pod dark brown/black appearance. Seeds detach within the pods and rattle. Pods do not shatter easily and may retain seeds through winter. Seeds are bright yellow or pale green and have a very hard seed coat which requires chemical or mechanical scarification for adequate germination. Cicer milkvetch is a prolific seed producer where it can produce up to 300 seeds/plant and in cultivation there are 130,000 seeds per pound and 65 pounds per bushel (Welsh et al 2003, Tilley et al. 2008). Cicer milkvetch is found growing along forest, meadow, streamside edges and dry roadside habitats.

Similar species: *Astragalus cicer* can be confused with native *Astragalus* and *Oxytropis* species including the critically imperiled *Astragalus agrestis*, which is typically less than 25 cm tall and has purple flowers. Native yellow flowered *Astragalus* species are <60 cm tall, have elliptic pods, inflorescences (even in fruit) are longer than wide, and the stipules don't form a sheath on the lowest nodes. *Oxytropis* species can be differentiated by their 'beak' or blunt tip on the keel petals.

Distribution and Abundance

General information about distribution/range: Cicer milkvetch is found in moist grassy habitat, usually along streams or ditches and in open woodlands. It has escaped cultivation and is naturalized in many parts of the western U.S. and can be found in pinyon-juniper, sagebrush, mountain shrub and aspen communities (Welsh et al



Cicer milkvetch (*Astragalus cicer* L.)

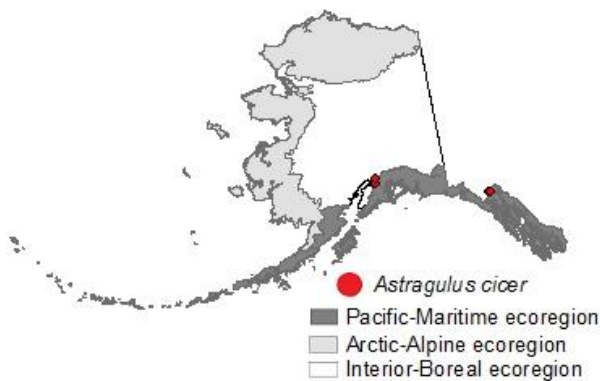
2003).

Native and current distribution: Cicer milkvetch is native to mainland Europe and eastern Russia, and southwest Asia. It is an introduced species in 14 of the lower 48 states (mainly in the Midwest) and is present in these Canadian provinces and territories: British Columbia, Yukon, Alberta, Manitoba, Ontario and Quebec (USDA,

NRCS 2018).

Cicer milkvetch has been documented from the Pacific Maritime region of Alaska, specifically one population is known to occur on the highway embankment near Eagle River (CPNWH 2016, AKEPIC 2018). Cicer milkvetch has also been documented along the Haines Highway in the Pacific Maritime region (Hultén 1968, AKEPIC 2018).

AKEPIC database link and information regarding Alaska's non-native plant species is available online: <http://accs.uaa.alaska.edu/invasive-species/non-native-plants>



Distribution of Cicer milkvetch (*Astragalus cicer* L.) in Alaska.

Legal Listings

- Has not been declared noxious in AK, Canada or other states.
- Listed noxious in Alaska
- Listed noxious by other states
- Federal noxious weed
- Listed noxious in Canada or other countries

Ecological Impact

Impact on community composition, structure, and interactions: Rhizomes of cicer milkvetch grow continuously, providing more vigorous growth as the plant ages. Forage crop studies in Delta Junction showed that cicer milkvetch growth was not vigorous enough to produce significant amounts of forage (Sparrow and Masiak 2004). This plant is only known to occur on roadsides and agricultural areas of Alaska. Non-native grasses are known to outcompete cicer milkvetch (Sparrow and Masiak 2004, Tilley et al. 2008). Impact of the introduction of cicer milkvetch to native plant communities is unknown.

Impact on ecosystem processes: Cicer milkvetch is not known to affect patterns of secondary succession following wildfires (Tilley et al. 2008).

Biology and Invasive Potential

Reproductive potential: Cicer milkvetch is a prolific seed producer and has vigorous growth from creeping roots or rhizomes once established (Welsh et al. 2003). Alaska's Interior and Arctic ecogeographic regions have climatic limiting factors that thus far would prohibit successful growth of this species. However, with Alaska's changing climate, non-native species could have greater opportunity for establishment within more favorable ecological niches such as warm areas near roadsides or along floodplains (Carlson et al 2016).

Role of disturbance in establishment: Cicer milkvetch does well on poor, disturbed soils and is drought resistant. Disturbance is an important factor in establishment of cicer milkvetch in Alaska.

Potential for long-distance dispersal: Cicer milkvetch seeds are eaten by small birds, deer, rabbit, sage grouse and pheasants (Stevens and Monsen, 2004).

Potential to be spread by human activity: Cicer milkvetch is used as a hay or pasture crop in the western U.S. and seed is widely available for purchase. Intentional planting of this species could exacerbate introduction into natural areas of Alaska, it is considered naturalized in many localities of the U.S. but is not considered weedy or invasive (Tilley et al. 2008).

Germination requirement: Cicer milkvetch seeds require mechanical or chemical scarification which facilitates air and water penetration and allows germination (Townsend and McGinnies 1972). Bumble bees are the primary pollinator at lower latitudes and significantly increase seed production (Richards 1986).

Growth requirements:

Cicer milkvetch can fix nitrogen from the air and has a high tolerance for drought; growth rates increase with rising summer temperatures. These characteristics allow cicer milkvetch to grow in a vast amount of soil types, but best growth comes from plants grown on moderately coarse textured soils. Cicer milkvetch requires 30-50 frost-free days and in areas where it is grown as a forage crop, moderate annual precipitation of 35-88 cm is recommended (Tilley et al. 2008). Cicer milkvetch is known to grow well on wet sites or sub-irrigated sites where the ground water is within 3 feet of the surface.

Congeneric weeds: None known.

Management

Cicer milkvetch is known to compete poorly with weeds during the first year of establishment. Herbicide

treatments with 2,4-D alone or mixed with diclofop reduce seedling growth when applied in early seedling stages (Townsend and Schweizer 1984).

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