yellow sweetclover
Melilotus officinalis (L.) Lam.

Synonyms: *Brachylobus officinalis* (Linnaeus) Dulac, *Melilotus arvensis* Wallr., *M. graveolens* Bunge, *M. leucanthus* W.D.J. Koch ex DC., *M. lutea* Gueldenst., *M. officinalis* (L.) Lam. var. *micranthus* O.E. Schulz, *M. officinalis* f. *suaveolens* (Ledebour) H. Ohashi & Tateishi, *M. suaveolens* Ledebour, *Trifolium officinale* Linnaeus, Sp. Pl. 2: 765. 1753 [*T. "Melilotus officinalis"*]
Other common names: yellow sweet clover, king's-crown, plaster clover, Hart's clover, king's clover, and yellow millet
Family: Fabaceae

Invasiveness Rank: **69** 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
Yellow sweetclover is an annual, winter annual, biennial, or perennial legume that grows from 61 to 183 cm tall. Leaves are trifoliate. Leaflets are oblong to elliptic and narrow at both ends. Flowers are yellow, 5 to 6 mm long, and arranged in many-flowered terminal and axillary racemes. Pods are ovate, compressed, and yellowish-brown. Each pod contains 1 or 2 seeds (Hultén 1968).

Melilotus officinalis (L.) Lam.

Similar species: Yellow sweetclover is distinct in Alaska as the only erect, trifoliate, yellow-flowered legume that has straight fruits. Yellow alfalfa (*Medicago sativa* ssp. *falcata*) is an introduced, decumbent, yellow-flowered legume that also grows in Alaska. Yellow alfalfa can be distinguished from yellow sweetclover by its curled fruits and compact inflorescences.

Ecological Impact
Impact on community composition, structure, and interactions: Yellow sweetclover can shade out shorter species. It is moderately toxic to animals (Whitson et al. 2000) and is allelopathic (USDA 2002).
Impact on ecosystem process: Yellow sweetclover alters soil conditions by fixing nitrogen. Thick stands of yellow sweetclover can be difficult to burn because of their low fuel content. Infestations reduce the occurrence of fires, degrading natural grassland communities that depend on frequent fires.

Biology and Invasive Potential
Reproductive potential: Each plant is capable of producing over 100,000 seeds. Seeds can remain viable in the soil for many years. Plants have high cross fertility and very little incidence of self fertility.
Role of disturbance in establishment: Yellow sweetclover readily invades open areas. Natural and human-caused fires produce excellent growing conditions because they scarify seeds and stimulate germination. Yellow sweetclover does not have the ability to resprout after being cut or grazed.
Potential for long-distance dispersal: Rainwater runoff and stream flow are the most important means of seed dispersal.
Potential to be spread by human activity: Yellow sweetclover is planted as a forage crop, soil builder, and nectar source for honeybees. Seeds can be transported on vehicle tires. This species has been documented as a contaminant in cereal grains.
Germination requirements: Seeds do not require cold-stratification to germinate. Most seeds germinate in the

spring with sufficient moisture. Some seeds continue to germinate through summer.

Growth requirements: Yellow sweetclover grows in fine- to medium-textured soils that have pH levels between 5 and 8. This species is tolerant of fire, drought, high calcium carbonate ($CaCO_3$) contents, and moderate salinity, but it cannot tolerate shade. It can withstand temperatures as low as -39°C. This species requires 110 frost-free days to grow and reproduce successfully (USDA 2002).

Congeneric weeds: White sweetclover (*Melilotus alba*) is an invasive species in Alaska with an invasiveness rank of 81 (AKEPIC 2010). Several *Melilotus* species are known to occur as non-native weeds in North America (USDA 2002).

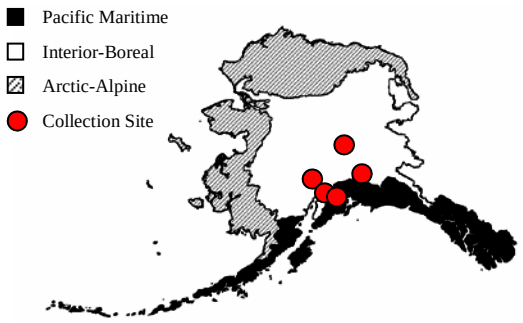
Legal Listings

- ☐ Has not been declared noxious
- ☐ Listed noxious in Alaska
- ☐ Listed noxious by other states
- ☐ Federal noxious weed
- ☒ Listed noxious in Canada or other countries (QC)

Distribution and Abundance

Yellow sweetclover was brought to North America in the late 1600's as an agricultural crop for pastures and honey production (Royer and Dickinson 1999). It is now common in roadsides, waste places, neglected fields, and pastures. This species also grows in open, natural communities, such as prairies.

Native and current distribution: Yellow sweetclover is native to Eurasia. It is now widespread throughout the U.S. and Canada. This species has been documented from the Pacific-Maritime and Interior-Boreal ecogeographic regions of Alaska (AKEPIC 2010).



Distribution of yellow sweetclover in Alaska

Management

Yellow sweetclover can be managed using mechanical control methods. It does not require the use of chemical control methods. Biological control options have not been investigated because the plant is valued as an agricultural crop. Because seeds remain viable for a long time, sites should be monitored for several years following control actions to track the success of the management procedures.

References:

AKEPIC database. Alaska Exotic Plant Information Clearinghouse Database. 2010. Available: http://akweeds.uaa.alaska.edu/

eFloras. 2008. Published on the Internet http://www.efloras.org [accessed 19 October 2010]. Missouri Botanical Garden, St. Louis, MO & Harvard University Herbaria, Cambridge, MA.

Hultén, E. 1968. Flora of Alaska and Neighboring Territories. Stanford University Press, Stanford, CA. 1008 pp.

Invaders Database System. 2010. University of Montana. Missoula, MT. http://invader.dbs.umt.edu/

ITIS. 2010. Integrated Taxonomic Information System. http://www.itis.gov/

Royer, F. and R. Dickinson. 1999. Weeds of the Northern U.S. and Canada. The University of Alberta press. 434 pp.

USDA (United States Department of Agriculture), NRCS (Natural Resource Conservation Service). 2002. The PLANTS Database, Version 3.5 (http://plants.usda.gov). National Plant Data Center, Baton Rouge, LA 70874-4490 USA.

Whitson, T. D., L. C. Burrill, S. A. Dewey, D. W. Cudney, B. E. Nelson, R. D. Lee, R. Parker. 2000. Weeds of the West. The Western Society of Weed Science in cooperation with the Western United States Land Grant Universities, Cooperative Extension Services. University of Wyoming. Laramie, Wyoming. 630 pp.