Yellow sweetclover

Melilotus officinalis (L.) Lam.

Synonyms: *"Trifolium M. officinalis"* L.; *Melilotus arvensis* Wallr.; *M. albus* Medik.
Other common names: yellow sweet clover, king's-crown, plaster clover, Hart's clover, king's clover, and yellow millet
Family: Fabaceae (Leguminosae)

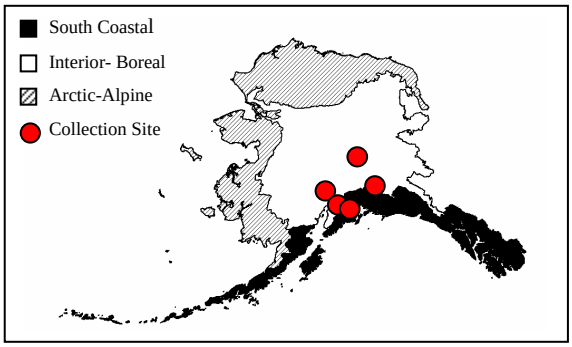
Description
White sweetclover and yellow sweetclover have very similar biologies and ecologies. *Melilotus officinalis* is an annual, winter annual, biennial or perennial legume normally growing 2 to 6 feet tall. Leaflets are oblong-elliptic, narrowed at both ends. Flowers are yellow, 5-6 mm long in many-flowered terminal and axillary racems. Pods are ovate, compressed, yellowish-brown, and 1- or 2-seeded (Hultén 1968).

Yellow sweetclover is quite distinct in Alaska as the only erect, trifoliate yellow legume with straight fruits. Yellow alfalfa (*Medicago sativa* ssp. *falcata)* is an additional introduced decumbent yellow-flowered legume of interior Alaska. Yellow alfalfa is distinct in having curled fruits and compact inflorescences.

Ecological Impact
Impact on community composition, structure, and interactions: Yellow sweetclover has the ability to shade out species of smaller stature. It is moderately toxic to animals (Whitson et al. 2000) and has an allelopathy potential (USDA 2002).
Impact on ecosystem process: Yellow sweetclover alters edaphic conditions due to nitrogen fixation. Also, thick stands of this species may be difficult to burn due to their low fuel content, causing degradation of natural grassland communities dependent on frequent fires.

Biology and Invasive Potential
Reproductive potential: Each plant is capable of producing over 100, 000 seeds. Seeds may remain viable in the soil for years. Plants have high cross fertility and very little incidence of self fertility.
Role of disturbance in establishment: Yellow sweetclover readily invades open areas. Burning produces excellent growing conditions by scarifying seeds and stimulating germination. No ability to resprout when cut or grazed has been documented.
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: This species is used as a forage crop, soil builder, and nectar source for honeybees like white sweetclover. Similarly, it may contaminate cereal grains and can spread from vehicle tires.
Germination requirements: Germination occurs in sufficient moisture in spring, although some seeds continue to germinate through summer.
Growth requirements: Yellow sweetclover is adapted to fine to medium textured soils at pH 5-8. It is CACO3 tolerant, moderately saline tolerant, but do not tolerate shade. It does not require cold-stratification for germination. This species is highly drought and fire tolerant. It withstands temperatures to -38°F, and requires 110 frost-free days (USDA 2002). This species has relatively porous summer vegetation, and no coppice potential.
Listing: Melilotus officinalis is listed as an"Exotic Pest" in Tennessee and Wisconsin (USDA 2002).

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



Distribution of yellow sweetclover in Alaska

Native and current distribution: Yellow sweetclover is introduced from Eurasia. It is now widespread throughout the U.S. and Canada.

Management
Yellow sweetclover can be managed using mechanical controls, and should not require chemical use. Biological control options have not been investigated because the plant is valued as an agricultural crop. Monitoring is necessary to track the success of management procedures, especially considering the longevity of the seedbank.

References:

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