INVASIVE PLANTS OF OHIO

Fact Sheet 16 White & Yellow Sweet-clovers

Melilotus alba, M. officinalis

WHITE SWEET-CLOVER

DESCRIPTION:

White and yellow sweet-clovers are erect, biennial members of the pea family. In their first year, the plants are small with a smooth multi-branched stem with leaves divided into 3 finely-toothed leaflets. During the second year, the plant takes on a bushy appearance and develops a more extensive root system. White sweet-clover can attain a height of 2 to 7 feet, while yellow sweet-clover reaches 2 to 6 feet in height. Flowers are borne on irregular spikes at the end of elongated stems. The flowers are either white or yellow, the most obvious difference between these two species. Seeds are formed in small ovoid pods.

These clovers are native to the Mediterranean region, central Europe and Asia. They were brought to the United States by early settlers, probably sometime in the 1600s, for use as forage and honey production. They are widely used as pasture crops for nitrogen enrichment of the soil and are still highly valued as honey plants for pollinators. Both species occur throughout Ohio.

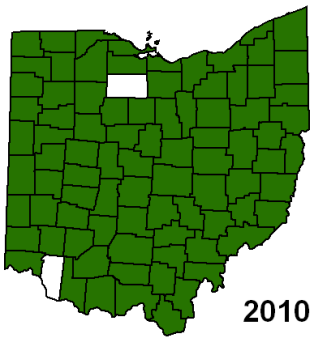
HABITAT:

White and yellow sweet-clover grow in open, disturbed areas such as roadsides, old fields and utility easements. They are found in grasslands, savannas, alvars, barrens, dunes, and meadows.

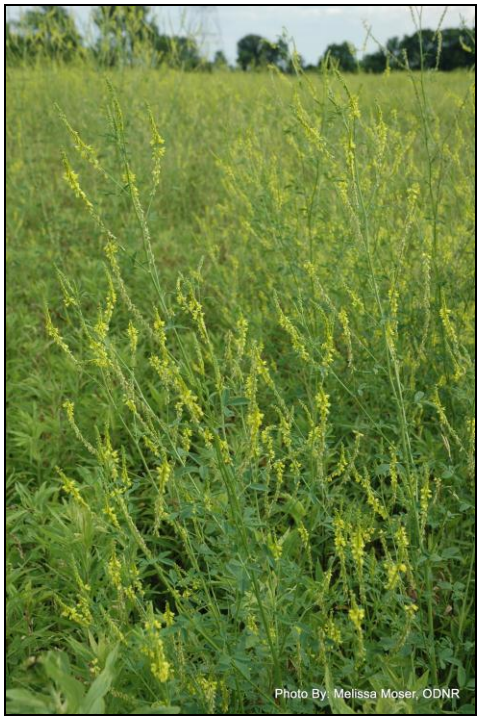
INVASIVE CHARACTERISTICS:

The species can produce up to 350,000 seeds per plant and the seeds are viable for more than 30 years. The plants are drought-resistant. During their second year, they tend to shade out native sun-loving species and out-compete native species for water and nutrients.

WHITE SWEET-CLOVER



YELLOW SWEET-CLOVER



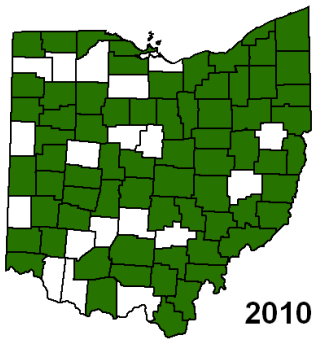
CONTROL:

Mechanical: In small areas, hand-pulling of first year plants when roots are small is effective. Fall weeding of first-year plants is recommended because the bright green sweet clover is easily spotted within the yellowing prairie. First-year plants cut or mowed may experience high rates of winter mortality. It is not recommended to hand pull second-year sweet clover because the stems are brittle and snap off easily. Prescribed burning for 2 or more consecutive years has been effective in reducing populations of white and yellow sweet-clover. However, burning for only one year tends to increase populations.

Chemical: Foliar application of systemic herbicides such as such as Roundup, Glypro, or AquaNeat can be very effective. Escort, Milestone, OpenSite, and Tordon have residual control and are very effective in extensive populations. As biennial species, sweet-clovers are best controlled in the first year before they flower. To be most effective, many herbicides require a penetrating or sticking agent such as Nu-Film-P. When sweet-clover occurs mixed with native grassland species, care must be taken to prevent over-spray to non-target plants. Repeated herbicide application is usually needed to exhaust the seed bank over time, particularly for well-established populations.

Biological: Little research has been conducted for biological control of sweet-clovers because of their importance to the agricultural industry. However, several species of insects and bacteria cause damage to sweet-clovers. The most destructive is the sweet-clover borer (*Sitona cylindricollis*). The larvae of this insect feeds on sweet-clover roots, while the adults feed on foliage. The bacterium *Rhizoctonia sp.* causes root rot in sweet-clovers, but it also infects soy beans, potatoes, sugar beets, ornamentals, and turf grasses.

YELLOW SWEET-CLOVER



Credits and additional information:

Plant Conservation Alliance-Alien Plant Working Group
Ohio Department of Natural Resources, www.ohiodnr.gov
The Nature Conservancy, Ohio Chapter
Illinois Nature Preserve Management Guidelines
OIPC website, www.oipc.info

Note: Maps of species' ranges are based on records as of 2010.