

*Melilotus alba* [简体中文](#) [正體中文](#)

**System:** Terrestrial

Kingdom	Phylum	Class	Order	Family
Plantae	Magnoliophyta	Magnoliopsida	Fabales	Fabaceae

**Common name** nostrzyk biały (Polish), white melilot (English), honey clover (English), meliloto-branco (Portuguese), hierba orejera (Spanish), donnik belyi (Russian), Weißer steinklee (German), mielga (Spanish), hubam clover (English), hubam (English), white sweetclover (English), melilot blanc (Catalan, France), Bokharaklee (German), heuin jeon dong ssa ri (Korean), bai hua cao mu xi (Chinese), hvit steinkløver (Norwegian), mielcón (Spanish), trébol de olor blanco (Spanish, Argentina, Mexico), trébol oloroso (Spanish), Vit sötväppling (Swedish), valkomesikkä (Finnish), melilot (English), white millet (English), tree clover (English), meliloto blanco (Spanish), honey-lotus (English), bokhara-clover (English, Australia, New Zealand), meliloto bianco (Italian), Shirobana shinagawa hagi (Japanese), Melilotos (Greek), Weisser honigklee (German), mélilot blanc (French), almengó blanc (Catalan, Spain), fehér somkóró (Hungarian), hvid stenkløver (Dutch)

**Synonym** *Melilotus albus*, Medik  
*Melilotus albus*, var. *annuus* H.S. Coe  
*Melilotus leucanthus*, W.D.J. Koch ex DC.  
*Melilotus officinalis*, subsp. *alba* (Medik.) H. Ohashi and Tateishi  
*Melilotus alba*, Desr.  
*Melilotus alba*, L.

**Similar species** *Melilotus officinales*

**Summary** Native to Asia, Europe, and northern Africa, *Melilotus alba* (commonly known as white sweet clover) was introduced to the United States and first recorded in 1739.



[view this species on IUCN Red List](#)

## Species Description

*Melilotus alba* is a biennial herb with pea-like flowers attached to small stalks of elongated stems (Cole, 1990). It is monocarpic, sweet scented, and has trifoliate leaves (Ekhardt, 1987). The leaves are alternate in arrangement and are 12.7-50.8mm (.5-2 in) (ANHP, 2006). The flowers are perfect spike-like racemes (Ekhardt, undated). The flowers are about 3-6.3mm (ANHP, 2006). The seed is ovoid, leathery, and wrinkled. *M. alba* is somewhat dehiscent. The plant is erect, branched and has a glabrous stem. *M. alba* is 1-3m high. The corolla is 4-5mm long and the fruit is 3-4mm and reticulate. This particular plant flowers in June-July. Flowering shoots can reach up to 1m (Ekhardt, undated). According to Frame (undated), the "seed pod has a reticulated, ridged coat which turns black with ripening and contains a single smooth kidney-shaped seed, about 2mm long, and brownish-yellow to brown."

## Lifecycle Stages

Nearly all energy in the early part of the growing season is put into top-growth. In late summer, however, the tops grow very little, while the roots grow dramatically. This is the "critical growth period" when plants allocate most energy to root growth. In the second year, the taproot may reach 120cm in depth. Along with this are 1-10 ascending flowering stems from 1-2.6m (Uchytíl 1992).

## Uses

Young leaves of *Melilotus alba* have been used for tea, cooked greens, salads, and flavouring. Flowers can be pan roasted in order to make granola (LEC, 2005). *M. alba* is eaten by livestock. It is also grown for pasture and hay. White sweetclover is considered a good plant for soil restoration (Uchytíl, 1992). Uchytíl (1992) states that "white sweet clover provides good cover for small mammals, waterfowl, quail, and ring-necked pheasant." *M. alba* is regarded as an important plant for honey production (Uchytíl, 1992).

## Habitat Description

*Melilotus alba* grows in full sun or partial shade, but cannot tolerate dense shade. It prefers calcareous, loamy soils (Cole, 1990) with a pH from 5-8 (ANHP, 2006). *M. alba* can be found on roadsides, abandoned fields, railways, pastures, open natural communities and prairies (Cole, 1990). This species grows poorly on acidic soils (Uchytíl, 1992).

## Reproduction

*Melilotus alba* has high self-fertility and cross fertility rates. It is pollinated by bees and wasps. Rainwater and runoff are the most important means of seed dispersal and the wind can carry the seeds several metres. Seed germination and seedling development occur during late March-April although sometimes it can last until fall (Ekhardt, 1987). *M. alba* requires at least 100 frost free days to reproduce (ANHP, 2006).

## General Impacts

Natural grasslands are degraded by *Melilotus alba* with the overtopping and shading of native species. Coumarin is produced by *M. alba* which is toxic to animals (ANHP, 2006). *M. alba* if not cured thoroughly can cause hemorrhaging in cattle. These hemorrhages are less common in horse and sheep. It is also known that white sweetclover causes bloating in livestock animals (Uchytíl, 1992).

## Management Info

**Physical:** Hand-pulling *Melilotus alba* is best done in the fall. In the spring the root crown must be removed when the ground is moist and before it begins to flower. Hand cutting stems just before flowering or on lower stems that dieback before flowering, usually does not resprout. Be sure to cut close to the ground (Cole, 1990). Prescribed burning is also used to control white sweetclover (Uchytíl, 1992). They must be burned in April of the first year which causes the seeds to germinate (Cole, 2006; DiTomaso *et al*, 2006). After the first burn seed germination is high (Uchytíl, 1992) and there is a high density of *M. alba* (Curtis and Partch, 1948). In May of the second year when the plants are 1-2m high (Uchytíl, 1992) they should be burned again which in turn kills emerging shoots before they seed. This procedure should be followed by two years of no burn (Cole, 1990).

**Chemical:** The herbicide 2, 4-D can be used to spot spray *M. alba*. Herbicides are usually used for extremely disturbed sites (Cole, 1990).

**Biological:** No biocontrol options have become available yet (Cole, 1990). Some considerations for biocontrol are the sweetclover weevil which damages the plant (Uchytíl, 1992).

## Pathway

*M. alba* is used for hay and pasture (Uchytíl, 1992)



# GLOBAL INVASIVE SPECIES DATABASE

FULL ACCOUNT FOR: *Melilotus alba*

**Principal source:** [Uchytíl, Ronald J. 1992. \*Melilotus alba\*. In: Fire Effects Information System, \[Online\]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory \[Producer\].](#)  
Cole, M. 1990. Vegetation Management Guideline: White and Yellow Sweet Clover. Illinois Department of Conservation. 1(23).

**Compiler:** National Biological Information Infrastructure (NBII) & IUCN/SSC Invasive Species Specialist Group (ISSG)

**Review:** Expert review underway: Jeffery Conn (Jeff) Research Agronomist, Fairbanks, Alaska USA

**Publication date:** 2007-08-03

## ALIEN RANGE

[2] AUSTRALIA

[9] CANADA

[1] NORTH AMERICA

[1] BRITISH ISLES

[1] MEXICO

[46] UNITED STATES

## BIBLIOGRAPHY

19 references found for *Melilotus alba*

### Management information

[Alaska Natural Heritage Program \(ANHP\). 2006. White sweetclover \*Melilotus alba\* Medikus.](#)

**Summary:** This website gives detailed information about ecological impact and invasive potential of *Melilotus alba*.

Available from: [http://akweeds.uaa.alaska.edu/pdfs/species\\_bios\\_pdfs/Species\\_bios\\_MEAL\\_ed.pdf](http://akweeds.uaa.alaska.edu/pdfs/species_bios_pdfs/Species_bios_MEAL_ed.pdf) [Accessed April 23, 2007]

[Cole, M. 1990. Vegetation Management Guideline: White and Yellow Sweet Clover. Illinois Department of Conservation. 1\(23\).](#)

**Summary:** This article discusses the ecology of white and yellow sweetclover and also discusses ways to manage these plants.

Available from: <http://www.inhs.uiuc.edu/chf/outreach/VMG/wysclover.html> [Accessed April 23, 2007]

[DiTomaso, J.M., M.L. Brooks. E.B. Allen. R. Minnich, P.M. Rice, G.B. Kyser. Control of Invasive Weeds with Prescribed Burning. \*Weed Technology\*. 20: 535-548.](#)

**Summary:** This describes how and when to burn different kinds of vegetation.

[Ekhardt, N. 1987. The Nature Conservancy Element Stewardship Abstract For \*Melilotus alba\*, \*Melilotus officinalis\*.](#)

**Summary:** This website gives full ecology information for *Melilotus alba*.

Available from: <http://tncweeds.ucdavis.edu/esadocs/documnts/meli0ff.pdf> [Accessed April 23, 2007]

[Frame, J. Undated. \*Melilotus albus\* Medik. \*syn. Melilotus alba\* Medik. Food and Agriculture Organization \(FAO\).](#)

**Summary:** This gives an overall description of the plant's ecology and management.

Available from: <http://www.fao.org/AG/AGp/agpc/doc/Gbase/DATA/Pf000488.htm> [Accessed April 23, 2007]

[National Park Service \(NPS\). Undated. White Sweetclover.](#)

**Summary:** Gives detailed information on description and management of white sweetclover.

[Northern Prairie Wildlife Research Center \(NPWRC\). 2006a. An assessment of Exotic Plant Species of Rocky Mountain Park.](#)

**Summary:** This website provides detailed information on *Melilotus alba* in Rocky Mountain National Park.

Available from: <http://www.npwrc.usgs.gov/resource/plants/explant/melialba.htm> [Accessed April 23, 2007]

[Northern Prairie Wildlife Research Center \(NPWRC\). 2006b. Species Abstracts of Highly Disruptive Exotic Plants at Pipestone National Monument.](#)

**Summary:** This website provides detailed information on *Melilotus alba* in Pipestone National Monument.

Available from: <http://www.npwrc.usgs.gov/resource/plants/explant/melialba.htm> [Accessed April 23, 2007]

[Uchytíl, Ronald J. 1992. \*Melilotus alba\*. In: Fire Effects Information System, \[Online\]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory \[Producer\].](#)

**Summary:** This report gives information about the ecology and fire ecology of *Melilotus alba*.

<http://www.fs.fed.us/database/feis/plants/forb/melialb/all.html>

### General information

[Brown, W.T., M.E. Krasny, N. Schoch. 2001. Volunteer Monitoring of Nonindigenous Invasive Plant Species in the Adirondack Park, New York, USA. \*Nat. Areas J.\* 21\(2\): 189-196.](#)

**Summary:** This article focuses on keeping track of invasive species in order to implement management strategies.



# GLOBAL INVASIVE SPECIES DATABASE

FULL ACCOUNT FOR: *Melilotus alba*

[CONABIO. 2008. Sistema de información sobre especies invasoras en México. Especies invasoras - Plantas. Comisión Nacional para el Conocimiento y Uso de la Biodiversidad. Fecha de acceso.](#)

**Summary:** English:

The species list sheet for the Mexican information system on invasive species currently provides information related to Scientific names, family, group and common names, as well as habitat, status of invasion in Mexico, pathways of introduction and links to other specialised websites. Some of the higher risk species already have a direct link to the alert page. It is important to notice that these lists are constantly being updated, please refer to the main page (<http://www.conabio.gob.mx/invasoras/index.php/Portada>), under the section Novedades for information on updates.

Invasive species - Plants is available from: [http://www.conabio.gob.mx/invasoras/index.php/Especies\\_invasoras\\_-\\_Plantas](http://www.conabio.gob.mx/invasoras/index.php/Especies_invasoras_-_Plantas) [Accessed 30 July 2008]

Spanish:

La lista de especies del Sistema de información sobre especies invasoras de México cuenta actualmente con información acerca de nombre científico, familia, grupo y nombre común, así como como hábitat, estado de la invasión en México, rutas de introducción y ligas a otros sitios especializados. Algunas de las especies de mayor riesgo ya tienen una liga directa a la página de alertas. Es importante resaltar que estas listas se encuentran en constante proceso de actualización, por favor consulte la portada (<http://www.conabio.gob.mx/invasoras/index.php/Portada>), en la sección novedades, para conocer los cambios.

Especies invasoras - Plantas is available from: [http://www.conabio.gob.mx/invasoras/index.php/Especies\\_invasoras\\_-\\_Plantas](http://www.conabio.gob.mx/invasoras/index.php/Especies_invasoras_-_Plantas) [Accessed 30 July 2008]

Curtis, J.T., M.L. Partch. 1948. Effect of Fire on the Competition Between Blue Grass and Certain Prairie Plants. *American Midland Naturalist*. 39(2): 437-443.

**Summary:** Addresses the effect of fire on competing blue grass and other prairie plants.

[Evans, P.M. Undated. \*Melilotus alba\*: the preferred forage legume for autumn and spring-summer production on saline soils in SW Victoria. The Australian Society of Agronomy.](#)

**Summary:** This paper evaluates production and persistence of *Melilotus alba* in saline soils.

Available from: <http://www.regional.org.au/au/asa/2001/3/b/evans.htm> [Accessed April 23, 2007]

[Global Biodiversity Information Facility \(GBIF\), 2010. Species: \*Melilotus alba\*.](#)

**Summary:** Available from: <http://data.gbif.org/species/13643476/> [Accessed 15 June 2010]

[ITIS \(Integrated Taxonomic Information System\), 2007. Online Database. \*Melilotus alba\*.](#)

**Summary:** An online database that provides taxonomic information, common names, synonyms and geographical jurisdiction of a species. In addition links are provided to retrieve biological records and collection information from the Global Biodiversity Information Facility (GBIF) Data Portal and bioscience articles from BioOne journals.

Available from: [http://www.itis.gov/servlet/SingleRpt/SingleRpt?search\\_topic=TSN&search\\_value=26149](http://www.itis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&search_value=26149) [Accessed April 23, 2007]

Laurentian Environmental Center (LEC). 2005. Clover sweet white (*Melilotus alba*).

**Summary:** This website gives uses for *Melilotus alba*.

[Multilingual Multiscript Plant Name Database. 2004. \[Online database\] \*Melilotus alba\*.](#)

**Summary:** This website gives common names from different languages for plant species.

Available from: <http://www.plantnames.unimelb.edu.au/Sorting/Melilotus.html#albus> [Accessed April 23, 2007]

[USDA, ARS, 2008. \*Melilotus albus\* Medik. National Genetic Resources Program. Germplasm Resources Information Network - \(GRIN\) \[Online Database\]. National Germplasm Resources Laboratory, Beltsville, Maryland.](#)

**Summary:** This website gives common names and distribution for species.

Available from: <http://www.ars-grin.gov/cgi-bin/npgs/html/taxon.pl?23989> [Accessed April 23, 2007]

[USDA, NRCS, 2008. \*Melilotus officinalis\* \(L.\) Lam. yellow sweetclover. The PLANTS Database. National Plant Data Center, Baton Rouge, LA 70874-4490 USA.](#)

**Summary:** Available from: <http://plants.usda.gov/java/profile?symbol=MEOF> [Accessed 20 May 2008]