



# White Sweet Clover



## *Plants found in hay and grain*

### Description

Melilotus alba: White sweet clover is an erect, slender, branched biennial herb from 3 to 9 feet tall. The clover-like leaves are made up of three oblong leaflets that are ½ to 1 inch long. The small, fragrant white flowers appear in numerous slender clusters that arise from the axils of the leaves. The fruits are ovoid, smooth pods that contain 1 to 4 seeds.

### Occurrence

A native of Eurasia, white sweet clover was introduced into North America, where it has escaped cultivation to become established along roadsides, in railroad trackways, and in waste places. It occurs throughout the United States and much of Canada. The yellow sweet clover (*elilotus officinalis* (L.) Lam.) is similar to white sweet clover, except that the flowers are yellow. It grows from Quebec to British Columbia, and south beyond the borders of the United States.

### Conditions of Poisoning

Sweet clover, a valuable forage crop, may be used freely as pasture, but the feeding of damaged or spoiled sweet-clover hay or silage may cause the death of cattle. The damaged hay is usually moldy, but not all moldy hay is poisonous. Sweet-clover poisoning usually occurs in winter and does not become apparent until the animal has been fed damaged sweet clover for 2 weeks or more. Cattle are the most frequently poisoned of all animals.

### Control

Moldy sweet-clover hay or silage should be fed with other kinds of hay, alternating the sweet clover and the other hay at 2-week intervals.

### Toxic Principles

The poisonous principle coumarin has been isolated and crystallized from damaged sweet clover. This crystalline substance can be used to reproduce the disease in susceptible rabbits. The exact action of the toxic substance is unknown, but its prominent effect is interference with the clotting of the blood as a result of a depression of the prothrombin level and certain other conditions essential for coagulation of blood.

### Clinical Signs

The poisoned animal may be dull and stiff and reluctant to move. Marked swellings may occur on any part of the body, but are most common in the hip, shoulder, neck, and chest regions. The swellings are doughy and contain blood. When hemorrhages are extensive, the mucous membranes are pale, the pulse and respiration are rapid, and the animal becomes very weak. Animals may bleed to death even from such minor operations as dehorning or castration. Examination of the blood reveals a loss of red blood cells, a decrease in hemoglobin, and delayed clotting time. Death may occur suddenly or after several days.



### **Necropsy**

Extensive localized hemorrhage or diffuse hemorrhage in many tissues are constant findings in sweet-clover poisoning.

### **Treatment**

Treatment consists of blood transfusions or the intravenous injection of defibrinated or citrated blood from a normal animal. Blood-clotting powers are restored in less than one hour, and complete recovery occurs in 7 to 14 days, provided that the animal is not allowed to eat any damaged sweet clover.

### **References**

Evers, Robert A., and Roger P. Link. Poisonous Plants of the Midwest and Their Effects on Livestock, 1972. Special Publication 24, College of Agriculture, University of Illinois at Urbana-Champaign.

