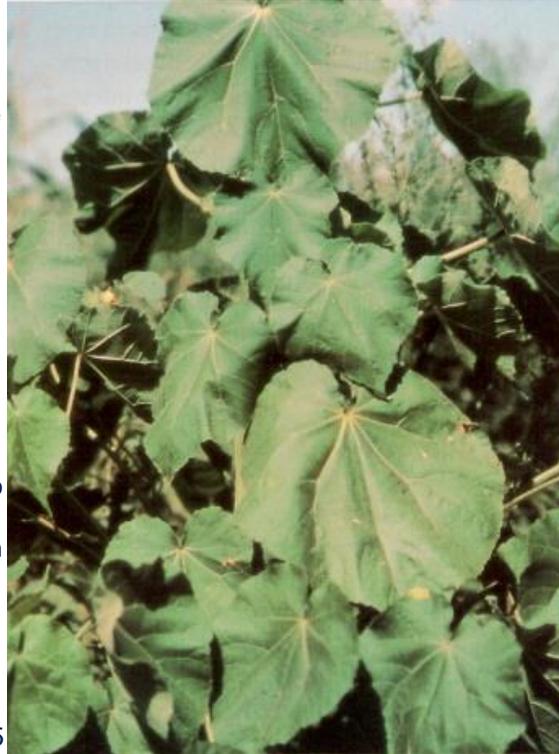


Nova Scotia Noxious Weeds

Velvetleaf - *Abutilon theophrasti* Medic.

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Velvetleaf is an annual weed that grows from 30 to 150 cm in height. As a seedling, the stem is tinged with purple near the soil surface, and has a dense cover of short hairs. Mature plants have a strong, sturdy stem that is mostly unbranched. Velvetleaf goes through an unusual "sleep cycle". At certain times of the day, its leaves droop, while at other times, they are horizontal. This is an important factor to consider when spraying the plant with herbicide (see information on control).



The leaves of this weed are very distinctive because of their cover of soft hairs, resulting in the plant's name. They are heart-shaped and very large, measuring 6 to 18 cm long, and up to 15 cm wide, with main veins evident as depressions on the upper surface, and ridges on the lower. The leaf stalks are flattened on the upper surface and are densely hairy. Both the stems and the leaves have a very strong, unpleasant odour when crushed.

Velvetleaf flowers are single blooms of about 2.5 cm in diameter. The flowers have 5 petals and are yellow to orange in colour. This weed usually flowers from July to October, and the seeds mature 6 weeks later. Both flowers and seedpods occur on the plant at the same time. The distinctive seed pods of velvetleaf are hard, rounded capsules divided into 12 to 15 segments, each with a pointed and curved tip. When mature, the pods turn black.

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Velvetleaf is almost impossible to eradicate once established--if left uncontrolled, infestations can increase by 70% in just one year!

Velvetleaf was introduced from India as a garden plant. In India, it is used in the textile industry to make thread, fibers, and woven fabrics. In China, it is used to make twine. Other names this weed is known by include Indian mallow, butterprint, butter weed, Indian hemp, and cotton weed.

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Life Cycle

Velvetleaf produces a large amount of seed on each plant. A single plant can produce up to 8,000 seeds in one season. The seeds usually germinate in spring, but can germinate all season long. Seeds can also remain dormant in the soil or in dry storage for more than 50 years. The seeds germinate best when they are within 1 inch of the surface of the soil.

Habitat

Velvetleaf is fairly adaptable and can be found growing in vacant lots, gardens, cultivated fields, and waste places. In Nova Scotia, it has been found in manure piles, newly manured fields, and under bird feeders. It has been spreading into Nova Scotia primarily by feeds and seed. In feeds, it has been mainly introduced via corn.

Effects

Velvetleaf is a problem in row crops, particularly corn and soybeans. Early emerging crops are more competitive than late emerging crops because they shade the seedlings. Velvetleaf often grows to a height just above the crop and then shades it.



When established in cropland, velvetleaf causes yield loss and reduces crop quality. In continental USA, 33 per cent of corn acreage and 38 per cent of soybean acreage is infested with Velvetleaf. In 1990, \$350 million was lost in crop and control measures in the eastern USA and central Canada. In addition to crowding problems, the surface of Velvetleaf harbours allelopathic chemicals which wash off the plant and enter the soil. Once in the soil, these chemicals inhibit the water uptake and chlorophyll production of other crop plants.

Control

The elimination of seed banks in infested areas is virtually impossible. In order to prevent increasing the seed bank, it is best to focus on early hand-pulling of this weed in the field. Cultivation of the soil will bring seeds to the surface where they will germinate more easily.

In order to preserve yields of crops, it is best to delay the emergence of velvetleaf until a dense canopy is produced. Large infestations may require both pre and post emergence herbicide applications for control. Soil applied herbicides can be used before emergence, but preventing this weed from going to seed is essential. For post emergent applications ensure that plants are sprayed during the day when the leaves are horizontal and not in the sleep cycle. Once established, even intensive effort cannot eradicate this weed. For more information or herbicide application rates, contact your weed inspector or the most recent Guide to Weed Control (Publication 75).

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