

VELVETLEAF

Abutilon theophrasti Medic

Family: *Malvaceae* (Mallow).

Other Scientific Names: None.

Other Common Names: Velvetweed, piemaker, elephant-ear, Indian mallow.

Legal Status: Provincial Noxious.



Identification

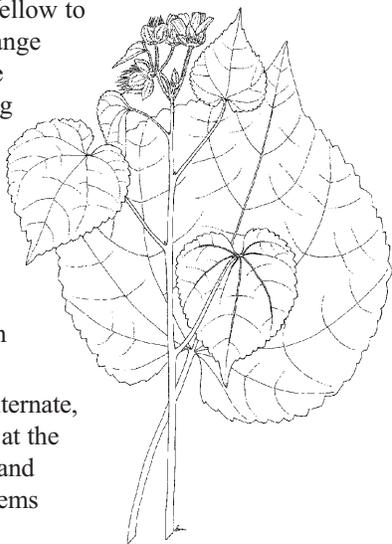
Growth form: Annual forb.

Flower: Yellow to yellow-orange

5-petalled flowers are borne on stalks arising from the leaf axils.

Seeds/Fruit: Fruits are rounded with 9–15 segments arranged in a disk, each containing numerous grey-brown seeds.

Leaves: Leaves are alternate, heart-shaped, pointed at the end, 10–20 cm wide, and attached on slender stems



(Whitson et al. 1996). Leaves remain perpendicular to the sun all day (Duyssen 1997).

Stems: Mature plants are 1–2 m tall. Stems are erect and branched, and the entire plant is covered with short, soft, “velvety” hairs.

Roots: Taproot.

Seedling: The seed leaves (cotyledons) have slightly different shapes: one is nearly round, the other more heart-shaped. Both cotyledon margins are entire, and cotyledons are covered on both surfaces with short hairs (Carey et al. 1993).

Similar Species

Exotics: None known.

Natives: None known.

Impacts

Agricultural: A serious problem in croplands in North America because of its high seedling vigour, rapid growth habit, tolerance to many herbicides, and ability to produce large amounts of seed (Starke and Renner 1996). It is often a pest in corn, sorghum, milo, and spring wheat (Duyssen 1997). Seeds can contaminate chicken feed and reduce the salability of eggs (Duyssen 1997).

Ecological: The plant is able to produce large amounts of seed that remain viable for many years, and it is a successful seed producer even under competition. The roots also exude a chemical that inhibits fungal growth.

Human: No information available.

Habitat and Ecology

General requirements: In BC, velvetleaf occurs only at low elevations. It is commonly found in cultivated fields, gardens, fencelines, and disturbed areas. It well adapted to sunny areas with rich soils.

Distribution: Widespread throughout North America. It occurs infrequently in southwestern BC and is known only from the Lower Fraser Valley (Douglas et

al. 1999), where it is a potential threat to agricultural production, particularly corn.

Historical: Introduced from either China or India for commercial fiber production. It is believed that the entire North American population is derived from a single plant (Duyssen 1997).

Life cycle: Flowering occurs from late June through October. Seeds may germinate throughout the growing season. Seeds have a hard coat that contains bacteria and tannin-like compounds to protect it from infection (Duyssen 1997).

Mode of reproduction: By seed.

Seed production: A single plant may produce 700–1,700 seeds (Duyssen 1997).

Seed bank: Seeds retain their viability in the soil for over 50 years, making eradication difficult (Whitson et al. 1996). If infestations are allowed to persist and establish a seed bank, this weed can be troublesome.

Dispersal: No information available.

Hybridization: No information available.

Management

Biocontrol: None.

Mechanical: Cutting or mowing plants after flowering but before seed-set should eliminate the current year seed production.

Fire: No information available.

Herbicides: In non-crop situations, glyphosate, picloram, 2,4-D, and dicamba been used post-emergence to control velvetleaf. Herbicides should be applied before seed-set. Consult the most recent edition of BC Ministry of Agriculture, Food and Fisheries Crop Production Guides for specific recommendations.

Before applying herbicides, read the label for full use and precautionary instructions.

Cultural/Preventive: Infestations can be difficult to eradicate because of the long viability of seeds in the soil. Tillage can be effective in reducing seedling

emergence if the seeds are buried at least 7.5 cm in the soil. Prevent the establishment of new infestations by minimizing disturbance, eliminating seed production and dispersal, and maintaining vigorous perennial native communities.

Integrated Management Summary

Velvetleaf is usually not a problem on rangeland or forestland in BC. If this plant is found, eliminate seed production until the soil seed bank has been depleted. Cut, pull, or treat plants with herbicide before they set seed.

References

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