

Weed of Interest: Velvetleaf

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Velvetleaf, also known as butterprint, Indian mallow, and elephant-ears is an erect unbranched summer annual in the mallow or cotton family. Its heart-shaped leaves and stems are covered with soft hairs. In the heat of the summer, when the leaves are crushed, or even brushed against, they will emit a strong, unpleasant odor.

Velvetleaf reproduces exclusively by seed that emerge from freshly disturbed or cultivated soil in mid- to late May. *Abutilon theophrasti* is so named to describe its mallow-like appearance and to honor Theophrastus, the father of modern Botany. Velvetleaf is native either to India or China, depending on the authority consulted. However, it was purposefully introduced to North America in the 1750s as a potential crop plant. The fibers that are produced in the long straight stems have moderate strength. Although it was used for rope making for ships at the time, other crops like kenaf and jute



Softly hairy leaves and stem of velvetleaf. Photo by A. Senesac



Numerous seedpods maturing on velvetleaf upper stems Photo by A. Senesac

produce fibers with superior strength. This fiber weakness may have contributed to its loss of popularity as a crop in the colonial era. However, it wasn't long after velvetleaf began to be grown as a crop that it was recognized as a potentially serious weed of other crops.

To this day, velvetleaf is considered a major weed of field crops such as corn and soybeans. On Long Island, it is not yet at the infestation level that would make it a common weed. However, because the seed is large and will tend to drop near the maturing plant, dense concentrated groups of plants are usually seen rather than widespread single plants. The characteristic of seeds maturing late on the tall straight stems can and should allow for late-season hand pulling of small infestations, with careful removal from the fields for disposal. The seeds will continue to ripen well into the late fall and will self-scatter if the stalks are left in the fields. The seeds are formed and held in a multi-segmented carpel or chamber. As the seeds ripen in the late fall, the carpel splits at the top and the seeds will be shaken to the soil by the force of wind. In areas with snow cover, the seeds can be blown great distances along the crust of the old snow.

Velvetleaf has some of the longest living seeds of common weeds found in New York. Studies at Cornell Uni-

versity found that velvetleaf can retain its seed viability for at least 30 to 40 years.

There is well documented evidence that velvetleaf has the potential to negatively affect plants by release of inhibitory chemicals (allelopathy). Certain compounds have been extracted which inhibit the germination of other weed species as well as crop plants. This ability to chemically interfere with crops in addition to the tendency to grow in dense groups can have serious impacts on crops.

In China, velvetleaf is still grown as a crop plant for its bast fiber as well as the edible immature seeds, which taste like sunflower seed. The mature seeds are sometimes collected and ground as a type of flour. Velvetleaf has some unusual folk-medicinal uses including treatment for corneal occlusion. Velvetleaf is also a weed of vegetable crops and can be managed by careful scouting and cultivation in the spring to control seedlings. The seeds are large and produce vigorous seedlings, so a single pass of a light cultivator may move the seed-

lings but not completely dislodge them from the soil. Early intervention with follow up cultivation to destroy the escapes is usually needed to control this weed mechanically.

Velvetleaf can be successfully managed by several pre-emergence herbicides that are registered for various vegetable crops on Long Island including: Callisto (mesotrione), Command (clomazone), Goal (oxyfluorfen) Goaltender (oxyfluorfen), Metribuzin, Prowl H2O (pendimethalin), Reflex (fomesafen) and Strategy (clomazone + ethalfluralin). In addition, early postemergence control is possible with either Sandea (halosulfuron) or Basagran (bentazon).

Regardless of the method of weed management that is chosen, it is always a good idea to survey the fields at the end of the season and remove any uncontrolled plants. Remember: 'one year's seeding means seven year's weeding' - so that last look at the field before the cover crop is seeded may well be worthwhile. ●



Highly dense population of velvetleaf. Photo by A. Senesac