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Control of Broadleaf Lawn Weeds

Introduction: There are several common broadleaf weeds, which may be found in home lawns. Often these weeds occupy areas in lawns which have been damaged by pests or other factors. Weeds are often found in lawns, which are growing on poor sites, where soil conditions are poor (i.e. low soil pH) and where incorrect maintenance (mowing, fertilization, or irrigation practices) is followed. The key to weed management is to identify the factor(s) that is causing the reduction in turf density. A thick lawn, which is properly maintained, is the best way to prevent and control most weed infestations.

The following are many of the common weeds found in lawns on Long Island. Click on the weed name and you are directed to the UMass Weed Herbarium web site. An excellent source of color photographs to help you identify the weeds in your lawn. Another excellent source for identifying weeds of all types is *Weeds Of The Northeast*, by Richard H. Uva, Joseph C. Neal, and Joseph M. DiTomaso, ISBN 0-8014-3391-6.

The weeds are grouped according to whether they are considered to be a winter annual, summer annual or a perennial weed.

Winter Annual Broadleaf Weeds

Winter annual weeds are those that germinate in late summer to early spring, flower, and produce seeds in mid to late spring, after which the plant dies. Many winter annual weeds tolerate cold weather, often overwintering then flowering the following spring or summer. They generally do not thrive under hot, dry conditions.

Common Chickweed (*Stellaria media*): Although a winter annual, common chickweed can become perennialized in cool, moist areas. It reproduces by seed and thrives in moist, shady sites. One or two generations can be produced each year. It tolerates close (low) and frequent mowing.

Corn Speedwell (*Veronica arvensis*): A winter annual that reproduces by seed. Seeds germinate in late summer, fall or early spring, sometimes throughout the growing season in cool, moist areas. It is common in shaded lawns. It usually grows in dry, sandy or rocky soils.

Henbit (*Lamium amplexicaule*): A winter annual that reproduces by seed. Seedlings emerge from moist, cool soil in early spring and fall. This weed thrives on cool, rich, fertile soil in early spring and fall.

Summer Annual Broadleaf Weeds

Summer annual weeds are those that germinate in the spring or summer, flower, set seed, and then die during a single growing season.

Black Medic (*Medicago lupulina*): Black medic is as summer annual that reproduces from seed. The seeds germinate in early autumn or spring. It is sometimes called "black clover" because its leaves are very similar in shape to those of clover. It is commonly found in nutrient-poor and drought-prone soils as well as disturbed soils.

Knotweed (*Polygonum aviculare*): Knotwood is a summer annual that reproduces from seed. It is one of the first summer annual weeds to emerge in the spring – up to a month before crabgrass. The weed can also emerge throughout the spring and summer as well. In turfgrass, knotweed is most often found on hard compacted soil or areas damaged in the spring or summer by traffic or trampling, including paths and walkways, areas where road salt accumulates, and athletic fields. It will survive in stressed sites where other species do not grow.

Prostrate Spurge (*Euphorbia maculata*): Prostrate spurge is a summer annual that reproduces from seed. The seeds germinate from early to late summer. This weed survives on dry or sandy soil, low-nutrient soil and on compacted to disturbed sites.

Perennial Broadleaf Weeds

Perennial broadleaf weeds are those that generally live for more than 2 years.

Broadleaf Plantain (*Plantago major*): A perennial that reproduces from seed. Seeds germinate in late spring through summer and also sporadically in the early fall. Broadleaf plantain is primarily a weed in turfgrass. It can be found in low- and high-maintenance lawns. It prefers damp, nutrient rich soil. It also tolerates close mowing, heavily compacted soil, wet soils and dry soils.

Buckhorn Plantain (*Plantago lanceolata*): A perennial that reproduces by seed and by new shoots that develop at the base of the plant. Most seedlings emerge in spring or early autumn. The seeds can germinate in darkness so they can become established even in tall, dense vegetation. It is common on drier sites and on neutral to basic (pH >7.0) soils. It often grows on compacted soils, but it does not survive areas that are routinely trampled. It will tolerate close mowing.

Common Blue Violet (*Viola papilionacea*): A low-growing perennial that reproduces by seeds and short, stout, branching rhizomes. For unknown reasons this weed is common in turfgrass in cemeteries. It frequently escapes old flower gardens. It prefers moist, cool, shady areas, but once it is well established it will tolerate drought-prone soils.

Creeping or Slender Speedwell (*Veronica filiformis*): (photograph not available) A perennial with reproduction that is primarily vegetative. Creeping and fragmented stems will root at the nodes. Stems with only a single node can form roots. This weed is easily spread by mowers, in lawn clippings, yard compost, or landscape plant material because stems can root easily. It tolerates a wide variety of soil types and conditions but thrives in cool, moist, shaded turf, growing on nutrient-rich soils.

Dandelion (*Taraxacum officinale*): These are perennial weeds, which produce the commonly seen yellow flowers in the spring and again in the fall when the length is under 12 hours. It mainly reproduces by windblown seed and occasionally develops from broken segments of the taproot. Seeds germinate in the top 2 cm of soil and seedlings emerge from late spring to early autumn, with most emerging in early summer (several weeks after seeds are shed). Dandelion tolerates many soil types, but one thing it will not tolerate is cultivation.

Ground Ivy (*Glechoma hederacea*): This perennial weed reproduces primarily by creeping stems that root at each node and which can form dense patches. Reproduction by seed is less common. Infestations occur primarily by encroachment of vegetative fragments from adjacent areas. It is commonly found in rich, damp, shaded areas, but it will also tolerate full sunlight.

Yellow Hawkweed (*Hieracium pretense*): This perennial reproduces from seeds, rhizomes, and stolons. The seeds are wind spread and will germinate soon after they are shed. The hairy stolons root at the nodes, where a new rosette will develop. The weed is common in low-maintenance turfgrass, often being found on poor, gravelly soils that usually are low in fertility and acidic (low pH).

Mouse-ear Chickweed (*Cerastium vulgatum*): A perennial that reproduces by seed. The plant has hairy prostrate stems that root at the node and allow it to form dense mats in turfgrass. Seedlings emerge in late summer, fall or early spring. If the site is cool and moist or irrigated, emergence can continue throughout the summer. It will tolerate low mowing and shady sites.

Red Sorrel (*Rumex acetosella*): This is a rhizome producing perennial weed. It reproduces by seeds and buds that sprout off the rhizomes in early spring and produce basal rosettes. The rhizomes can be numerous. It is often found in turfgrass that is growing on soils with low pH (acid soils) and poor drainage, low fertility (especially nitrogen) and little competition from other species.

White Clover (*Trifolium repens*): A perennial weed that reproduces by seed and stolons. The low creeping stolons root at the node, which form mats of clover. The seeds germinate in under cool, moist conditions in spring, early summer, or early fall. It tolerates close mowing and is often for this reason found in high maintenance lawns. It tolerates a wide range of soil conditions and is especially found growing on clay. It will tolerate a wide range of soil acidity (soil pH).

Yellow Woodsorrel (*Oxalis stricta*): This perennial weed is clover-like in appearance. In cooler climates it can act as a summer annual weed. It reproduces primarily from seeds, but is capable of spreading by rhizomes also. The seeds germinate shortly after dispersal, when conditions allow. It thrives on nutrient-rich, moist soil, but tolerates a wide range of soil types and site conditions, from moist and shady to sunny and drought-prone.

Management

New lawns: The greatest source of weed seeds in new lawns is the soil itself. Planting at the proper season with the right grasses and adequate fertilization at seeding time are the most important practices in minimizing weed problems. On Long Island, late summer (August 20 - October 1) planting is almost the only means of preventing crabgrass from taking over the lawn. When planted in late summer, the grass plants will spread laterally and the turf will be dense and mature before most troublesome lawn weeds appear the following spring. Fine-leaf fescues are competitive in both shady and droughty sites and, depending on the cultivars, can be exceptionally weed suppressive once established.

Established lawns: The key to weed management is to identify the factor(s) (i.e. incorrect mowing, fertilizing, and irrigation as well as low soil pH) that is causing the reduction in turf density. A common problem found on Long Island is low soil pH. Information on how to submit soil samples for pH testing can be obtained from Cornell Cooperative Extension – Suffolk County. Sometimes, however, weeds persist in spite of good maintenance.

For small lawns or where there are only a few weeds, hand pulling as weeds appear can give good temporary results. Weeds can be pulled more easily after a heavy rain or watering. Reseed the bare spots that result from the removal of the weed plant.

For established lawns, the use of herbicides to control weeds is more practical for large areas, weeds that are difficult to pull (such as perennials), and small patches of persistent weeds. Large areas can be treated with sprays or granular formulations, which provide reasonable weed control with minimal injury to turfgrass. Small infestations of weeds can be spot treated; formulations are available for homeowners for these sites.

When weeds infest an area of any size and the populations are high enough throughout the area to be objectionable, an overall treatment with a selective herbicide that will kill the weeds and leave the grass unharmed may be necessary. Products for difficult to control broadleaf perennials are currently available as well.

Where weed infestation is serious (greater than 40 percent) and turf condition is poor, consider a total renovation and replanting with a turfgrass mixture well suited for your particular site.

Herbicide Safety: Check the herbicide label for the proper way to apply. When used according to directions on the package label, herbicides should not be a hazard to people, pets, turfgrass, or desirable plants in the garden or landscape.

Also check the herbicide label and this and related publications, for the most effective time to apply herbicides. For example, to avoid injury to sensitive ornamentals, if using phenoxy herbicides such as 2,4-D or MCPP, application should be made in the fall or early spring when temperatures are lower and herbicide volatility will be reduced and on days with little wind action.

Larger area treatment: The basic ingredient in many broadleaf herbicides is 2,4-D. Used alone, it controls a wide range of broadleaf weeds. Formulators often combine one or more chemicals with 2,4-D, such as MCPP or dicamba, to increase the number of weeds controlled. Such mixtures control many broadleaf weeds commonly found in lawns. Chemical control of broadleaf weeds is best accomplished in the fall or spring.

If repeated applications of one of the mixtures of broadleaf weed killers fail to eliminate a weed called Veronica (speedwells) there are two products containing quinclorac which are effective against several speedwell species: Bayer Advanced All in One Lawn Weed & Crabgrass Killer 1 RTU (EPA Reg. 72155-85); and Ortho Weed-B-Gon Max plus Crabgrass Control (239-2689).

Ground ivy and wild violet are also perennial weeds that are exceptionally difficult to control in shaded lawns. Herbicides containing dithiopyr may aid in control of ground ivy, violet, or speedwell. Check labels to see if the product lists that particular weed. Repeated herbicide applications may eventually provide full control of these weeds. Otherwise, selection of a more competitive turfgrass mixture for shadier sites may help to out-compete these shade-loving weeds. Fine-leaf fescues are competitive in both shady and droughty sites and, depending on the cultivars, can be exceptionally weed suppressive once established.

Prepared by Thomas Kowalsick, Senior Horticulture Consultant, Cornell Cooperative Extension – Suffolk County, 10/2009.

Resources: Uva, Richard H., Joseph C. Neal, and Joseph M. DiTomaso. *Weeds Of The Northeast.* Ithaca: Cornell University Press, 1997. Gussack, Eva, and Frank S. Rossi. *Turfgrass Problems Picture Clues and Management Options*. Ithaca: NRAES, 2001.

Pesticide and management recommendations obtained from*: Cornell Pesticide Guidelines for Managing Pests Around the Home, Cornell University Cooperative Extension.*

The New York State Department of Environmental Conservation (NYSDEC) Bureau of Pest Management maintains a web site with a searchable database for pesticide products currently registered in New York State. Individuals who have Internet access can locate currently registered products containing the active ingredients suggested in this diagnostic report at http://www.dec.ny.gov/nyspad/products?0. This replaces the no longer updated (as of August 15, 2016) PIMS website (http://pims.psur.cornell.edu/).

This publication contains pesticide recommendations. Changes in pesticide regulations occur constantly and human errors are still possible. Some materials mentioned may no longer be available, and some uses may no longer be legal. All pesticides distributed, sold or applied in New York State must be registered with the New York State Department of Environmental Conservation (NYSDEC). Questions concerning the legality and/or registration status for pesticide use in New York State should be directed to the appropriate Cornell Cooperative Extension Specialist or your regional NYSDEC office. Read the label before applying any pesticide.

TK: 10/2009 AR: 1/2018