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### Crabgrass Control



**Figure 1.** Crabgrass plants. Note the prostrate and spreading growth habit typically seen in lawns.  
(Andrew F. Senesac, Cornell Cooperative Extension – Suffolk County)

**Introduction:** Crabgrass is a summer annual weed (one that germinates in the spring or summer, flowers, sets seed, and dies during a single growing season). In regularly mowed lawns it grows prostrate and spreading (**Figure 1**). It dies in autumn with the first killing frost. It has the ability to survive in poor, dry soil conditions, but easily tolerates soil conditions of most kinds. In lawns it is often found where the soil and maintenance practices are poor.

Crabgrass reproduces from seed that can germinate from mid-spring to late summer. All crabgrass seed in the soil does not germinate each year. Research has shown that less than 50% of the seed produced the previous year will germinate the following spring. Lawns infested with crabgrass for several years in a row will have a large bank of viable seed during the spring due to the high level of seed production over the years. If crabgrass seed production is prevented, you will significantly reduce the seed present in the weed seed bank in your lawn.

#### Management in 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 a new lawn.

#### Management in Established Lawns

**Improve cultural practices:** The key to crabgrass management in established lawns is to identify the factors (i.e. incorrect mowing, irrigation, low soil pH, etc.) that are causing the reduction in turf density. A dense stand of turf maintained properly can provide acceptable crabgrass control. Have soil tested for pH. [Instructions for submitting soil for testing](#) can be obtained from Cornell Cooperative Extension – Suffolk County.

**Eliminate “edging” near walkways and driveways:** Crabgrass is often found growing along walkways and driveways. The practice of frequently “edging” (removing turf and soil) or scalping turf with a line trimmer exposes soil and reduces turf density thus allowing crabgrass to inhabit these areas. Eliminate edging and you will help reduce crabgrass infestations along walks and driveways.

**Hand pull and/or spot treat small numbers of weeds:** For small lawns or where there are only a few crabgrass plants, hand pulling as they appear can give good results. Plants can be pulled easier after a heavy rain or watering. Reseed any bare spots. Spot-treatment with a post emergence crabgrass killer (see below) is another option.

**Renovate lawns in poor condition:** If crabgrass infestation is serious (greater than 40 percent) and turf condition is poor, consider a total renovation. Use a seed mixture well suited for the particular site and desired level of maintenance.

**Preemergence herbicides:** For larger areas where a crabgrass infestation is likely it may be necessary to apply a preemergence herbicide. Table 1 lists active ingredients along with information on efficacy and persistence that are available in homeowner products. Some products are formulated with fertilizer.

The natural organic product corn gluten meal (CGM) has been demonstrated to show herbicidal activity. The specific chemical responsible for the activity has not been isolated and characterized. Still, CGM is 10% nitrogen and when applied according to label directions, it supplies 2 lbs. of actual N per 1000 square feet. The nitrogen applied in the spring extends top growth at the expense of root growth. However, when the turf in your lawn is thin, the spring nitrogen will increase density that might provide some weed control. Studies conducted by Cornell Turf Team Members Andy Senesac,

Ph.D (Cornell Cooperative Extension – Suffolk County Weed Scientist) and Frank Rossi (Cornell Department of Horticulture) found that season-long control (of crabgrass) with CGM does not exceed 60%. In addition, control from the CGM is not significantly different from the application of synthetic fertilizers, or in some cases, from organic fertilizers. The studies have demonstrated a substantial increase in turfgrass density in response to the nitrogen from the various sources that likely has an influence on crabgrass invasion.

Preemergence herbicides do not affect un-germinated (dormant) crabgrass seeds. Instead seedling plants growing in the herbicide treated soil are unable to survive. The duration of the preemergence herbicide activity in the soil is affected by environmental conditions such as moisture, temperature, light, and the amount of organic matter in the soil. Warm, moist soils encourage microbial degradation of the herbicides carbon structure; the microbes use it as a food source. This is why in years of early and extended soil warming, preemergence herbicides fail to provide season-long control. Simply, the crabgrass germination period exceeds the residual activity of the herbicide.

**Table 1. Efficacy and persistence of preemergence herbicides<sup>1</sup>**

Common Name Of Preemergence Herbicide	Crabgrass Control (4-6 weeks)	Crabgrass Control (12-15 weeks)
Benfen	E	F
Dithiopyr	E	E
Pendimethalin	E	E
Siduron	F	P
Benfen plus trifluralin	E	G

<sup>1</sup>E = excellent (>85% control), G = good (75-85% control), F = fair (65-75% control), P = poor (<65% control)

Source: 2010 Pest Management Guidelines for Commercial Turfgrass. Cornell University.

**Timing of Preemergence Herbicides:** To be effective preemergence herbicides need to be applied and become active before crabgrass seedlings emerge from soil. If you apply a preemergence herbicide too early in the spring its effectiveness may dissipate and you may see late germinating crabgrass seedlings breaking through the turf in later spring and summer. An easy way to determine when to apply a preemergence crabgrass herbicide is to make the application when the flowers on nearby forsythia shrubs are just starting to fade, usually sometime in the last 3 weeks of April depending on your location in Suffolk County.

**Postemergence control:** After crabgrass emergence: **methanearsonate (MSMA)** can be applied before crabgrass is large enough to be competitive with desirable turfgrass; **dithiopyr** gives early postemergence (3-5 leaf stage) control; **quinclorac** (Ortho Weed B Gon Max Plus Crabgrass Control, EPA Reg. No. 239-2689; Gordon’s Trimec Crabgrass Plus Lawn Weed Killer Ready-To-Use, EPA Reg. No. 2217-906; Bayer Advanced All-In-One Lawn Weed and Crabgrass Killer I Ready-To-Use, EPA Reg. No. 72155-85).

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Resources: *Weeds of the Northeast*, by R.H. Uva, J.C. Neal & J.M. DiTomasso, 1997; “Winter Weed Control Northern Style”, Frank S. Rossi, Ph.D., Assistant Professor of Turfgrass Science and Extension Turfgrass Specialist, Cornell University, *Landscape Management*, March 1998. *2010 Pest Management Guidelines for Commercial Turfgrass*. Cornell University.

Pesticide recommendations obtained from *2009-2010 Pest Management Around the Home Part II – Pesticide Guidelines*. Copies are available from Cornell Cooperative Extension – Suffolk County.

The Pesticide Management Education Program (PMEP), in cooperation with the New York State Department of Environmental Conservation (NYSDEC), 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 above at <http://pmep.cce.cornell.edu/pims/current> (NYS PIMS).

**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.**

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