

Weed Control in Turf

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Introduction

Your lawn may grow more than the beautiful grass you intended. It may also grow weeds, which prevent your lawn from looking its best. In addition to reducing the aesthetics of your lawn, weeds compete with the desired turfgrass for water, nutrients, and light. If you don't control weeds, your lawn will deteriorate over time. Weeds are often a symptom of a soil or micro-climate (such as shade) problem that exists in your lawn. So, weed control involves both removing the weeds and correcting the conditions that led to poor quality turf.

Cultural Control

Growing healthy dense turf is the best way to prevent weeds. Vigorous, healthy turf shades weed seeds so they don't germinate. Select suitable lawn grasses, fertilize properly (primarily in fall), lime as needed based on soil test recommendations, mow frequently only removing 1/3 of leaf tissue with each cutting, water during establishment and only to keep lawn green during drought. When you water, be sure to thoroughly soak soil weekly. Frequent, light watering encourages weed encroachment, discourages deep rooting and lowers the environmental stress tolerance of turfgrasses. Aerate and add compost to improve soil structure. To have a beautiful, healthy lawn you need a basic knowledge of turfgrasses and their cultural requirements. For more detailed lawn care information see cultural lawn care fact sheets or the Delaware Livable Lawns website.

Chemical Control

Herbicides, chemicals that kill or alter the normal growth of weeds, can be divided into two main groups: selective and nonselective. Selective herbicides control the target weed without damaging desirable turfgrasses. Nonselective herbicides kill all vegetation (including turfgrasses) and are used in lawn renovation or for weeds not controlled by selective herbicides.

Herbicides can be further divided into preemergence and postemergence categories. Preemergent herbicides are applied prior to germination and weed emergence. They are typically used for controlling annual weeds. Postemergence herbicides are used for controlling weeds that have already emerged from the soil. They are either systemic or contact in nature. Contact herbicides affect the plant parts they touch and are not translocated to other parts of the weed. Systemic herbicides are translocated throughout the plant, so they are effective at killing perennials: weeds that can generate new foliage from underground roots.

Herbicides can be applied to foliage or soil. Postemergence herbicides are usually foliar applied, and preemergence herbicides are soil applied. A foliar-applied herbicide must contact and be absorbed by the foliage. It is less effective if washed off the leaf surface by rainfall or irrigation. Soil-applied herbicides can be applied as liquids or granulars and should be watered into the soil (by rainfall or 15-20 minutes of irrigation) following application.

The best way to think about controlling weeds in lawns is to figure out how the weed differs from the

desirable grass and use that difference as a means for control.

Annual grass weeds

Summer annual grass weeds are common problems in lawns. They differ from desirable lawn grasses because they must germinate each year. Crabgrass and goosegrass are two common summer annuals. These weeds are controlled with preemergence herbicides that form a chemical barrier in the soil prior to germination or emergence. The barrier prevents the seedlings from emerging and developing normally. *Table 1*

SOME PREEMERGENCE HERBICIDES FOR THE CONTROL OF SUMMER ANNUAL GRASSES*

Generic Name	Trade Name			
Benefin	Lebanon Balan 2.5G			
Benefin and trifluralin	Team or Team Pro			
Bensulide	Bensumec			
Bensulide + oxadiazon	Goosegrass/Crabgrass Control			
Dithiopyr	Dimension			
Oxadiazon	Ronstar			
Pendimethalin	Pre-M, Pendulum, Halts			
Prodiamine	Barricade, Evade, Kade, Resolute			
Siduron	Tupersan			

* All the chemicals listed in this publication can be used on home lawns, but some are only available to professionals with a certified applicator's license.

Most preemergence herbicides remain active in the soil, so seeding should be postponed for the amount of time specified on the manufacturer's label. Siduron is the only material that can be safely used during or immediately following seeding. Timing of preemergence herbicides is critical. The best time to apply preemergence herbicides is approximately 10 to 14 days prior to the expected germination period in spring. Crabgrass begins to germinate when soils are moist and the temperature in the upper inch of soil reaches 55 o to 580 F at daybreak for four to five days. Forsythia petal fall is sometimes used as a guideline but may not be reliable. In Delaware, crabgrass usually germinates between March 15 and April 15. Depending on the product, time of application, location and rainfall in the spring, reapplication may be necessary within 60 to 90 days for season-long control.

If preemergence herbicides are applied too late, you may need to use a postemergence herbicide for summer annual grass control. Apply postemergence herbicides when the crabgrass or other annual weed is fully visible and apply only to patches of weeds. As crabgrass becomes larger, it is more difficult to control. You may need to use repeat applications at 10 to 14 day intervals and expect to see some yellowing on desired turfgrass. *Table 2*

Generic Name	Trade Name	
Dithiopyr	Dimension	
Fenoxaprop-p-ethyl	Acclaim Extra	
Quinclorac	Drive 75 DF Herbicide	

SOME POSTEMERGENCE HERBICIDES FOR THE CONTROL OF SUMMER ANNUAL GRASSES*

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Broadleaf weeds

Broadleaf weeds differ from desirable lawn grasses in their chemistry and morphology. Scientists have been able to develop selective products that control broadleaf weeds without harming desirable turfgrasses. Broadleaf weeds are primarily controlled with herbicides that are applied after weeds have emerged. These herbicides are applied to foliage and are absorbed into the weed. These herbicides may be applied as a spray or as a granular.

For the most effective control of broadleaf weeds, apply postemergence herbicides as sprays to foliage (don't wash off). Granular products should be applied to moist (dew-covered) foliage for optimum control. Postemergence broadleaf herbicides are most effective when weeds are actively growing (spring and fall) and when temperatures are between 700 and 850F. Two or more different herbicides are frequently sold in combination to provide control of as many different broadleaf weeds as possible. It is important to identify the weed(s) to be controlled because many of these herbicides are selective to specific broadleaf weeds. These products have the potential to damage trees, shrubs, flowers, and vegetables if they contact the foliage. Trees and shrubs are particularly sensitive to dicamba since this herbicide is mobile in the soil and can be taken up by tree roots. Do not use any of these herbicides on newly-seeded turf. Wait until the new lawn has been mowed at least 3 times before treating (usually about 6 to 8 weeks after seedling emergence). Table 3

BROADLEAF HERBICIDES AND HERBICIDE COMBINATIONS FOR USE IN COOL-SEASON TURF*

Generic Name	Trade Name		
2,4-D (amine)	Solution Water Soluble, Weedestroy AM-40		
2,4-D, Dicamba, MCPP	Trimec, Weed-B-Gon, SpeedZone		
Carfentrazone-ethyl	Quicksilver		
Fluroxypyr (amine)	Spotlight		
Triclopyr (ester)	Turflon Ester		

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Nutsedge

Yellow nutsedge is a common turfgrass weed that looks like a grass but is actually a sedge. It has erect, triangular-shaped stems that are yellow-green, with a thick mid-vein and a waxy surface. The shallow, fibrous root system often produces many nut-like tubers, which are underground food storage organs. Each of these tubers can germinate and produce a new plant. Yellow nutsedge thrives in warm, wet conditions and is often found in low-lying areas of the lawn with poor drainage. If only a few nutsedge plants are present, they can be removed by hand pulling. Remove the entire plant and the root system by digging under the plant. Where large patches of nutsedge are present, herbicides may be required. Selective herbicides have been developed that will control this sedge without harming the desirable turfgrass: Halosulfuron (SedgeHammer, HI-YIELD Nutsedge Control, NuFarm Halosulfuron Pro) and Sulfentrazone (Ortho Nutsedge Killer for Lawns) are effective for yellow nutsedge control. Repeat application, 6 to 10 weeks after initial application, may be required for complete control.

Perennial grass weeds

Perennial grass weeds are not different from desirable turfgrasses except that we don't want them in our lawn. Bentgrass, which is highly desirable on a golf green, is a weed in the lawn, due to its soft, fine-bladed tufty habit. Wiregrass (or common bermudagrass), is found throughout the state; it spreads rapidly by tough wiry stems. This warm season grass goes dormant in the winter. Nimblewill (Muhlenbergia) is a blue-green, thin-bladed grass with wiry stems that forms patches, like bentgrass. Several species of Paspalum can be found in lawns. One, called Dallasgrass, is a coarse, yellow-green, warm season clump-grass. Seed spikes have characteristic flat, rounded seeds. The only mechanism for control of these perennial grasses is to use a non-selective herbicide, kill the entire patch of lawn infested with the weed, and reseed with desirable turfgrass once the weed is gone. Glyphosate is a non-selective herbicide that can be used for this type of control. Table 4

SUGGESTIONS FOR SELECTIVE CONTROL OF TURFGRASS WEEDS, BY WEED SPECIES.* **

Weed	Material	Apply	Remarks
Black Medic Medicago lupulina This and similar species of yellow flowering clovers may invade lawns, forming solid patches	Fluroxypyr, or dicamba, or quinclorac, or combination of products containing dicamba, or 2,4-D + triclopyr	Spring or fall	Best control when weeds are actively growing. Products containing carfentrazone provide faster burndown of black medic than those without carfentrazone.
Chickweed: Common Stellaria media Mouse ear Cerastium vulgatum Common chickweed is a mat-forming plant with tiny star-like white flowers. Thrives in spring and fall when cool and moist. Mouse-ear chickweed is similar but is perennial, has hairier stems and leaves, and is more tolerant of summer heat.	MCPP or dicamba, or combination of products containing MCPP and dicamba, or or 2,4-D + triclopyr	Spring or fall	Best control when weeds are actively growing.
Chicory Cichorium intybus This somewhat woody perennial has bright blue flowers.	2,4-D, or combination of products containing 2,4-D or MCPA	Spring	Most effective on young weeds.
Cinquefoil Potentilla spp. Pronounced "sink-foil"; this common creeping plant reminds people of wild strawberry. But typically has five-part leaves,	2,4-D + MCPP + dicamba, or 2,4-D + dicamba, or 2,4-D + triclopyr	Spring	Difficult to kill. May require repeat applications

yellow flowers, and no fruit. Thrives in poor soil.			
Clover Trifolium spp. Spreads by creeping stems, forming conspicuous patches. Blossoms attract bees and other stinging insects.	Clopyralid, or fluroxypyr, or dicamba, or quinclorac, or combinations of herbicides containing clopyralid or dicamba, or 2,4-D + triclopyr	Spring, summer, or fall	Best control when weeds are actively growing Combinations of herbicides containing carfentrazone provide faster burndown of clover than those without carfentrazone
Crabgrass: Small (smooth) Digitaria ischaemum Large (hairy) Digitaria sanguinalis This notorious lawn weed consists of two types: smooth and hairy. Both are coarse-bladed, yellow-green in color, and spread out in crab like fashion. They are heavy seed producers. Hot, showery summer weather encourages this pest.	Preemergence control: benefin, or benefin + trifluralin, or bensulide, or bensulide + oxadiazon, or dithiopyr, or oxadiazon, or pendimethalin, or prodiamine, or siduron	Early to mid- spring	Best controlled if herbicides are applied about 2 weeks prior to expected crabgrass germination.
Crabgrass, smooth and hairy	Postemergence control: Fenoxaprop-p- ethyl, or quinclorac, or dithiopyr	Early summer	Apply postemergence products only when crabgrass is visible in the stand. Check labels for temperature and plant development restrictions.

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References

Broadleaf Weed Control in Cool Season Lawns. Matthew Elmore, Rutgers Cooperative Extension Fact Sheet, <u>FS385</u>.

Crabgrass Control in Lawns for Homeowners in the Northern US, Matthew Elmore, Rutgers Cooperative Extension Fact Sheet, <u>FS1308</u>.

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