

UNIVERSITY OF RHODE ISLAND
Plant and Soil Science

Weed Control with Herbicides
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Most weeds in turfgrass can be controlled with chemical weed killers, called herbicides. However, to be successful you must couple good management with the use of herbicides. Maintaining dense, vigorously growing turf will help prevent weed invasion. To do this you should use adapted and improved turf-grasses, properly fertilize, mow and water, control insects and diseases, reduce traffic, etc. If you do not correct the cause of poor turf then new weeds will take over again.

Proper Herbicide Use

There are many herbicides available. To be successful you must select the correct herbicide, follow the directions and precautions and apply it properly. The right amount of material must be used or the weeds will not be killed. Too much chemical can injure the grass. You must follow instructions to get the best results. If it reads, "Do Not Water", and you do, then your herbicide may go down the drain. Apply herbicides when the wind is calm so drift will not damage other plants. To reduce spray drift use low pressure and large size droplets.

Problems have developed with turf fertilizer + herbicide combination materials. Someone may use them as a fertilizer with no regard for the herbicide they contain. Severe damage can result from their use in gardens, flower beds and around trees and shrubs. That extra feeding around shrubs results in extra herbicide which can easily cause damage.

Consider each herbicide as a poison. Read the label. Do not contaminate foodstuffs or water supplies. Store out of reach of children, pets, and livestock. Check laws and regulations in your area concerning the use of herbicides mentioned in this article.

Sterilizing Soil

Weed control can begin before grass is seeded. There are fumigants that will kill weeds and weed seed in the soil. They are valuable for controlling weeds which are difficult to control after a lawn is established. This could include annual bluegrass, bentgrass, quackgrass, nutsedge, etc. Dazomet, methyl bromide, methan and methyl-isothiocyanate are some of the fumigants presently in use. They require warm soil temperatures to be effective. Depending on the material used and other factors, seedings have to be delayed for a few days to three weeks. The disadvantage of fumigation is that (1) materials must be handled carefully as they can be extremely harmful and (2) their use can be costly.

Total Vegetation Kill

There are chemicals that will kill all plants. These are helpful for turf renovation as they persist for only a short time in the soil and one can safely seed within a few days. Materials such as cacodylic acid, paraquat, and sodium arsenite are useful for this purpose. A newer material called glyphosate also appears promising. If residual plant kill is desired for several months and no seeding is contemplated, such as in parking areas, around buildings, etc., one can use a mixture of amitrole + simazine or ammonium sulfamate. Water them gently or work them into the surface soil layer so rain will not wash them into lawn or garden areas.

Weed Control in Seedling Turf

Herbicides are usually not safe to use in new seedings until the grass is about six weeks old and has been mowed about four times. Most annual broad-leaf weeds will be eliminated by regular mowing. However, for heavy infestations of weeds such as ladythumb, pigweed and ragweed, one can use a chemical called bromoxynil. It does not harm seedling grass and is most effective against broad-leaf weeds in the seedling stage. As weeds get older the chemical is less effective. A combination of bromoxynil + dicamba will control a wider range of weeds.

To control annual grasses, such as crabgrass, in new seedings one can use a herbicide called siduron. It is applied to the surface of the seedbed after seeding and before the weedy grasses germinate or emerge. It gives pre-emergent control and is usually applied at half normal rate with the remainder applied a few weeks later.

Control Crabgrass in Established Turf

The easiest and best way to control crabgrass is with pre-emergent herbicides. These are applied before crabgrass seed germinates and the plant emerges. They do not kill established crabgrass plants. Application is usually made in April or at the end of forsythia bloom. Although good results have been obtained from herbicides applied the previous fall, best results are insured by spring application.

Good control with safety to most turfgrasses has been provided by bensulide, DCPA, and siduron. Except for siduron these materials should not be used in seedbeds, on seedling grass, or where re-seeding is necessary within four months. Siduron is still effective if used before crabgrass plants reach the 3-leaf stage.

Crabgrass can also be controlled with post-emergent herbicide treatments. Several methanearsonates are available that can be used after the plants emerge. They work most effectively on younger plants. Two or three applications spaced ten days apart are required. Some turfgrass discoloration is likely. If the plants are less than one inch in height and have not reached the 5-leaf stage then a single treatment with a mixture of methanearsonate + Siduron does well.

Annual Bluegrass Control

There is considerable room for improvement when it comes to the control of annual bluegrass (*Poa annua*). With careful and continued use some of the products available may be effective. There are herbicides such as bensulide, DCPA, and tricalcium arsenate that are used for pre-emergent control. Other materials such as maleic hydrazide and chlorflurenol are used to prevent seed and reduce plant population. Many avenues of management are used to discourage annual bluegrass and promote the desired species. At present there is no simple or easy method for control but considerable effort is being devoted to a solution.

Broadleaf Weed Control

Early fall or spring is the best time to control broadleaf weeds. In early fall the grasses can fill the voids left by weeds before crabgrass season the following spring. For best results weeds and grasses should be growing well at the time of treatment. Herbicides applied during drought or hot weather may injure the grass. Do not mow or water at least 24 hours after treatment.

Broadleaf weeds such as dandelion, plantain, chickweed, etc., are best controlled with post-emergent treatments. Most common weeds such as dandelion and plantain are easily controlled with 2,4-D. However, 2,4-D is not very effective against such weeds as chickweed and clover. To control these one uses dicamba, mecoprop or Silvex. To control most all weeds, use a mixture of 2,4-D with either one or two of the following: dicamba, mecoprop, or silvex. Combinations containing dicamba are very effective but require cautious use under trees or shrubs where root uptake may cause damage. Mixtures containing silvex may cause some injury to bentgrass.

Dicamba or mecoprop can be used to control clover, chickweed or pearlwort in putting-green turf. Knotweed in lawns may best be controlled with mixtures containing dicamba while prostrate spurge may best be controlled with mixtures containing silvex or two applications of various mixtures.

Nullify Harmful Chemical Effects

Activated charcoal has been used on established turfgrass to reduce injury from herbicide misuse, over-dosage, or spillage. The charcoal (300 lb/A) can be applied in water (500 gal/A) as a spray. The sooner one can apply the activated charcoal the better the chance for success. Good results have been obtained where 2,4-D, 2,4,5-T, Bromoxynil, dicamba, endothall, linuron, silvex, and simazine have been improperly used.

Where toxic herbicide residues exist in soil and prevent safe seedings one can add charcoal and rake it into the soil. Improved grass stands have been obtained with charcoal in seedbeds which contained 2,4-D, bandane, benefin, bensulide, DCPA, dicamba, mecoprop, nitratin, picloram, silvex, simazine and terbutol.