Post-emergence control of cool-season weeds

Contact or systemic? Selective or non-selective? Ester or amine? The astute turfgrass manager can make the proper herbicide choices after identifying problem.

Table 1.

POST-EMERGENCE GRASS AND SEDGE CONTROL

Common name	Trade name	Manufacturer	Comments
DSMA	DSMA liquid Methar 30 Broadside, DSMA 81%	Riverdale, Drexel W.A. Cleary Vertac	Controls crabgrass and nutsedge. Repeat applications are needed for nutsedge control. Discoloration may occur in fescue and bentgrass.
MSMA	Daconate 6 Drexar 530 MSMA 6.6	ISK Biotech Drexel Drexel	Controls crabgrass, nutsedge. Repeat applications needed for nutsedge control.
fenoxaprop	Acclaim	Hoechst-Roussel	Can be tank-mixed with residual pre-emergence and post-emergence broadleaf herbicides.
bentazon	Basagran	BASF	Controls only sedges. Repeat applications are necessary.
dithiopyr	Dimension	Monsanto	Can be tank-mixed with Acclaim. Apply to crabgrass with three tillers or less. Can be applied with fluid fertilizer or other registered pesticides.

Source: Dr. Prasanta Bhowmik, Univ. of Mass.

■ The best way to control annual weeds is through a careful cultural program, producing a dense, healthy stand of turfgrass. By paying close attention to proper mowing height and frequency, fertilization and irrigation, annual weeds can be kept to a minimum.

Specific weed problems, then, can often be indications of unfavorable environmental conditions for turfgrass growth, according to Dr. Al Turgeon of Penn State University. In his book "Turfgrass Management," Dr. Turgeon gives instances:

"Large infestations of knotweed frequently occur where severe soil compaction limits turfgrass growth. Ground ivy often invades under trees where insufficient sunlight results in the decline of Kentucky bluegrass and other shade-intolerant turfgrasses. The presence of red sorrel is usually indicative of acid soil conditions."

According to Dr. Prasanta Bhowmik of the University of Massachusetts, a good weed control program consists of the following steps:

1) knowing whether the specific problem is a grassy or broadleaf weed;

2) knowing whether the weed's lifecycle is annual or perennial; and

3) selecting the most effective herbicide.

Post-emergence herbicides can be either contact or systemic. Contact herbicides enter and destroy the parts of the weed plant in which they come in contact. Systemic herbicides are translocated through the plant following absorption and are, therefore, more effective than contact herbicides for controlling perennial weeds, according to Turgeon.

Grassy weeds—Annual grassy weeds, most commonly crabgrass, are probably the biggest weed problem facing landscape managers. The preferred method of crabgrass control is with pre-emergence herbicides. However, when this method does not completely work, post-emergence herbicides must be used.

Post-emergence control of annual grassy weeds is becoming popular because of integrated pest management programs which include scouting for weed presence.

For turfed areas that have not had a history of crabgrass invasion, skipping the pre-emergence application and spot-treating with a post-emergence product could be employed. The advantage of this approach is flexibility and potential cost savings; the drawback is that you must tolerate a certain level of crabgrass before treating.

Until 1987, the only available post-emergence crabgrass material was MSMA. According to Dr. Bruce Branham of Michigan State University, two applications 10 to 14 days apart are required for effective control. In addition, MSMA products can be phytotoxic under summer's hot, humid conditions.

However, a product called Acclaim (fenoxaprop) is now on the market. On young crabgrass (two tillers or smaller), you

can often get 95 percent or higher control, Branham observes.

Broadleaf weeds—Some control of annual broadleaf weeds is obtained from pre-emergence herbicides used for annual grass control. However, complete control is not possible, Dr. Turgeon says; therefore, some post-emergence applications may be required whether pre-emergents are used or not.

A successful post-emergence weed control program for broadleafs is contingent on proper herbicide selection, uniform application and proper dosage. The herbicide selected should depend on the weeds to be controlled and the turfgrass which is to be treated. Mixtures of two to three herbicides are commonly used because the combinations are more effective than any single herbicide.

With the exception of MCPP, 2,4-D is the primary component of most multiple-herbicide mixes. And there are differences in efficacy among the different mixtures. However, the most important factor controlling efficacy is the type of formulation used.

Choose a formulation best suited to your needs. Ester formulations, which are oil soluble, tend to penetrate the leaf better than amines, which are water soluble. So esters are generally better weed control products than are corresponding amines.

According to Dr. Branham, amines should always be used in the spring when plant material is breaking dormancy, actively growing, and very susceptible. Esters can and should be used in the summer when weeds are starting to harden off and are less susceptible; and in the fall when non-target plants are hardening off for the winter and are much less susceptible to injury from volatile broadleaf herbicides.

Most hard-to-control weeds are perennials: wild violet, woodsorrel and ground ivy, for instance. These weeds have extensive root systems, which must be killed. In general, spring herbicide application is standard; but post-emergence herbicides can also be applied in the fall for certain weed species like ground ivy, hawkweed, plantain, wild strawberry and thistles. The fall treatment also controls many seedlings of winter annuals (like common chickweed, corn speedwell and henbit) that germinate in late August or early September.

Non-selectives—Non-selective herbicides are used to control all vegetation and therefore are not normally used in a turf weed control program.

They are, however, useful for edging around trees and for controlling weeds in the cracks of sidewalks and driveways where they are often combined with a pre-emergence herbicide like Surflan to provide long-term residual weed control.

Non-selective herbicides can also be used to control weeds in mulched planting beds or gardens by directing the spray only on the weeds present.

Table 2.

BROADLEAF HERBICIDE MIXTURES FOR POST-EMERGENCE WEED CONTROL

Herbicide	Trade name	Ratio	Manufacturer
2,4-D + MCPP	2 Plus 2	1:1	ISK Biotech
	Lescopar	1:2	Lesco
	2,4-D + MCPP	2:1	W.A. Cleary
2,4-D + 2,4-DP	Chipco Weedone DPC Ester	1:1	Rhone-Poulenc
	Chipco Weedone DPC Amine	1:1	Rhone-Poulenc
	Turf D + DP Ester	1:1	Riverdale
2,4-D + dicamba	8-1 Selective Herbicide	8:1	Lesco
	Riverdale 81 Selective Weed Killer	8:1	Riverdale
	Riverdale 101 Weed Killer	10:1	Riverdale
2,4-D + 2,4-DP + MCPP	Weedestroy Triamine	1:1:1	Riverdale
	Weedestroy Triester	1:1:2	Riverdale
MCPA + MCPP + 2,4-DP	Weedestroy Triamine II	1:1:1	Riverdale
2,4-D + MCPP + dicamba	Three-Way Selective Herbicide	1:5:.009	Lesco
	Trimec Classic	1:5:1	PBI Gordon
	Bentgrass Selective	0.5:1.5:0.2	Lesco
	Triplet	2.44:1.3:0.22	Riverdale
2,4-D + triclopyr	Turflon D Ester	2:1	DowElanco
	Turflon II Amine	2.6:1	DowElanco
triclopyr + clopyralid	Confront Amine	3:1	DowElanco

Source: Dr. Bhowmik

Table 3.

SUGGESTED TREATMENTS FOR HARD-TO-CONTROL BROADLEAFS

Ground ivy *(Glachoma hederacea)*: Use Turflon D, Super Trimec or Weedone DPC. Very difficult to control in summer. Fall application is desirable.

Prostrate knotweed *(Polygonum aviculare)*: Same post-emergents as ground ivy. Summer control difficult.

Creeping speedwell *(Veronica filiformis)*: Use Turflon D, Weedone DPC or Trimec. Several other speedwell species are also difficult to control. Can be controlled with pre-emergence application of Dacthal 6F.

Spurge *(Euphorbia supina)*: Use Turflon D, Trimec or Weedone DPC. Spring or summer application desirable. Can also be controlled with pre-emergence spring application of Dacthal, PreM, Team or Dimension.

Wild violets *(Viola spp.)*: Use Turflon. Usually requires follow-up application in one to four weeks.

Yellow woodsorrel *(Oxalis stricta)*: Use Turflon D, Super Trimec, Weedone DPC, Pre-M, Team or Dimension. Spring application of pre-emergents will control oxalis.

Source: Dr. Bhowmik