

TECH CENTER

Post-emergence weed control in cool-season grasses

For best results, control product applications must be made during the targeted plant's most susceptible growth stage.

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■ Weed control helps make any golf course or landscape management program successful. Effective weed control is achieved by integrating cultural and chemical weed control methods.

Producing a dense, healthy stand of turfgrass is one way to control annual weeds. Proper mowing height and frequency, fertilization, and irrigation are parts of the management program that should be practiced throughout the growing season.

It is important to understand weed control principles, to make economical and environmentally sound decisions. At the same time, however, these decisions must produce good results. Turf managers should be familiar with the following steps for a successful weed control program:

- 1) knowing the specific problem (i.e. grassy weeds vs. broadleaf weeds);
- 2) knowing the life cycle of the weeds (annual vs. perennial); and
- 3) selecting the most effective herbicide.

Grassy weed control—Among annual grassy weeds, crabgrass and goosegrass are considered to be the most troublesome in turf, and are usually controlled with a pre-emergence herbicide program along with a

good cultural program.

Post-emergence control of annual grassy weeds is becoming popular because of integrated pest management programs which use scouting information on weed species and their abundance. Several products are available for post-emergence control on cool-season turfgrass (Table 1).

Broadleaf weed control—A successful post-emergence weed control program results from selecting the right herbicide and applying it uniformly over the foliage at an appropriate dosage. The herbicide selection depends on the weeds to be controlled and the turfgrass to be treated. Choose the most effective herbicide with

maximum safety to the turfgrass. The list of currently-available post-emergence broadleaf herbicides has not changed appreciably from last year (Table 2).



Dr. Bhowmik

Most hard-to-control weeds such as wild violet, wood-sorrel and ground ivy are perennials. Perennials have extensive root systems. For effective control, these root systems must be killed. In order for a herbicide to be effective, it must enter the plant and move through it. Some weed species absorb herbicides rapidly, while others absorb slowly.

The primary route of entry of post-

Table 1

POST-EMERGENCE GRASS AND SEDGE CONTROL

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

Source: Dr. Bhowmik

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emergence herbicides is directly through the leaf surface. Therefore, it is important to have good coverage of the weeds, regardless of their growth stage.

Timing of application: If the application is not timed to coincide with the growth stage which is most susceptible to herbicide treatment, control results may be erratic or poor. In general, spring application of a product containing two or three herbicides is a standard treatment for broadleaf weed control. However, post-emergence herbicides can also be applied in the fall for certain weed species, such as ground ivy, hawkweed, plantain, wild strawberry and thistles. The fall treatment also controls many seedlings of winter annuals, germinating in late August or early September.

Common chickweed, corn speedwell and henbit are among many winter annuals.



Wild violets are difficult to control. A follow-up application is usually required one to four weeks after the first application.

Formulations: Choose a product formulation best suited to your needs. Ester and amine formulations have different activity. Amines are soluble in water, while esters are oil soluble. Esters are generally better weed control products than are corresponding amine products. Esters tend to penetrate into the leaf better than amines. However, esters are slightly volatile. This volatility loss can result in injury to non-target susceptible plants.

For post-emergence broadleaf weed control, mixtures of two to three herbicides are commonly used because the combinations are more effective than any single herbicide in controlling hard-to-control weeds.

Table 3 lists several products for hard-to-control weeds.

—The author is an associate professor of weed science at the University of Massachusetts.

Table 2

COMMONLY USED BROADLEAF HERBICIDE MIXTURES FOR POST-EMERGENCE WEED CONTROL

Herbicide	Trade name	Ratio	Manufacturer
2,4-D + MCPP	2 plus 2	1:1	Fermenta
	Lescopar	1:2	Lesco
	2,4-D-MCPP	2:1	Cleary's
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	Eight-one 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	1:0.5:0.009	Lesco
	Trimec classic	1:0.5:0.1	Gordons
	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	Dow
	Turflon II Amine	2.6:1	Dow
Triclopyr + clopyralid	Confront Amine	3:1	Dow

Source: Dr. Bhowmik

Table 3

SUGGESTED TREATMENTS FOR HARD-TO-CONTROL BROADLEAF WEEDS

Weed	Control product trade name	Comments
Ground ivy (<i>Glachoma hederacea</i>)	Turflon D Super Trimec Weedone DPC	Very difficult to control in summer. Fall application is desirable.
Prostate knotweed (<i>Polygonum aviculare</i>)	Same as ground ivy	Summer control difficult
Creeping speedwell (<i>Veronica filliformis</i>)	Turflon D Weedone DPC Trimec	Difficult to control. Several other speedwell species are also difficult to control.
	Dacthal 6F	Can be controlled with pre-emergence application.
Spurge (<i>Euphorbia supina</i>)	Turflon D Trimec Weedone DPC	Spring/summer application desirable.
	Dacthal PreM, Team, Dimension	Can be controlled with spring application of pre-emergence herbicides.
Wild violets (<i>Viola spp.</i>)	Turflon	Difficult to control; usually requires follow-up app. in 1-4 weeks.
Yellow woodsorrel (<i>Oxalis stricta</i>)	Turflon D Super Trimec Weedone DPC Pre-M, Team, Dimension	Spring applications of pre-emergence herbicides will control oxalis.

Source: Dr. Bhowmik