

WHAT'S NEW IN WEED CONTROL PROGRAMMING?

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Weed control herbicides for the turf market are changing at a faster pace than has been seen in the past. This paper will discuss changes in broadleaf weed control and in preemergent and postemergent grass control.

A change has occurred in the last three years in broadleaf herbicides. Ester formulated herbicides are regaining popularity. Esters are formed by reacting an alcohol with an acid (e.g. 2,4-D) to form the ester. Esters are effective in penetrating the plant rapidly and have good overall efficacy, the chief disadvantage of esters is their volatility and subsequent potential for economic injury to non-target plants. Amine formulations are generally non-volatile but are not as efficacious as the esters.

The potential for volatility damage, is highest in the spring when ornamental trees and plants are budding out. It is the author's view that ester formulations should be avoided in the spring of the year to minimize volatility damage. In the summer and fall, however, non-target plants are less susceptible to phenoxy damage and the better efficacy of esters warrant their use in this time period. In choosing an ester formulation, one should always use the low volatile ester formulations made from long chain alcohols. In general, most ester formulations on the market today are considered low volatile formulations.

Relatively new ester formulations include Weedone DPC, Super Trimec and Turflon D. Weedone DPC is a 1:1 mixture of 2,4-D and 2,4-DP. Super Trimec is a 1:1:0.25 mixture of 2,4-D, 2,4-DP, and dicamba. Turflon D is a 2:1 mixture of 2,4-D and triclopyr. Turflon D is the only product containing a new herbicide for turf. Triclopyr is a relatively new, non-phenoxy herbicide that has good activity on a number of turf weeds. Triclopyr is fairly effective on wild violet when used alone. Data in Tables 1-3 compare some of the new herbicides available to the industry standards.

One area that has been lacking for good herbicides is that of postemergent control for annual grasses. For years, the only choice has been the methanearsonate class of herbicides. This year a new postemergent grass herbicide called Acclaim (common name - fenoxypopethyl) should be available in 1986. Acclaim is an effective, single application postemergent herbicide providing good control of crabgrass and goosegrass. Acclaim has good tolerance on most of the cool season grasses with the exception of bentgrass.

Another new herbicide is available for preemergent annual grass control with the common name of pendimethalin. Pendimethalin is commercially available from two different vendors for the turf market. Pendimethalin is a dinitroaniline herbicide with a long soil residual. As well as grassy weeds, it is labeled to control a number of broadleaf weeds including chickweed, oxalis, and prostrate spurge. Data in Table 4 shows the results from pendimethalin applications obtained in our research trials in 1985.

TABLE 1. Canada thistle control (*Cirsium arvense* L.)

Herbicide	rate (lbs ai/A)	% control
Turflon D	1.0 + 0.5	98.7
Super Trimec	0.75 + 0.75 + 0.18	7.0
Weedone DPC + Bucril	0.75 + 0.5	93.3
Turflon amine	0.5 + 1.3	92.7
Weedone MCPP	1.5	91.7
Formula 40	1.0	91.3
Esteron	1.0	88.0
Weedone DPC	0.92	85.7
Turflon amine	0.38 + 1.0	84.7
Garlon 4	0.5	84.0
Bucril	2.0	74.7
check	---	43.3
Starane	0.5	34.0
Starane	0.2	29.0

LSD. = 16.1 .05

treated 8-16-85; temperature: 65 F
 9-20-85; temperature: 68 F
 final rating 10-18-85

Table 2. Speedwell species *Veronica serpyllifolia*

Herbicide	rate (lbs ai/A)	% control
Dacthal 50 wp	10.5	87.3
Turflon D	1.0 + 1.5	70.0
Garlon 4	0.5	60.3
Bucril	2.0	57.3
Starane	0.5	48.3
Starane	0.25	26.0
Weedone DPC + Bucril	0.75 + 0.5	20.0
Turflon amine	0.5 + 1.3	14.3
Fsteron	1.0	12.0
Weedone DPC	0.92	9.0
Super Trimec	0.75 + 0.75 + 0.18	7.0
check	---	5.3
Weedone MCPP	1.5	5.3
Formula 40	1.0	0.0

LSD = 38.0 .05

treated 7-19-85; temperature: 67 F final rating 10-22-85

TABLE 3.

White clover control (*Trifolium repens* L.)

Herbicide	rate (lbs ai/A	% control
Starane	0.5	99.3
Super Trimec	0.75 + 0.75 + 0.18	99.0
Garlcn 4	0.5	63.3
Starane	0.25	62.3
Turflon D	1.0 + 0.5	57.7
Weedone DPC	0.92	53.7
Weedone DPC + Bucril	0.75 + 0.5	50.0
Weedone MCP	1.5	41.0
Turflon amine	0.38 + 1.0	40.3
Formula 40	1.0	20.7
check	---	20.0
Esteron	1.0	16.7
Turflon amine	0.5 + 1.3	13.3
Bucril	2.0	0.0
LSD	= 60.8	.05

treated 7-12-85; temperature: 72 F final rating 9-5-85

TABLE 4. 1985 Preemergent Trial Results.

<u>Treatment</u>	<u>Rate</u>	<u>Injury*</u>		
		<u>5/30</u>	<u>7/18</u>	<u>8/20</u>
Dacthal 75WP	7.5 lbs AI/A	9.0	0	0
Dacthal 75WP	10.5 lbs AI/A	9.0	0	0
Dacthal 75WP	10.5 lbs AI/A	9.0	0	0
Ronstar 50/WP	4 lbs AI/A	8.0	0	0
Ronstar 50WP	8 lbs AI/A	6.7	0	0
EH 850	12 lbs AI/A	9.0	0	0.3
Ronstar 50WP	4 lbs AI/A	8.7	0	0.7
Team 2G	2 + 2 lbs AI/A	8.3	0	0.7
Betasan 4E	10.5 lbs AI/A	9.0	0	0.7
Balan 2G	2 + 2 lbs AI/A	9.0	0	1.0
Pendimethalin 60WDG-L	1 + 1 lbs AI/A	8.0	0	1.0
Betasan 4E	10.5 + 7.5 lbs AI/A	9.0	0	1.7
Betasan 2.2 S	7.5 lbs AI/A	9.0	0	2.7
EH 850	8 lbs AI/A	9.0	0.3	2.7
Balan 2G	2 lbs AI/A	8.7	0	3.3
EH 850	4 lbs AI/A	9.0	0.3	3.3
Pendimethalin 60 WDG-L	3 lbs AI/A	6.0	0	3.3
Betasan 4E-LF	12.5 lbs AI/A	9.0	0	3.7
SN594 7EC	2 lbs AI/A	6.3	0	4.3
Pendimethalin 60WDG-S	1.5 lbs AI/A	6.7	0	5.0
Check		9.0	0.3	5.0
Pendimethalin 60 WDG-S	2 lbs AI/A	6.0	0.3	6.0
Ronstar 2G	4 lbs AI/A	9.0	0.3	7.0
Pendimethalin 60 WDG-L	1 lb AI/A	8.0	0.0	7.7
Betasan 4E	7.5 + 3.8 lbs AI/A	9.0	0.3	8.3
Ronstar 2G	2.0 lbs AI/A	9.0	2.3	10.0
Betasan-Devrinol 7.5-1.5 G	65 lbs/A	9.0	3.7	10.0
Betasan 4E-LF	7.5 lbs AI/A	9.0	2.0	10.0
Betasan-Devrinol 7.5-1.5 G	100 lbs/A	9.0	5.3	11
Betasan 2.2 S	7.5 lbs AI/A	9.0	0.7	11
Betasan 2.2 S	12.5 lbs AI/A	9.0	2.0	11.7
Pendimethalin 60 WDG-L	1.5 lbs AI/A	8.0	0	11.7
Check		9.0	3.3	15
SN594 7EC	1 lb AI/A	8.7	5.0	23.3
SN594 7EC	4 lbs AI/A	5.7	6.7	25.0
SN594 7EC	6 lbs AI/A	4.0	6.7	25.0
	LSD	1.0	3.8	10.2

*Injury ratings on a scale of 1-9 with 9 = no damage and 1 = complete kill.