Stop #12

1990 Postemergence Crabgrass Trial

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This year's postemergence crabgrass trial was conducted on a 'common' Kentucky bluegrass turf. The site was seeded in the fall of 1989 and was 50-60% established by the spring of 1990. The turf received 0.5 lb N/1000 ft^2 in May. Supplemental irrigation has been applied as needed to prevent drought stress. The study is mowed twice weekly at 1.5 inches. Crabgrass seed was sowed into the existing turf in April to supplement the natural population. All herbicides were applied with a CO_2 backpack sprayer delivering 57 gpa. Since growth stage is a critical factor in crabgrass control, treatments were applied at the 2-3 leaf (early post), 2-3 tiller (mid post), and 3-6 tiller (late post) stages.

The relatively cool spring and summer we have experienced have not been favorable to crabgrass growth, consequently the overall level of control with the various products has been better than normal.

Acclaim continues to perform very well; however, to achieve extended control (beyond 4 weeks or so) with this product, it should be combined with a preemergence herbicide such as pendimethalin or Team. Some injury to the Kentucky bluegrass was noted with Acclaim, signalling a drawback in the use of this product.

BAS 514, an experimental compound from BASF, gives outstanding control even when applied to 3-6 tiller crabgrass. Control appears to be longer-lived than with Acclaim. This product is also very fast acting.

The product, Acclaim, is a mixture of two isomers of the active ingredient, fenoxaprop-ethyl. An experimental compound tested this year as HOE 46360 is the single, herbicidally active isomer of fenoxaprop-ethyl and as such its use rate is approximately 1/2 of normal Acclaim rates. HOE 46360, from Hoechst-Roussel, gave outstanding control on tillered crabgrass at very low dosages. However, injury to the Kentucky bluegrass was very evident.

Monsanto's dithiopyr (trade name - Dimension) is a promising product slated to arrive on the market in 1991. Dithiopyr is an excellent, long-lasting preemergence herbicide which also has very good early postemergence crabgrass activity. A major focus of our crabgrass efforts this summer has been to attempt to enhance this postemergence activity through the use of adjuvants. No benefit was observed by adding adjuvants to dithiopyr applied early-post. However, significantly better control was achieved with several of the adjuvants at the mid-post applications. Control was also markedly increased by adding some of the adjuvants to dithiopyr applied late-post. The late-post increases were not statistically significant; however, these ratings were taken only two weeks after treatment, and, since dithiopyr is a relatively slow-acting compound, we may expect to see statistically significant adjuvant effects at 3-4 weeks after treatment and beyond. At this point, none of the adjuvants clearly stand out above the rest, but some of the more promising appear to be the two Dow-Corning products (F and X2-5309 in Table 6) and Central Soya 12. Notably, no injury to Kentucky bluegrass has been observed by adding any of the adjuvants to dithiopyr.

Table 6. Postemergence crabgrass control with herbicides and adjuvants.

Treatment	Rate (lbs ai/A)	2 WAT	4 WAT	8 WAT
Growth Stage: 2-3 leaf Application Date: 6-14-90				
BAS 514 + 090	0.75 + 1 qt/A		100 a	99
BAS 514 + 090	1.0 + 1 qt/A		100 a	100
Acclaim + Pendimethalin	0.08 + 1.5		97 ab	95
Dithiopyr + X-77	0.25 + 0.5% V/V		92 a-c	92
Dithiopyr	0.38		90 a-d	94
Dithiopyr + Activator 90	0.38 + 0.5% V/V		90 a-d	86
Dithiopyr + Central Soya 12	0.38 + 0.5% V/V		90 ad	88
Dithiopyr + Dow Corning F	0.38 + 0.5% V/V		90 a-d	90
Acclaim + Team	0.12 + 0.75		90 a-d	90
Dithiopyr + Herbimax	0.38 + 0.5% V/V		90 a-d	91
Dithiopyr + Dash	0.38 + 0.5% V/V		87 a-e	95
Dithiopyr + X-77	0.38 + 0.5% V/V		87 a-e	88
Dithiopyr + Agsco Sun-it	0.38 + 0.5% V/V		87 A-e	94
Acclaim	0.18		87 a-e	51
Dithiopyr + Phizer 7	0.38 + 0.5% V/V		87 a-e	92
Acclaim + Pendimethalin + Confront	0.08 + 1.5 + 1.5 pts/A		87 a-e	79
Dithiopyr + X2-5309	0.38 + 0.5% V/V		87 a-e	82
Dithiopyr + Activator 90	0.25 + 0.5% V/V		84 a-f	75
Acclaim	0.12		82 a-f	65
Dithiopyr + X-77	0.50 + 0.5% V/V		81 a-e	93
Dithiopyr + Activator 90	0.12 + 0.5% V/V		79 a-f	50
Dithiopyr + X-77	0.12 + 0.5% V/V		77 a-f	64
Pendimethalin	1.5		58 d-g	50
Dithiopyr + Phizer M	0.38 + 0.5% V/V		57 e-g	62
Control			0 h	0
Control			0 h	0
Control			0 h	0
Control			0 h	0
Growth Stage: 2-3 tillers Application Date: 7-10-90				
HOE 46360 EC	0.09	98	100 a	
BAS 514 + 090	0.75 + 1 qt/A	100	100 a	
BAS 514 + 090	1.0 + 1 qt/A	100	100 a	
HOE 46360 EW	0.06	100	99 ab	
HOE 46360 EC	0.06	100	99 ab	
HOE 46360 EC	0.12	98	99 ab	
HOE 46360 EW	0.04	96	99 ab	
HOE 46360 EW	0.07	100	99 ab	
HOE 46360 EW	0.09	100	98 ab	
Dithiopyr + Dow Corning F	0.38 + 0.5% V/V	96	97 a-c	
Acclaim	0.18	98	96 a-d	
Dithiopyr + Central Soya 12	0.38 + 0.5% V/V	86	96 a-d	
Dithiopyr + X2-5309	0.38 + 0.5% VV	98	96 a-c	

Table 6 cont. Postemergence crabgrass control with herbicides and adjuvants.

Treatment	Rate (lbs ai/A)	2 WAT	4 WAT	8 WAT
Growth Stage: 2-3 leaf Application Date: 7-10-90				
Dithiopyr + X-77	0.38 + 0.5% V/V	89	94 a-d	
MSMA**	2.0 + 2.0	92	93 b-d	
Dithiopyr + Activator 90	0.38 + 0.5% V/V	89	92 a-d	
Dithiopyr + Agsco Sun-it	0.38 + 0.5% V/V	96	92 b-e	
Dithiopyr + Herbimax	0.38 + 0.5% V/V	94	91 b-e	
Dithiopyr + Phizer 7	0.38 + 0.5% V/V	92	89 b-e	
Dithiopyr + Actvator 90	0.25 + 0.5% V/V	90	86 c-f	
Dithiopyr + Phizer M	0.38 + 0.5% V/V	94	81 d-f	
Dithiopyr	0.38	73	72 ef	
Dithiopyr + Dash	0.38 + 0.5% V/V	61	65 fg	
Dithiopyr + Activator 90	0.12 + 0.5% V/V	70	64 fg	
MSMA	2.0	58	45 g	
Control		0	0 h	
Control		0	0 h	
Control		0	0 h	
Control		0	0 h	
Growth Stage: 3-6 tillers Application Date: 8-1-90				
Acclaim	0.25	93 a		
Dithiopyr + Phizer M	0.38 + 0.5% V/V	69 ab		
Dithiopyr + Herbimax	0.38 + 0.5% V/V	64 ab		
Dithiopyr + Phizer 7	0.38 + 0.5% V/V	63 ab		
Dithiopyr + Central Soya 12	0.38 + 0.5% V/V	60 ab		
Dithiopyr + X-77	0.38 + 0.5% V/V	59 ab		
Dithiopyr + X2-5309	0.38 + 0.5% V/V	56 a-c		
Dithiopyr + Dow Corning F	0.38 + 0.5% V/V	54 a-c		
Dithiopyr + Dash	0.38 + 0.5% V/V	51 a-c		
Dithiopyr + Agsco Sun-it	0.38 + 0.5% V/V	46 bc		
Dithiopyr + Activator 90	0.38 + 0.5% V/V	46 bc		
Dithiopyr + Activator 90	0.25 + 0.5% V/V	40 bc		
Dithiopyr	0.38	31 bd		
Dithiopyr + Activator 90	0.12 + 0.5% V/V	24 cd		
Control		0 d		
Control		0 d		
Control		0 d		
Control		0 d		

*The arcsin transformation was performed on the data and the LSD multiple range test was performed on the transformed data. Means followed by the same letter are not significantly different at p=0.05.

**Applied as a sequential 2 weeks apart.