Stop #1

1991 Postemergence Crabgrass Trial

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Proper turfgrass management includes consistent and effective crabgrass (*Digitaria* spp.) control. Typically, this is achieved with preemergence herbicides, however, failure of these herbicides is well known due to variable environmental conditions and misapplication. Still, the ability of a postemergence herbicide to provide consistent control is largely dependent on proper application timing.

The recent registration of dithiopyr (MON 15151 or 15104-trade name: *Dimension*) and Experimental Use Permit (EUP) with BAS 514 (quinchlorac proposed trade name: drive) could enhance the turf manager's ability to control crabgrass as effective application timing, potential tank mixes, and suitable adjuvants are determined. We evaluated the efficacy of several experimental and industry standard postemergence herbicides for crabgrass control in a "Newport" Kentucky bluegrass turf.

The turf was mowed twice weekly at 1 inch and irrigated to prevent moisture stress. Herbicide applications were made with a CO_2 backpack sprayer fitted with flat fan nozzles calibrated to deliver 57 gallons per acre (GPA). To investigate the influence of crabgrass growth stage on herbicide efficacy, treatments were applied when plants were 2-3 leaf (early post), 2-3 tillers (mid-post), or 3-6 tillers (late post) stages.

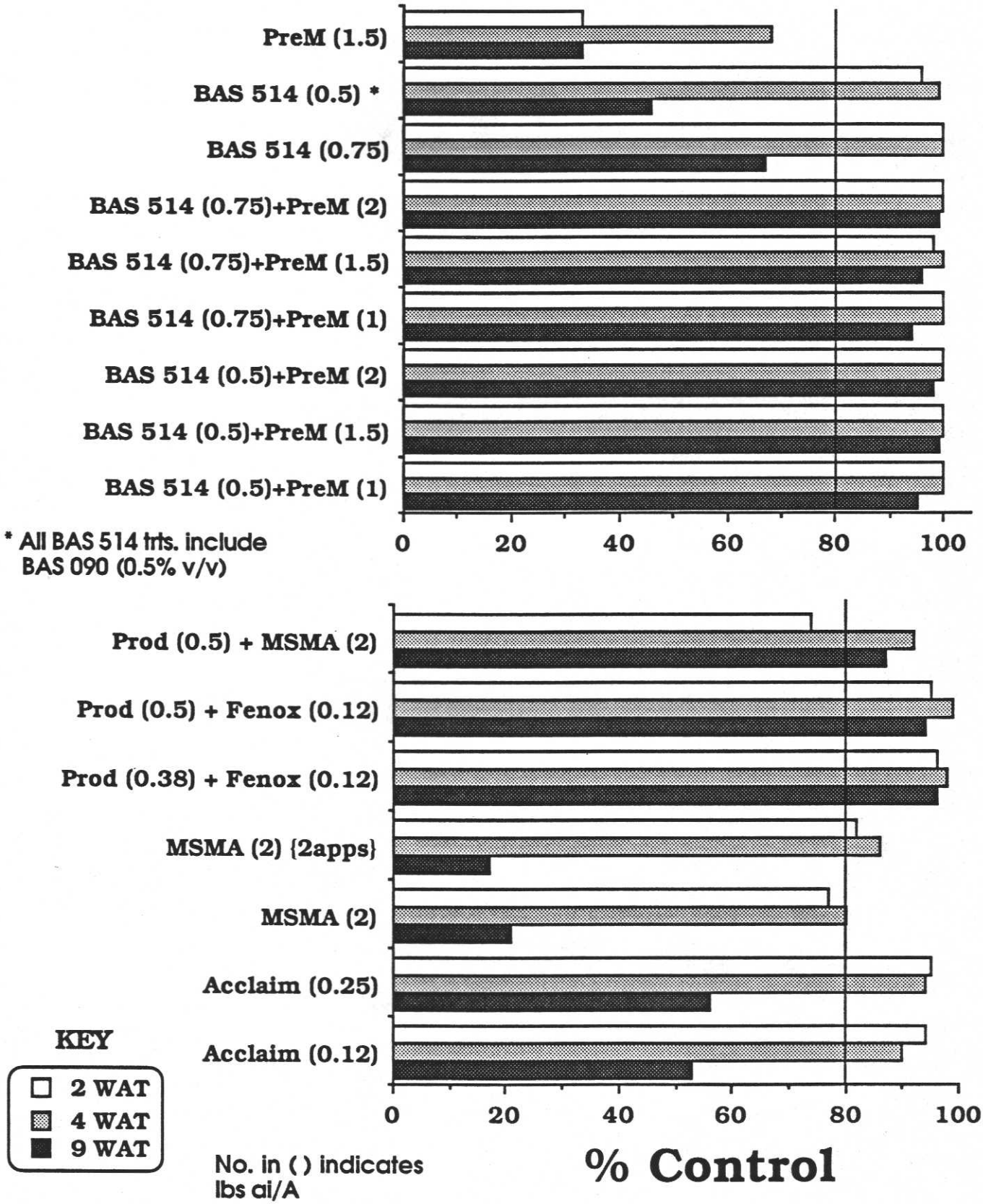
BAS 514 (quinchlorac) provided excellent early post control applied alone, however, a decline in control was evident 9 weeks after treatment (WAT). The tank mix combination of 514 and PreM (pendimethalin), applied early post, gave excellent control throughout the 9 week period. The same combination applied mid-post initially was excellent, then, significantly declined, in some cases below acceptable control (>80%). The benefit of extended preemergence control is evident at the early timing, although, there appears to be some type of rate response to the PreM at the mid-post timing. This combination has potential to provide effective and economically feasible crabgrass control.

Fenoxaprop (*Acclaim*) provided excellent control particularly when applied alone mid post. Early post control with fenoxaprop substantially declined after 9 weeks when not tank mixed with a pre, such as prodiamine. Two experimental formulations of the active isomer of fenoxaprop provided excellent mid-post control at 0.09 lb ai/A (less than 1/2 the *Acclaim* label rate) after 7 weeks. Excellent control with fenoxaprop is most likely due to actively growing plants at the time of application, and no further germination.

Research initiated in 1990 was repeated with dithiopyr applied in combination with several adjuvants. In contrast to last year, there was a significant benefit from the addition of adjuvants on dithiopyr efficacy at the early post timing. For example, the two Dow Corning products as well as Activator 90 and CSY-13, significantly enhanced control as compared to either the 15151 or 15104 applied alone. Additionally, the 15151 formulation (which is the commercially available product) applied alone provided significantly better control than the 15104. In general, mid-post-applications gave enhanced control at 7 WAT when compared to early post treatments at 9 WAT. This demonstrates that adjuvants do enhance dithiopyr postemergence activity and, based on the mid-post results, indicates that mid post-applications would be preferable to early.

Early Postemergence Crabgrass Control

Treatments Applied: 6-15-91
Growth Stage: 2-3 Leaf

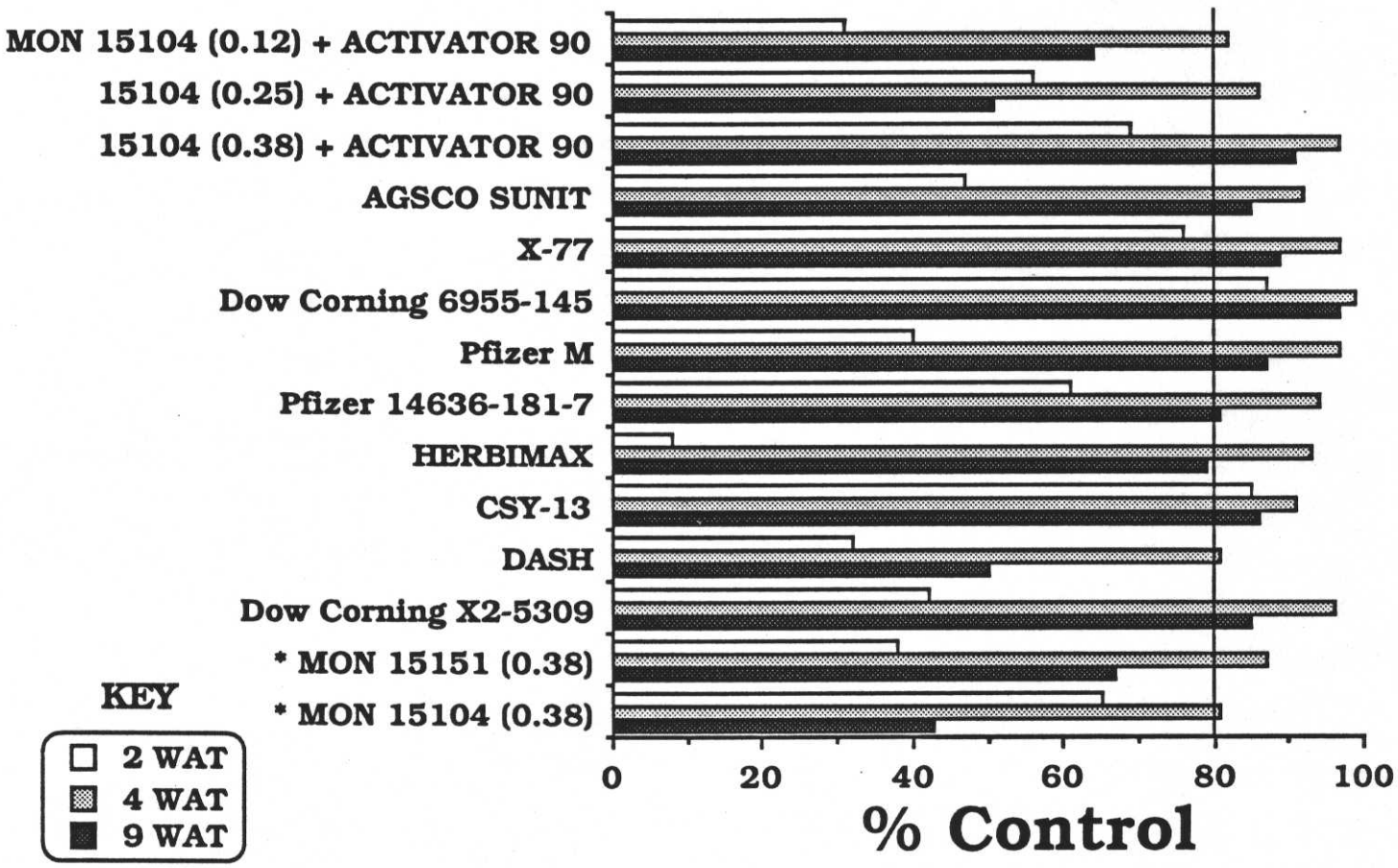


* All BAS 514 trts. include BAS 090 (0.5% v/v)

No. in ( ) indicates lbs ai/A

Early Postemergence Crabgrass Control

Treatments Applied: 6-15-91
Growth Stage: 2-3 Leaf

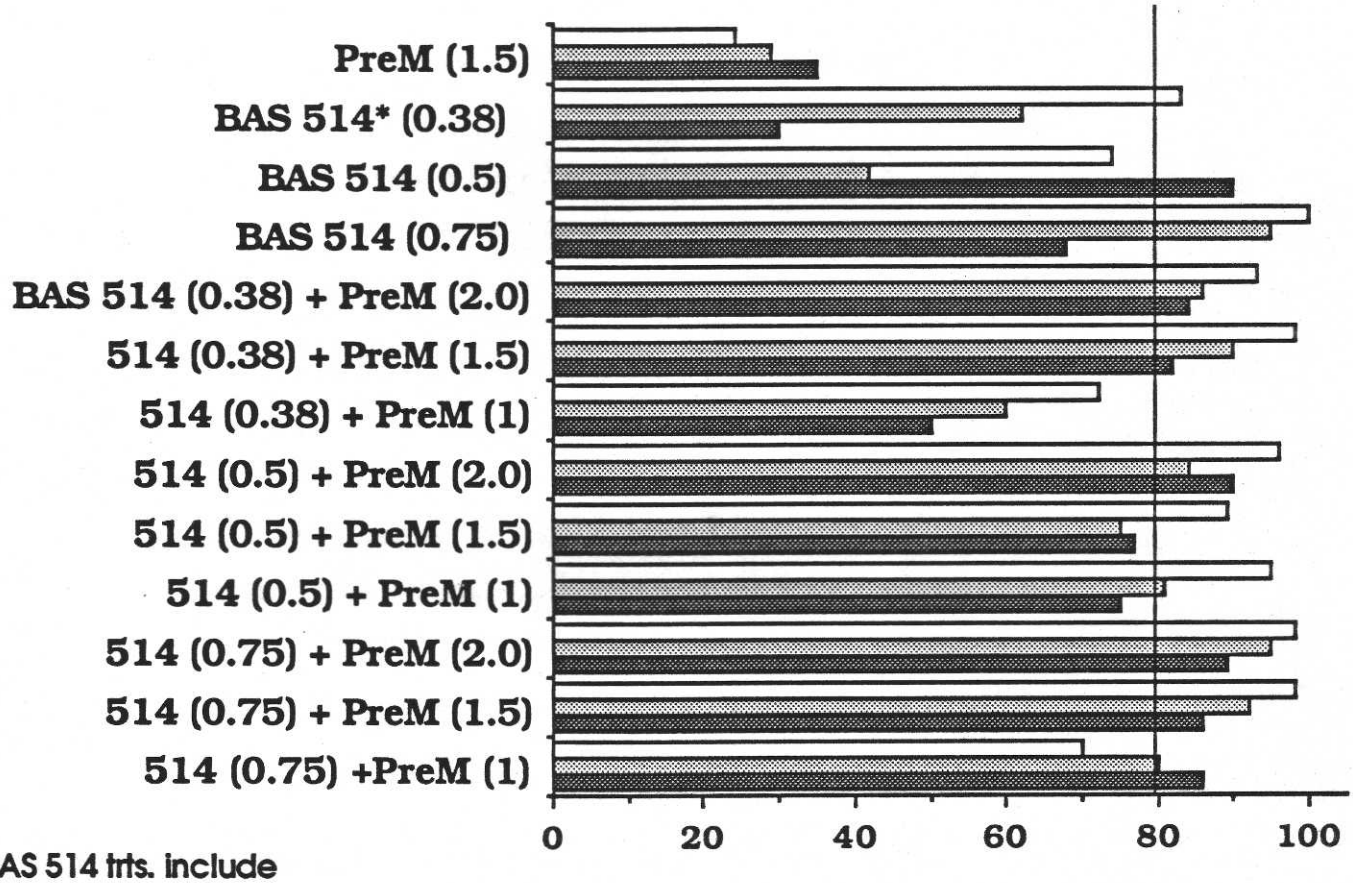


No. in ( ) indicates
lbs ai/A

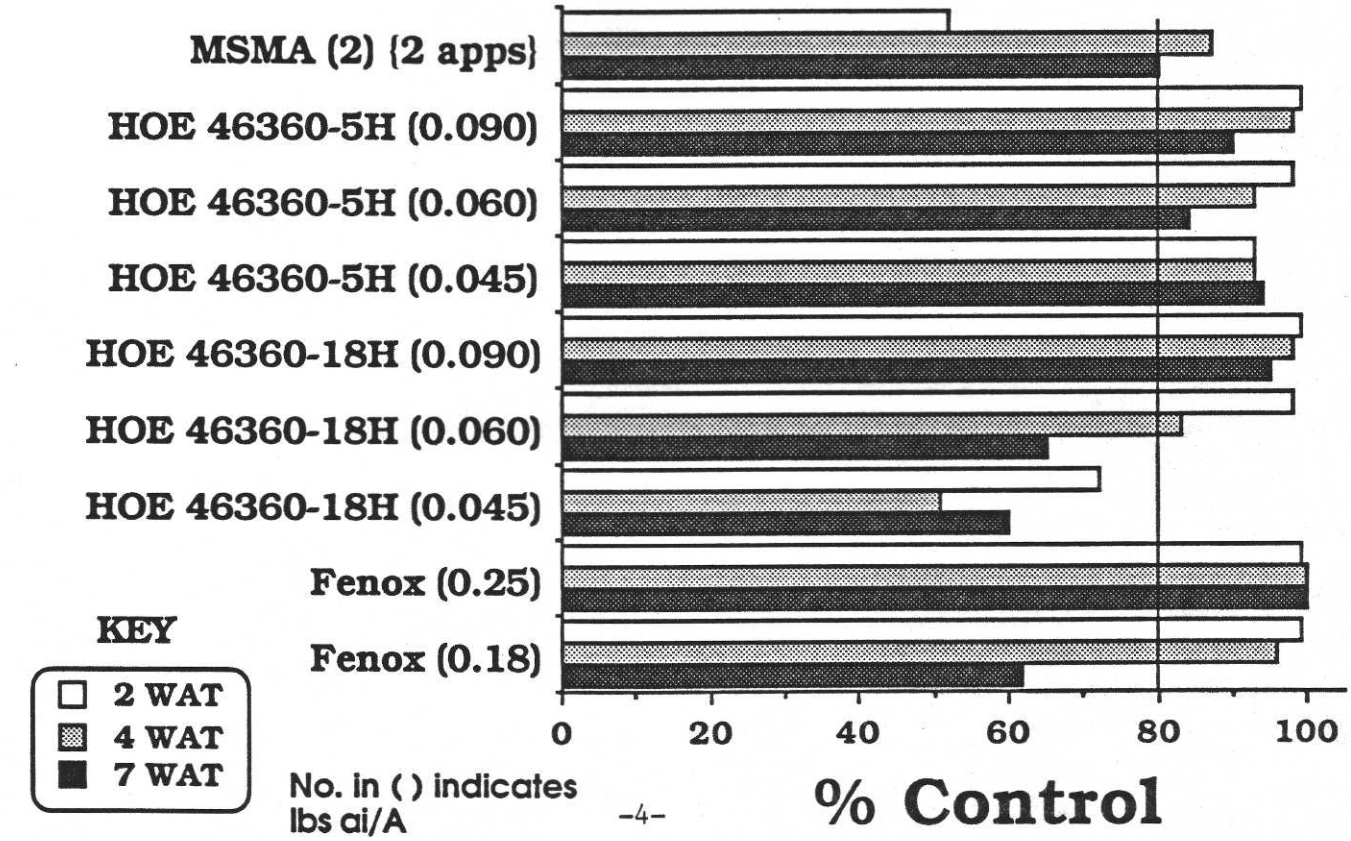
* Formulation Comparison.
Materials applied without
Adjuvant

Mid-Postemergence Crabgrass Control

Treatments Applied: 7-10-91
Growth Stage: 2-3 Tillers



* All BAS 514 trts. include BAS 090 (0.5% v/v)



No. in ( ) indicates lbs ai/A

Mid-Postemergence Crabgrass Control

Treatments Applied: 7-10-91
Growth Stage: 2-3 Tillers