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UTILITY OF STAPLE® HERBICIDE PREEMERGENCE AND POSTEMERGENCE IN SOUTH GEORGIA *"A CONSULTANTS PERSPECTIVE"*

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Abstract

Cotton weed management in southern Georgia is affected by variable soil texture, soils pH, low cation exchange capacity, organic matter content and dryland vs. irrigated production. Conventional and reduced tillage production is common and each system presents specific weed management challenges. An abundance of annual broadleaves, sedges, annual and perennial grasses, suggest no single herbicide program will provide adequate weed control.

Two sites were selected to evaluate preemergence followed by postemergence weed control with Staple®, *pyrithiobac sodium, herbicide*. At plant applications were made with pyrithiobac alone at 0.67 oz ai and in combination with *fomesafen (Reflex®)* 0.25 lb ai, *diuron*, (Karmex®) 1.0 lb ai and with *fluometuron*, (Cotoran ®) at 1.25 lb ai Fluometuron at 1.5 lb ai was used as the preemergence standard. All pyrithiobac treatments were followed at early POST over the top with pyrithiobac (Staple®) at 1.0 oz ai and MSMA at 0.75 lb ai The fluometuron PRE standard was followed by fluometuron at 1.0 lb ai + MSMA at 2.0 lb ai post directed.

Weed control and crop tolerance were compared on two sites for the pyrithiobac treatments and standard. The first site was characterized as a low organic matter, coarse textured loamy sand with low weed density. Purple nutsedge, eclipta, sicklepod, coffee senna, and smallflower morningglory were the species evaluated. The second site was considered a medium textured sandy loam soil with high weed density. Both purple and yellow nutsedge, eclipta, pitted morningglory, smallflower morningglory, sicklepod, coffee senna, Florida beggarweed, hyssop spurge, bristly starbur, and smooth groundcherry were evaluated. Both crop response and weed control were evaluated initially at 7 days after PRE and POST applications then at weekly intervals until canopy closure. Crop response and weed control ratings were summarized and treatments ranked based on overall weed control for the duration of the test.

Crop response was negligible, less than 10%, at both test sites with preemergence pyrithiobac treatments and the fluometuron standard. No significant differences were noted with pyrithiobac treatments alone or in combinations with fomesafen, diuron, or fluometuron. The fluometuron + MSMA post direct standard had the highest postemergence crop injury rating; however, crop injury was transient and not noted to have impacted cotton growth at row closure.

Weed control was similar with all pyrithiobac treatments PRE and followed with pyrithiobac + MSMA POST over the top. There were only numerical differences in overall weed control in both the coarse soil low weed density and the medium texture soil with high weed density. Overall, the Staple 0.67 oz ai + Cotoran 1.25 lb ai PRE fb Staple 1.0 oz ai + 0.75 lb ai MSMA gave the highest overall weed control percentages when averaged across both sites. Compared to the standard fluometuron treatments, pyrithiobac PRE followed by POST treatments increased control of eclipta, coffee senna, hyssop spurge, pitted morningglory, smallflower morningglory, yellow nutsedge, and purple nutsedge.

Results from these trials support the utility of pyrithiobac soil applied and postemergence treatments. Good to excellent cotton tolerance was demonstrated on coarse and medium textured soils. Preemergence residual followed by postemergence burndown with residual was demonstrated on a diverse group of broadleaf species and the two predominant perennial sedge species. Combination with fluometuron and diuron are labeled and can be selected based on weed species to be controlled or on cost considerations. Pyrithiobac PRE combinations with fomesafen, when a federal cotton tolerance is granted will also provide good crop tolerance and broad spectrum weed control utility.