

**COTTON RESPONSE TO POSTEMERGENCE PENDIMETHALIN,
METOLACHLOR, DIMETHENAMID, AND TRIFLOXYSULFURON-SODIUM**
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Abstract

Producers are interested in the possibility of tank-mixing pendimethalin, metolachlor, dimethenamid, and trifloxysulfuron-sodium with glyphosate as overtop postemergence sprays. The objective of this research was to determine the potential for cotton injury from these tank mixtures at different application timings. Paymaster 1218 BR cotton was used in all studies. All studies were planted without tillage between Apr 15 and May 1 with applications made in May or early June. All herbicides were applied at labeled postemergence or preemergence rates based on soil type. Prowl was also applied at twice labeled rates to determine level of tolerance.

Prowl tank-mixed with glyphosate injured cotton. The Prowl EC formulation was more injurious than the new Prowl H₂O formulation. Prowl applied at the one-leaf stage was more injurious than at the four-leaf stage, with lint yield and percent first harvest also being reduced at the one-leaf stage. Dual II Magnum did not reduce cotton lint yield, but yield was reduced 15% by Outlook. The order of cotton safety when tank mixed with glyphosate is Dual II Magnum = Outlook >>Prowl EC > Prowl H₂O.

Cotton yield was reduced from 5 to 26 % from Envoke postemergence at 0.1 to 0.2 oz/acre over a 3-year study. Injury increased with higher rates. Injury appeared as stunted plants with reduced height-node ratios. Cotton > 5 leaf exhibited less injury and yield reductions ranged from 2 to 14%. Post-directing eliminated cotton injury and yield loss. For comparison, Staple postemergence at 1.2 oz/acre did not reduce cotton yield.