Cotton Tolerance and Weed Control with Preplant Applications of Thifensulfuron Plus Tribenuron

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Successfully controlling weeds before planting cotton (*Gossypium hirsutum* L.) in reduced tillage systems enables growers to prevent early-season weed interference. Research was conducted in Louisiana to determine cotton tolerance of thifensulfuron plus tribenuron (2:1 ratio based on weight) at combined rates of 13, 26, 53, and 105 g ha^{-1} applied 0, 7, 15, 30, and 45 d before planting. In additional experiments, efficacy of glyphosate and paraquat applied alone or with thifensulfuron plus tribenuron was evaluated for Carolina geranium (*Geranium carolinianum* L.), curly dock (*Rumex crispus* L.), cutleaf eveningprimrose (*Oenothera laciniata* Hill), Italian ryegrass (*Lolium multiflorum* Lam.), and Pennsylvania smartweed (*Polygonum pensylvanicum* L.) control. When applied at 13 g ha^{-1}, thifensulfuron plus tribenuron did not injure cotton, regardless of the interval between application and planting. Thifensulfuron plus tribenuron at 26, 53, and 105 g ha^{-1} injured cotton when applied the day of planting, and the highest rate reduced seed cotton yield. Cotton was not injured and yield was not reduced when thifensulfuron plus tribenuron was applied 15 d or more before planting, regardless of rate. When applied at the rate recommended by the manufacturer (15-30 g ha^{-1}), thifensulfuron plus tribenuron did not affect cotton yield, even when applied the day of planting. Thifensulfuron plus tribenuron alone controlled only Pennsylvania smartweed 28 d after treatment (86-93%). Thifensulfuron plus tribenuron mixed with glyphosate or paraquat improved control of Carolina geranium, curly dock, and cutleaf eveningprimrose compared with glyphosate or paraquat alone. Paraquat reduced control of curly dock by thifensulfuron plus tribenuron.

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