EFFECTIVENESS OF PREEMERGENCE HERBICIDES IN COTTON

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Abstract

Weed management is a critical component to successful cotton production. The period between cotton emergence and early growth and development is a vulnerable time when weed-free conditions are needed to avoid competition for consumable environmental resources such as light, water, and nutrients. Preemergence herbicides are an important component of effective early season weed management. In this study, the effectiveness of preemergence herbicides in a densely populated field of Palmer amaranth was examined at the Texas A&M AgriLife Research and Extension Center in Halfway, TX. Eleven preemergence treatments (Brake at 16 fl. oz./A; Caparol at 38.4 fl. oz./A; Brake plus Caparol; Cotoran at 32 fl. oz./A; Direx at 32 fl. oz./A; Dual Magnum at 21.3 fl. oz./A; Outlook 16 fl. oz./A; Prowl H2O at 33.7 fl. oz./A; Reflex at 16 fl. oz./A; Reflex at 10 fl. oz/A plus Caparol; and Warrant at 48 fl. oz./A) were applied with a CO_2-pressurized backpack sprayer immediately after planting cotton. The treatments were activated with 0.5 inches of overhead broadcast irrigation two days after planting (DAP). Outlook, Reflex, and Brake plus Caparol controlled Palmer amaranth 98-100% 14 DAP. At 28 and 42 DAP, Brake plus Caparol, Dual Magnum, Outlook, Reflex, and Reflex plus Caparol controlled Palmer amaranth at least 90%. By 63 DAP, Dual Magnum, Outlook, and Reflex maintained at least 90% control of Palmer amaranth. Several preemergence herbicides controlled Palmer amaranth to 63 days after planting, while control from other herbicides rapidly declined within this time period. Following all preemergence herbicides, properly timed postemergence applications will be needed to achieve season-long weed control.