MANAGEMENT OF PALMER AMARANTH IN WEST TEXAS USING RESIDUAL HERBICIDE SYSTEMS Rand M. Merchant Misha R. Manuchehri Peter A. Dotray Texas Tech University Lubbock, TX Wayne K. Keeling Texas A&M AgriLife Extension Service Lubbock, TX

Abstract

Cotton (Gossypium hirsutum) is the major agronomic crop of West Texas with over 4.1 million acres planted in 2013. Glyphosate-resistant Palmer amaranth (Amaranthus palmeri) is a relatively new and significant threat to cotton production in the Southern High Plains. Two trials were conducted in 2013 in Lubbock and Halfway, Texas in order to better understand the effectiveness of currently available residual herbicide options. The Lubbock and Halfway locations were rain-fed and irrigated, respectively. Treatments included 32 residual herbicide options in varying combinations, applied at rates appropriate for soil types and conditions. Palmer amaranth control was recorded following postemergence and late post-directed applications. The best 7 treatments for each location are reported. At the Lubbock location, best control following the postemergence application was achieved by Trifluralin preplant incorporated followed by (fb) Caparol plus Dual preemergence (99%), Dual plus Caparol preemergence fb Dual postemergence (96%), Trifluralin preplant incorporated fb Caparol plus Dual preemergence fb Direx late postdirected (98%), Dual plus Caparol preemergence fb Staple postemergence (94%), Trifluralin preplant incorporated fb Caparol preemergence fb Dual postemergence fb Direx late post-directed (96%), Dual plus caparol preemergence (98%), and Trifluralin preplant incorporated (78%). At the Halfway location best control following the late postdirected application was achieved by Dual plus Caparol preemergence fb Dual postemergence fb Direx late postdirected (95%), Dual plus Caparol preemergence (b Dual postemergence (88%), Trifluralin preplant incorporated fb Caparol preemergence fb Dual postemergence fb Direx late post-directed (95%), Trifluralin preplant incorporated fb Caparol plus Dual preemergence (87%), Dual plus Caparol preemergence fb Staple postemergence (85%), Trifluralin preplant incorporated fb Caparol preemergence (60%), and Dual plus Caparol preemergence (68%). The best 7 treatments from each location will be used in field trials to be conducted in 2014.