

**PEST MANAGEMENT: A WEED SCIENTIST'S  
PERSPECTIVE**

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**Abstract**

Pest management has historically been closely associated with insect management. A high percentage of the cotton acreage is under IPM for insect control but much less emphasis is directed to weed control. Weeds reduce yield and quality of cotton, and when coupled with the cost of control constitute a major expenditure for producers. As we move from a prophylactic approach to weed control (emphasis placed on preplant incorporated and preemergence herbicides) to greater reliance on 'as needed' postemergence weed management, there will be greater need for 'weed scouts.'

With the highly competitive world market of today, we must become more efficient. One of the best and least costly means to improved efficiency is to improve timeliness of operation. Timely application of postemergence herbicides may allow for use of lower rates and better weed control. It is imperative to control weeds before competition with cotton occurs. Many preemergence herbicides provide a good value and high potential for return on investment. We should play the odds with preemergence herbicides with regard to rainfall for 'activation', hedge against inclement weather for postemergence applications, understand weed control benefit, and know return on investment. Timeliness is also important in insuring that postemergence herbicides are applied before weeds begin to compete and reduce yield potential. By planning weed control strategies early, one can bid pesticides, purchase early, and buy in bulk to realize significant savings and insure supply of first choice treatments.

Producers can also tailor herbicides and rates to weeds. For example, very low rates of Command will control velvetleaf and cocklebur is easily control with the lowest labeled rates of Roundup. Cotoran controls sicklepod, but does not control Palmer amaranth, while Caparol is more effective on Palmer amaranth.

Crop-herbicide mode of action rotation is a preventive measure against weed shifts and development of weed resistance. High rates and repeated use of the same mode of action herbicides accelerate weed shifts and weed resistance. Perhaps the best example of a weed shift is the decline in grass weeds and increase in broadleaf weeds such as prickly

sida, common cocklebur, sicklepod, morningglory and nutsedge with the widespread, intensive use of the dinitroanilines (Treflan, Prowl, etc.) Crop rotation also reduces the incidence of many insect and disease pests, including nematodes.

Generally, cotton must be kept free of weeds for 3 to 8 weeks after emergence to avoid yield loss. The more competitive species and higher densities must be removed earlier than less competitive species and lower densities. Also, systemic herbicides like Roundup and Staple require a longer period to remove competition than contact herbicides like Buctril. Cotton crop competition is useful in suppressing mid- to late-season weed emergence and growth. Utilizing varieties and management practices that favor a uniform stand and quick canopy closure is inexpensive weed control. When stands are too thick, barren plants become 'cotton' weeds.

Producers should consider the entire weed control systems costs and risks when budgeting. Seed premiums, technology fees, herbicide and application costs plus associated risks should be considered in addition to the yield potential, quality, disease resistance and storm proof characteristics, particularly with new herbicide resistant varieties. Along with the cost per acre of weed control, knowing the cost of weed control per unit of lint can be helpful in planning and decision making. 'Aesthetic' weed control and 'recreational' cultivation do not pay! Knowing the difference between 'cheap' weed control and 'economical' weed control is essential. Cheap weed control may be the most expensive in the long run. Proven practices and research-based weed control systems reduce risks and offer the greatest potential for profit.