

**WEED CONTROL IN ULTRA NARROW ROW  
COTTON POSSIBLE STRATEGIES ASSUMING  
A WORST CASE SCENARIO**

**Charles E. Snipes, Plant Physiologist  
Delta Research and Extension Center  
Mississippi State University  
Stoneville, Mississippi**

**Abstract**

Weed control in cotton is changing dramatically due to recent developments in herbicide technology and biotechnology. Very soon it will be possible to control weeds in cotton with an over-the-top application of several types of herbicides. Along with these changes, comes innovation that was not possible without new developments. One of the more interesting concepts evaluated in 1995 was the use of ultra-narrow row spacings (8- to 12-inch rows) to produce cotton. This abstract will highlight some of the new weed control techniques that may be useful in an ultra-narrow row production system.

Recent developments in cotton weed control include the use of Staple, Buctril/BXN cotton, and Roundup Ready cotton. Each can contribute to successful weed control programs in a system that removes the possibility of cultivation and/or band application of herbicides. Staple is designed for over-the-top application to cotton for broad spectrum broadleaf weed control. It has soil residual activity and crop tolerance is good. Staple does not have grass activity. Both Buctril and Roundup are designed for use in their respective genetically-altered cotton varieties. Both can be useful in ultra-narrow row production from a weed control standpoint. Buctril is a broad spectrum broadleaf material with no grass activity and can be applied over a very wide range of crop stages. It has excellent common cocklebur activity. Roundup has good broadleaf and grass weed activity, but has no soil residual activity and a narrow window of application with respect to crop growth stage. Each of these products has strong attributes that can be helpful in ultra-narrow row production depending on weed spectrum present and desired level of weed control.

Initially, there will be little change in a weed control program for ultra-narrow row production except for the obvious change from band application of preemergence herbicides to broadcast applications. The programs will be designed based on weed spectrum present. However, after crop emergence, weed control is different due to lack of suitable mechanical means of weed control. In a worst case scenario, weed control costs will be even based on current pricing and certain assumptions for the newer systems. These costs can be reduced by adjusting the preemergence program, depending on the postemergence program

selected and weed spectrum present. A well-planned weed control program can reduce weed control costs significantly in an ultra-narrow row system relative to conventional systems. This will depend on canopy closure and what the weed-free maintenance period is for the ultra-narrow row system relative to conventional systems.

In summary, weed control in ultra-narrow row cotton is possible. However, it will require the new technologies and a shift from band herbicide applications to broadcast applications. It eliminates precision (time intensive) herbicide applications, and reduces the need for late season (layby) weed control due to quicker canopy closure. Also, due to the new postemergence technology, it will eliminate the MAX/MIN strategy used in conventional systems. This strategy tends to maximize herbicide use to minimize weed pressure over the season. Ultra-narrow row production of cotton will negate the need for long periods of weed control and herbicide strategies can be employed on an as needed basis.