

# **WEED CONTROL METHODS OF ORGANIC COTTON PRODUCERS**

**Van H. Ayers**

**University Outreach and Extension,  
University of Missouri  
Bloomfield, MO**

## **Abstract**

United States organic cotton producers were surveyed concerning weed control methods. A typical organic cotton weed control system consists of rotary hoeing, cultivating and hand hoeing. Other weed control methods were identified. Growers identified the need for herbicides acceptable to organic production criteria.

## **Introduction**

According to the Organic Fiber Council there were approximately 16,000 acres of organic cotton produced in the United States in 1999. Organic cotton is produced in seven states representing four distinct production areas. Production areas include the Northern Mississippi Delta, Texas High Plains, El Paso area, Arizona and California. Organic cotton is grown in the states of Arkansas, Tennessee, Missouri, Texas, New Mexico, Arizona and California. Texas is the largest producer of organic cotton. There are over forty organic cotton farmers in the United States.

Buyers of organic cotton require the grower to certify the crop is grown according to organic practices. Certification is issued through a third party organic certification organization. There is a list of practices that organic producers must follow. These practices typically disallow the use of any synthetic herbicides. Therefore, most organic producers incorporate non-chemical weed control practices in their production system.

This paper identifies the most prevalent organic cotton weed control practices. The paper also identifies weed control methods previously used by the organic cotton producers. Information was collected on needed research for this group of producers.

## **Methods**

A survey was sent to all the known organic cotton producers in the United States. The following questions were asked: (1) Please list the weed control practices in order of use during the growing season; (2) What other practices do you use to control weeds; (3) What practices have you tried in the past that you are not using now? Why did you stop using these

practices and (4) What weed control research is needed for you as organic cotton producers?

## **Results**

There were nineteen responses from five states, representing 8716 acres. Texas had the most responses. A typical organic cotton weed control system would consist of the following practices: 1. Rotary hoe after planting, 2. Cultivate 3. Hand hoe. A typical organic cotton grower would rotary hoe once, cultivate three to five times and hand hoe two to three times. Cultivating and hand hoeing would alter between the two. Four Texas growers used rod weeder either in front of the planter or after emergence. The Tennessee and Missouri growers used flame cultivators after emergence, no flame cultivators were reported used in Texas. Other practices of interest included: using barring off disks, disking the field edges, planting late, getting escapes and using vinegar and 220 degree water.

The other practice most reported that assisted in controlling weeds grouped as increasing soil organic matter and soil microorganisms. Specific practices identified by growers include the use of cover crops, green manure, manure and compost. Crop rotation was reported by four growers as reducing weed pressure. Other practices reported only once include: keeping soil in balance, using stale seedbed, changing row direction, preirrigating, using harrow to pull up Johnsongrass roots and flaming behind planter.

Three Texas growers reported that they no longer use flame cultivators. Two growers have dropped no-till and one grower no longer uses weeder geese.

The most reported research needed was the development of organic herbicides. Two growers reported better tillage tools and research on the use of corn gluten meal was reported once.

## **Conclusion**

Organic cotton growers weed control methods vary, but in general consist of rotary hoeing, cultivating and hand hoeing. Texas growers use rod weeders. Tennessee and Missouri growers use flame cultivators, Texas growers do not. Growers believe that increasing the organic matter through use of cover crops and manure reduces weed pressure. Crop rotation is also reported by growers to reduce weed pressure. Growers generally state there is a need for an organic herbicide.