COTTON VARIETY PERFORMANCE IN A DOUBLE-CROPPED PLANTING FOLLOWING WHEAT

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Abstract

Louisiana wheat acres have increased because of the higher price of wheat in 2008. This year Louisiana has approximately 400,000 acres of wheat, which is nearly double previous years. With the increase in wheat acres interest in double-cropping cotton with wheat has grown. In the past late season insect pressure from boll weevil and caterpillar pests prevented double-crop cotton from being a viable option. However, the success of the boll weevil eradication program and availability of transgenic Bt cotton varieties cotton double cropped with wheat is a possible option.

Two tests were conducted in 2007 at the Dean Lee Research and Extension Center in Alexandria, LA looking at stubble management options that would maximize cotton yields and the evaluation of cotton varieties that would be most suitable to double crop with wheat. The stubble management test was planted with Phytogen PHY 485 WRF. Treatments consisted of stale seedbed plantings on May 9 and May 23 and stubble treatments of twelve-inch stubble, six-inch stubble and burned stubble planted on May 23. It was arranged as a randomized complete block design with four replications. The variety evaluation test contained ten cotton varieties shown to be adapted to Louisiana, five Bollgard II or Wide Strike stacked with Roundup Ready flex and five Bollgard or Wide Strike stacked with Roundup Ready trait. The ten varieties were planted into a stale seedbed April 25 and May 23 and twelve-inch stubble on May 23. A ten by three factorial arrangement of treatments in a split block design was used, replicated four times. Parameters measured in both studies included lint yield, final plant height and stand count. Data were subjected to analysis of variance using Proc GLM procedures in SAS at the 95% significance level.

The stubble management trial evaluation of lint yield resulted in no significant difference among treatments. The highest yielding treatment was the stale seedbed planted on May 23 at 1204 lbs lint/acre. However statistical separation of treatments was observed in final plant height. Plant heights were significantly shorter in twelve and six-inch stubble compared to the stale seedbeds or burned treatments. In the evaluation of cotton varieties trial lint yield of the April 25 and May 23 treatments were significantly more than the stubble treatment by almost 20%. Evaluation of plant height and plant stand resulted in statistically taller plants in the stale seedbeds and greater number of plants per acre compared to the double crop planting. Even though the plant stand of the stubble treatment was significantly less than the stale seedbed it was still adequate at 2.21 plants/row foot. The stubble created a more challenging seed bed environment to obtain a stand. In both trials, double crop systems resulted in shorter plants than the stale seedbeds. This does have possible implications for late-season weed pressure, because of slower canopy closure and plant growth regulator management.