ECONOMICS OF 15-INCH COTTON WHEN DOUBLE CROPPED WITH WHEAT

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Abstract

Cotton prices for the past couple of years have been slowly declining while all other economic inputs (equipment, seed, chemicals, etc.) have been slowly increasing in price. Farmers need to develop a more economical standpoint for cotton production practices and need to be able to get as much as possible from a growing season and the farmland itself. One concept that can be looked at is a double crop system in which two crops can be grown on the same land in one year or growing season. This system has been widely used in the past with soybeans and wheat. Cropping systems of wide row cotton, double cropped with wheat was also an option looked at in past but never was feasible in the northern part of the cotton belt. The cooler late season temperatures and risk of early frost never gave even the earliest of varieties a chance to reach full maturity before termination. The growth habits of cotton being grown in narrow rows seem to be more advantageous for earlier maturity than in wide rows. Double cropping cotton and wheat may be an option to growers if cotton grown on a 15-inch row spacing can be planted behind wheat to produce economical yields.

Field trials were replicated at two different locations for the growing seasons of 2006 and 2007. These locations were the Upper Coastal Plain Research Station (Rocky Mount, NC) and Central Crops Research Station (Clayton, NC). Wheat variety Coker 9295 was used. The seeding rate used was a rate of 2.5 bushels per acre. In early spring, wheat plots that were to be harvested for yield data and double cropped with cotton received 100 pounds of nitrogen per acre and wheat plots that were to be used for the earlier planting dates were burned-down using glyphosate. The study was designed to compare differences in cotton planted in 38 inch and 15 inch rows. The two were also planted at different planting dates with two of the planting dates being double cropped with wheat. This study consisted of four planting dates in 2006: May 11th, May 24th, July 5th, and July 12th. In 2007, this study consisted of five planting dates: May 14th, May 28th, June 11th, June 21st, and July 2nd. The difference in the number of planting dates was due to heavy rainfalls in June of 2006. Cotton plots were planted using a six-row John Deere Max Emerge XP vacuum plot planter for the cotton in 15-inch row spacing and a two row White 6700 air planter for the cotton planted in a 38-inch row spacing. The cotton variety planted was DP 117 B2RF. All other practices followed the 2007 North Carolina Cotton Production manual. Plots were harvested using a John Deere 9910 two row spindle picker and the harvested cotton was sampled and weighed for yield. Cotton samples were ginned using a saw tooth gin and lint samples were weighed for gin-out and sent to Cotton Incorporated for High Volume Instrumentation (HVI) analysis. Data collected from this test consisted of stand counts, vigor ratings at emergence, number of days to first bloom, number of days to first open boll, lint yield, and fiber quality at harvest. Also, all economic data for the cotton and wheat plants was recorded.

The number of days to first bloom showed no significant differences between 38 inch and 15 inch row spacing across all planting dates. The amount of days from planting to first bloom consisted of around sixty days no matter the planting date or row spacing. The number of days to first open boll showed the same trend among treatments. The amount of days from planting to first open boll consisted of around 105 days. Yield data showed that yields declined for both wide and narrow row spacing as the planting date was delayed. In 2006, the two planting dates that showed cotton in a double crop situation with wheat were unable to be harvested due to an early frost in mid October that killed the plants before full boll maturity was reached. In 2007, the cotton planted on June 21st and July 2nd that was double cropped with wheat could be harvested due to a later frost date, in the middle of November. Average wheat yields for Clayton were 46.3 bushels per acre in 2006 and 50 bushels per acre in 2007. Average wheat yields for Rocky Mount were 56.3 bushels per acre in 2006 and 41.6 bushels per acre in 2007. The net income provided when adding the income of the cotton lint yield for the 15 inch row spacing and the wheat yield showed incomes that were comparable to double cropping wheat and soybeans. The June 21st planting date in 2007 at Rocky Mount and Clayton showed a lint yield of 725 pounds per acre and 508 pounds per acre. When sold at $.53

cents per pound, net incomes yielded $384.25 per acre for Rocky Mount and $269.24 per acre for Clayton. The wheat yield of 41.6 bushels per acre at Rocky Mount and 50 bushels per acre at Clayton when sold for $5.96 per bushel yielded net incomes of $247.94 per acre for Rocky Mount and $298.00 per acre in Clayton. Rocky Mount's total income of cotton and wheat yield equaled $632.19 dollars per acre and Clayton's total income of cotton and wheat yield equaled $567.24 dollars per acre. These incomes are comparable to a double crop situation with soybeans at 30 bushels per acre being sold at $9.30 per bushel plus wheat incomes. Things to consider when making the decision to double crop cotton with wheat is the length of growing season, how early the wheat or small grain can be harvested, selection of an early maturing, high yielding variety and its growth habits, and the amount of rainfall available during the summer months in that particular area.