ULTRA NARROW ROW COTTON

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ABSTRACT

Ultra Narrow Row Cotton production has been evaluated many years. Most recently, advances in herbicide technology has given rise to the lasted round of evaluations. In recent studies, production costs of UNRC is generally less than that of conventional as a result of the significant reduction of fixed costs associated with less costly harvest equipment. Little advancements have been made in broadcast finger stripping technology in the last two decades; however, the major manufactures are currently developing and evaluating harvesters. Yields are often similar to conventional cotton, but higher ginning costs and discounts associated with lesser fiber quality and the lack of mill demand for UNRC has not sparked an incentive for a switch from conventional to UNRC. More research is needed comparing UNRC to soybeans or wheat on marginal soils that cannot support conventional cotton production.

INTRODUCTION

Ultra Narrow Row Cotton, UNRC, has been researched for many years, but has made a rebound in acreage during the last five years in the United States. Ultra Narrow Row Cotton is defined as cotton planted in 25.4 cm rows or less with approximately 300,000 plants/ha. (Perkins, 1998). Recent developments in over-the-top herbicides and herbicide tolerant transgenic varieties have lead to the recent rise in popularity of UNRC. Researchers have studied various aspects of UNRC including production costs, harvesting, yield, ginning and fiber quality.

RESULTS AND DISCUSSION

PRODUCTION COSTS

Total production costs are an important component in evaluating a cropping system. It is important to consider both variable and fixed costs. Variable costs are often greater per hectare for UNRC. Higher seed and chemical costs are the primary factors involved (Vories, et al., 1999; Wilson, et al, 1999). The fixed costs for UNRC generally are less. The primary factor is the cost of the harvester. A broadcast finger stripper is much less expensive than a conventional spindle picker. The total cost of production for UNRC is generally less than that for conventional cotton as a result of differences in fixed costs. (Brown, et al., 1998)

HARVESTING

Ultra Narrow Row Cotton requires the use of a broadcast finger stripper for harvesting. Until recently, the stripper headers used for UNRC have been salvaged from Allis Chalmers machines and mounted onto new John Deere and Case strippers (Mayfield, 1999). Little improvement has been made in the finger harvest technology in 20 years. However, John Deere and Case are currently developing an UNRC harvester. The initial cost of the broadcast finger stripper is approximately half the cost of a picker and requires much less maintenance. Although the harvest capacity of a stripper can be less than that of a picker especially in a wet environment, the total cost of stripper harvest appears to be about half the cost of picking (Larson, et al., 1997).

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YIELD

Generally yield from UNRC does not differ from that of conventional picker cotton when evaluated using similar conditions. Numerical yield increases of UNRC over conventional is not uncommon (Brown, et al., 1998; Kerby, 1998; Larson, et al., 1997; Vories, et al., 1999). However, higher seedcotton yields can be offset with lower gin turnout (Vories, et al., 1999). In non-irrigated conditions timely rainfall can affect yields between UNRC and conventional resulting in more varied results (Wilson, et al., 1999).

GINNING

Ginning of UNRC is a factor that producers often fail to consider when evaluating UNRC. In order to properly process UNRC, the gin should include more seedcotton drying and cleaning equipment. Few gins in the Mid-South and Southeastern regions of the United States are adequately equipment to handle stripper harvested cotton. Ginning rates are reduced 20% to 50% with UNRC (Mayfield, 1999). With only a few bales in their area, most gins can not afford to equip their facilities for extra trash associated with stripped cotton. Generally processing costs are higher for UNRC (Anthony, et al, 1999).

FIBER QUALITY

Differences in fiber quality of UNRC and conventional cotton is a big issue. Stripped cotton in the Mid-South receives an automatic discount of 300 points or $14.40/bale. Valco, et al. reported that due to harvest methods UNRC has over three times the foreign matter entering the gin. However with proper ginning, the market classifications including foreign matter, were not statistically different. Barky calls are much more common in UNRC. Because UNRC contains more fine trash, yarn manufacturing wastes are higher. Lint cleaning and carding wastes increases about 1% for UNRC compared to conventional cotton. Although there was similar yarn quality comparing conventional and UNRC, it came at the expense of higher wastes for UNRC.

CONCLUSION

Ultra Narrow Row Cotton has been tested at numerous locations under various conditions. In most cases UNRC has been comparable to conventional cotton production in terms of cost and yield. However, quality of UNRC is generally less than that of conventional cotton. Little if any incentive to switch from conventional to UNRC exists at this time for cotton producers. Perhaps the biggest incentive for a switch to UNRC may exist for non-cotton producers or cotton producers also farming marginal soils where conventional cotton is not produced. This allows flexibility for these producers to rotate more freely in response to commodity prices without the burden of enormous fixed cost associated with conventional cotton production. More research is needed to compare UNRC to soybeans or wheat or marginal soils that cannot support conventional cotton production.

BIBLIOGRAPHY


Wilson, S.G., W.D. Shurley, Craig Bednarz, and Michael Bader, “Economic Analysis of UNRC Production in the Coastal Plain Region of Georgia.” 1999 Proceedings Beltwide Cotton Conferences p. 317