

**JUSTIFICATION FOR AND IMPLICATIONS
OF INCREASING COTTON
ACREAGE IN VIRGINIA: A CASE STUDY
OF SOUTHAMPTON COUNTY**

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Abstract

Cotton acreage in Virginia has increased dramatically over the past few years and has nearly doubled in each of the last two years. In-person interviews of 77 Southampton County producers revealed that the potential profit opportunity provided by cotton was the primary driving force behind entering cotton production. Cotton's availability as a good rotation crop for peanuts was another key motivating factor, as were the low profit margins of other traditional Southeastern Virginia crops. Increasing numbers of first-time cotton producers means more demand for education and training programs from the land-grant system and Virginia Cooperative Extension.

Introduction

As a general rule, when agricultural producers determine a need for change, they tend to make gradual adjustments in their crop and livestock enterprises. Contrary to this conservative approach to change, cotton acreage in Virginia has increased dramatically over the past few years and has nearly doubled in each of the last two years. Much of this increase in acreage is driven by new producers entering cotton production, rather than existing producers increasing their acreage. At a time when state support for agriculture is declining, such acreage increases in a crop not traditionally grown in Virginia have implications for the demands placed on the land grant system and Virginia Cooperative Extension. The objectives of this study are to determine the underlying factors driving the dramatic increase in cotton acreage in Virginia, and to determine where dwindling resources can best be spent in support of the increase.

Cotton in Virginia

In the national cotton picture, Virginia's role remains a small one. In 1994, Virginia ranked 15th out of 17 cotton producing states, contributing just 0.42 percent of the nation's cotton (VASS, 1995). Even so, the increase in production has repercussions for Virginia producers and for the system attempting to support those producers. Table 1 shows the growth in cotton acreage since 1990 for

the Commonwealth as a whole and for Southampton County, currently the largest cotton producing county in Virginia.

The Survey

To determine the motivating factors behind the growth in cotton acreage in Virginia, and to learn of the most pressing research and training needs facing cotton producers, a written survey was implemented in Southampton County. The survey (copy available from the authors) was pre-tested via twelve in-person interviews of producers in the county. The survey was modified based on the pre-test, and due to the length of the survey, the decision was made to conduct the interviews in person rather than by mail as originally intended. The survey was implemented at two pesticide recertification meetings which were sponsored by Southampton County Extension in December of 1995. Seventy-seven cotton producers responded to the survey. Since the survey was not administered to a random sample of Southampton County producers, the results of the survey cannot be generalized to all county cotton producers. At this stage of the research, the study should be thought of as a case study of Southampton County and should not be generalized to the Commonwealth of Virginia. The preliminary results will, however, provide insight into the decision-making process that new producers go through, and will highlight areas of research and training that are needed.

Case Study Results

For those respondents answering the survey, more than half of the increase in acreage devoted to cotton was acreage taken out of corn production. For the sample, average cotton acreage increased from 62 acres in 1993 to 324 acres in 1995, with approximately 75% of that acreage being grown on rented land. Corn acreage declined from an average of 180 acres in 1993 to 30 in 1995. Declines were also seen in wheat and soybean acreage over the three year period. In addition to being the number one ranked cotton producing county in Virginia, Southampton is also the top ranked peanut producing county, and average peanut acreage remained steady over the period at 190 acres.

Most producers made money on the primary commodities in 1995. Table 2 indicates the percentage of farmers that lost money, broke even, or made money on selected crops in 1995. Also listed are expected yields for the primary crops. The cotton producers surveyed hired between zero and four full-time people and between zero and eight part-time people to work on the farm, averaging one of each labor type. Those surveyed had been raising cotton between one and ten years, averaging 2.5 years. Two years was the most common response. In terms of the original idea to grow cotton, 51% of those surveyed reported getting the idea from seeing other farmers growing cotton.

Eighteen percent reported that they thought of it independently, while 11% learned of it through a production meeting and 10% got the original idea from an extension agent. Ten percent stated that they were approached by an employee of a gin.

Respondents were asked to rate factors that were important to their decision to first start growing cotton, with 1 being not important, 2 being somewhat important, and 3 being very important. The top ranking decisions, with their average rank, are given in Table 3.

Factors with average ratings less than 2 included the following: underutilized land, labor, or equipment; desire for the challenge of a new crop; desire to expand the farm operation; extension service recommended it; neighbor recommended it; employee of local gin recommended it; ease of production; lower costs of production; initial investment costs relatively low.

Numerous sources of information were given as being useful in planning and developing cotton farming activities. Producers were given the opportunity to check all sources that they utilized. Table 4 lists the percentage of producers stating each source. It is interesting to note that the faculty and staff at North Carolina State University have been utilized more than those at Virginia Tech. However, North Carolina has more of a history of cotton production than does Virginia. Furthermore, Southeastern Virginia is geographically closer to N.C. State than to Virginia Tech.

The gin plays a valuable role to respondents in terms of providing marketing information. Producers were asked to check all sources of marketing information that they utilized. Eighty-two percent utilize employees of their gin, 56% their extension agent, 45% other farmers, 40% Cotton Council publications, 28% N.C. State specialists, and 27% Virginia Tech specialists. Generally, producers were fairly satisfied with the services provided by their gins. When asked if they were satisfied with the timing of module pick-up, 56% said yes. Fifty-two percent were satisfied with the timing of their ginning, while 56% were satisfied with the timing of receipt of sample test/grade results. On a scale of 1 to 4, with 1 being poor and 4 being excellent, gins ranked highest in the services of module provision and educational programs. They ranked lowest in seed sales. Over half of the respondents had no suggestions for improved services by their gin. Of those with suggestions for improvement, faster settlement, faster module pick-up, faster ginning, and better handling (less cotton left in the field) were the most common suggestions for improvement.

Producers were asked if financial stress was a factor in their decision to start growing cotton. Thirty-six percent said that financial stress was not a factor, while 46% said it was somewhat of a factor, and 19% said it was a major

factor. Fifty-three percent of respondents obtained a loan to help them establish their cotton farming activities. Fifty-nine percent of respondents reported that they farmed with someone else, either in a partnership or a corporation. Father/son partnerships were common, as were partnerships between brothers. Thirty-seven percent own a cotton picker, either alone (30%) or with someone else (7%). Of those who do not own a picker, 70% have been satisfied with the timing of their cotton harvest, although getting cotton picked in a timely manner was one of the problem areas stated by producers.

Most respondents (54%) spent between 50 and 75% of their farming hours in cotton, with most of the remaining producers (36%) spending between 25 and 50% of their time in cotton farming activities. Few spent less than 25% of their time (4%) or greater than 75% of their time (6%) in cotton producing activities. It is interesting to compare the time spent on cotton farming activities with the percent of farm income that is generated from cotton. Table 5 shows the percent of producers that derive various percentages of their on-farm income from cotton.

When asked what types of cotton research they would be most interested in, respondents gave the highest rankings to new herbicides, new insecticides, and management and marketing research. They were less interested in new varieties and no-till cotton. In terms of training needs, producers were most interested in management and marketing educational programs, scouting, and updates on the cotton program. Ninety percent of producers conduct scouting activities, with sixty percent of those hiring someone to do the scouting. Seventy-five percent of those using scouting feel that it reduces the amount of pesticides they use. Respondents were less interested in product and variety updates, and programs to assist in understanding gin sheets. Twenty-six percent stated that they had a full understanding of their gin contract, while 52% had a fairly good understanding of their contract. Fourteen percent found parts of their contract confusing.

When given an open-ended question about the most critical problems they had faced in their cotton farming activities, the most frequent response was timing of harvest. Many also stated that the timing of many cotton activities coincided exactly with peanut farming activities, thus causing time management problems. Weeds and grass were a commonly stated problem, as was the need for direct sprays. Weather was a critical problem, as was the proper timing of the application of plant growth regulators and defoliant. Given the opportunity to choose three factors that are critical to the success of cotton farming operations, marketing and production skills were the most important factors. Table 6 gives the six most common responses.

Average age of respondents was 44 years, with a range from 23 to 73. Average household size was 2.9, and

respondents had an average education of 12.8 years. For the sample, average gross farm income was \$310,000. Of respondents' net household income, an average of 78% was from on-farm sources with 18% coming from off-farm employment and the remainder from stocks, bonds, and other investments.

Finally, when asked how they would describe the future prospect of the cotton market for them over the next three to five years, 16% of respondents stated very good, 70% stated good, and 14% stated fair. None felt that the cotton market outlook was poor.

Given that 86% of producers see the future prospect of the cotton market as good or very good, and given that 37% of producers have invested in cotton harvesting equipment, it is likely that cotton acreage in Virginia will remain fairly stable over the next few years. In Southampton County, there is little land still available to be converted to cotton production, so substantial expansion is not expected. Producers have expressed areas that they would like to see cotton research conducted: herbicides, insecticides, and management and marketing. They have identified other problem areas in terms of the timing of the application of plant growth regulators and defoliant, and the timing of harvest. Virginia's producers have turned to North Carolina State University specialists for expertise in the past, more so than to Virginia Tech specialists. Virginia producers have made a commitment to King Cotton, and it certainly has implications for the demands made on the existing support system for agriculture in the Commonwealth. While there are a number of individual research and extension personnel who have committed to supporting the cotton industry, Virginia's land grant institution must decide if it will make a commitment to provide a larger share of resources to address the concerns of this growing agricultural industry in Virginia.

Future Research

The next stage of this study is to conduct interviews of producers in other cotton producing counties in Virginia. Following the completion of data collection, future work will include a multinomial logit analysis to model the decision to produce cotton as a function of the numerous reasons for beginning production. Further attention will be given to the research and training needs of Virginia's cotton producers, and suggestions for future research and extension programming will be offered.

References

Virginia Agricultural Statistics Service. 1995. Virginia Agricultural Statistics, 1994 Annual Bulletin.

Table 1. Cotton Production (Harvested Acreage)

Year	Virginia	Southampton County
1990	5300	535
1991	17700	4910
1992	21800	6455
1993	22800	7785
1994	41700	18550
1995*	107000	40786

*Planted acreage

Table 2: Estimated yield and profitability of selected crops in 1995

	Est. yield	Percent of respondents who:			
		Did not raise	Lost money	Broke even	Made money
Cotton	729 lb	0	1	31	68
Peanuts	2774 lb	3	21	27	49
Soybeans	27 bu	51	13	18	18
Corn	116 bu	54	2	10	34
Wheat	65 bu	65	0	6	29

Table 3: Factors important to the decision to start growing cotton

	Average rating
Good opportunity for increasing profit	2.9
Fits well in rotation with peanuts	2.8
Low prices traditionally grown commodities	2.7
Significant demand	2.7
Dependable price	2.7
Convenient location of markets	2.5
More reliable production over time	2.1
Success of other farmers producing cotton	2.1

Table 4: Information sources utilized by cotton producers

	Percentage utilizing the source
Other cotton farmers	75
Cotton gin employees	60
Extension agent	55
Paid consultant	36
Magazines	34
North Carolina State University faculty/staff	33
Virginia Tech faculty/staff	19
Other people in the business	19
Cotton Council activities	15

Table 5: Percent of on-farm income generated by cotton farming activities

Percent of on-farm income	Percent of producers
< 20	7
20 - 40	40
40 - 60	28
60 - 80	22
80 - 99	0
100	2

Table 6: Factors that determine the success of cotton farming activities

	Percent of respondents choosing the factor
Marketing skills	58
Production skills	43
Land quality	39
Business management skills	35
Location of the market	35
Financial resources	32