Cotton Improvement Through Advances in Production Practices in 50 Years

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COTTON has probably had more words written about it, more mental and physical energy expended upon it, and more time devoted to it in the halls of Congress than any crop grown in the United States. Cotton was responsible for the settlement and agricultural development of the South and indirectly for the Civil War which came near destroying the South.

The importance of cotton in the lives and affairs of men is by no means limited to the southern United States but is worldwide. On the high-priced irrigated lands of the Western States, cotton ranks near the top in money due. In countries other than the United States where the crop is by no means limited to the southern United States but is considered second only to steel.

Recognizing the tremendous importance of cotton as a crop, it is fitting that we should, on this Golden Anniversary of the American Society of Agronomy, pause and review progress over the past half century.

It is interesting to note in passing that Mark A. Carleton, first president of our Society, who gained world renown for his work in cereal crops, was working with cotton improvement at the time of his death.

The title of this paper assumes that improvements have been made in cotton during the past 50 years. In order to test the validity of this assumption, four measures—yield, efficiency of production, staple length, and grade—can be used to compare cotton crops, past and present.

In 1907, 31.3 million acres of cotton were harvested in the United States. These acres produced 11.1 million bales of lint. The average yield of lint per acre was 178 pounds (2). In 1956, 15.6 million harvested acres produced 13.3 million bales of lint. The average yield of lint per acre was 409 pounds (6).

Lint yield per acre in 1956 was 2.3 times that of 1907. Put in terms of total production, 2.2 million more bales were produced in 1956 than in 1907 on less than half the acreage.

In 1907, 3.5 million bales were produced, while in 1956 this figure was 13.3 million bales. In 1907, 107 bales per man-hour were produced, while in 1956, 681 bales per man-hour were produced. In 1907, 1.1 million bales of cotton were produced, while in 1956, 13.3 million bales were produced. In 1907, 1.1 million bales of cotton were produced, while in 1956, 13.3 million bales were produced.

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Grade is our fourth measure in comparing earlier cotton crops with more recent ones. In this regard, it should be noted that there has been a decline rather than a substantial price differentials in favor of higher grade, and that mills still prefer cleaner cotton.

In 1928, 54% of the lint produced was Middling, and 41% was in the three grades, Strict Low Middling, and Low Middling. In 1956, less than 1% of the lint was graded above Middling, and 84% came within the three grades, Middling, Strict Low Middling, and Low Middling (4).

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Actually, this decline in grade is an indication of progress in cotton production, since it is a reflection from hand to machine harvest. Despite the sale value of better grades, the saving from machine harvest more than offsets the difference in price.

Improvements in the gin, in picker design, in cultural practices, and changes in methods through breeding are working together to produce higher grades. There is evidence that high grades of cotton are competitive with complete mechanization.

So far, this discussion has been confined to production in the United States. Phenomenal improvement in cotton production in the United States has been pointed out for the 50-year period.

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