CORRELATION OF COMBED STAPLE LENGTH ON THE COTTONSEED WITH COMMERCIAL STAPLE LENGTH IN AMERICAN UPLAND COTTON

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LENGTH of fiber is an important factor in determining the market value of different cottons. In the United States premiums are paid for the longer cottons and a discount is made where the length of staple is below 15/16 inch. Consequently, breeders and other investigators engaged in cotton improvement work are interested in fiber length and its measurement.

Cotton fiber length is usually measured or estimated by the commercial staple method where the classer measures or estimates one or more "pulls" from a sample of lint. This method is used exclusively on the markets. The distribution of fiber length and the mean length in lint cotton or in seed cotton can also be determined by using either optical equipment or mechanical sorters. The combed staple length on the cottonseed is generally used by breeders in testing the length of fiber from cotton strains, and usually the fibers are combed out (with a small hand comb) at right angles to the long axis of the seed. Measurement of the combed staple length is made on a black velvet pad (Fig. 1). Commercial staple length can be determined only by professional classifiers or by cotton breeders skilled in estimating it. The relationship of results from these two methods should be known.

The purpose of this paper is to show the association of combed staple length on the cottonseed with commercial staple length in American upland cotton, *Gossypium hirsutum* L.

MATERIALS AND METHODS

The material which came from work previously reported was obtained from cotton grown by farmers. Four farm areas were included in 1931 and 1932 (Table 1). The eight areas in different parts of North Carolina were assumed to provide representative data pertaining to the varieties and kind of cotton grown in the state; pure, mixed, and run-down seed from a number of different varieties were grown on varying soil types.

At the first picking 20 locks of cotton were picked from 20 plants on each farm of each area and this sample was put into a paper bag and labeled with the grower's name and address. The history of the planting seed used on the farm was recorded.

All measurements were made in the fiber laboratory under constant atmospheric conditions, 70°F and 65% relative humidity. Each lock in the sample was separated in two halves, thus making two similar samples. One of these samples was ginned on a roller gin and the other was used to make combings of the staple.