YIELDS OF ADJACENT ROWS OF SORGHUMS IN VARIETY AND SPACING TESTS

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The accuracy and reliability of field tests are ever affected by the methods employed in such experiments. In variety tests of row crops, the degree of competition between rows of adjacent varieties should determine whether or not border rows will be necessary. In the case of row crops spaced the ordinary distance of 3 1/2 feet, a large area of the test plat will be occupied by such border rows. In three-row plats this will amount to 66 2/3%, in four-row plats to 50%, in five-row plats to 40% of the total area, etc. Frequently, the area available for variety tests is limited. In such cases much may be gained if it is found that the elimination of the border rows does not interfere with the accuracy of the test. Even where the area available for such tests need not be considered, the employment of smaller plats made possible by the absence of border rows allows for a greater number of replications. The fact that a variety test may be conducted on a smaller area serves in many cases to keep down the disturbing influence of soil heterogeneity in so far as a small uniform plat not extending into a variety of soil types may be selected.

The purpose of this investigation was to find to what degree the yields of rows of adjacent varieties were influenced by competition and to find whether or not border rows are essential to the accuracy of sorghum variety tests under conditions that prevail at the Oklahoma Agricultural Experiment Station.

PLAN OF EXPERIMENT

The forage yields of varieties of grain and sweet sorghums as well as those of a rate of planting test with Blackhull kafir were used in this investigation. The work extended over a period of two years, 1926 and 1927. The yields of 1,525 individual rows were used. They were divided as follows: 300 rows of grain sorghums, 300 rows of sweet sorghums, and 75 rows of kafir from the rate of planting test of 1926, and 820 rows of grain and sweet sorghums and 30 of kafir in the rate of planting test of 1927.

Yields reported, except where stated otherwise, refer to green weights. The weights were taken immediately after cutting. All yields except where expressed on a percentage basis are stated in tons per acre.

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