INFLUENCE OF ADJACENT ROWS OF SOYBEANS ON ONE ANOTHER

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In varietal experiments the influence of adjacent rows on one another may be marked. The effect of a tall or heavy-yielding strain adjacent to another strain has been studied particularly in the small grains and corn. During the last two years the writers have made a similar study with soybeans.

At the West Virginia Experiment Station the soybean varietal experiments are carried on in rows 18 feet long and 30 inches apart. Each variety is grown in four or more systematically distributed plats. Each plat consists of four rows. After discarding a foot of the end of each of the two inner rows the remainder of one of them is used for obtaining yield of seed and the remainder of the other for yield of forage. The seed rows, when ripe, are cut with a sickle and placed in a loosely woven burlap bag to dry. Each bag, containing the plants from one row, is hung in a well ventilated shed until late in the fall when the beans are threshed. The rows to be used for determining the forage yields are cut when the plants have sufficiently matured for hay. The green weight is taken immediately and at the same time a sample (approximately 4 kilograms) of each row is placed in a muslin bag which is hung in an artificially heated drying room maintained at a temperature of 45° to 55° C. The samples remain here until the excess moisture is driven off after which they are hung in a shed and allowed to become thoroughly air dry. All hay yields are expressed on an air-dry basis.

In carrying on the varietal experiments the border rows of each plat are ordinarily discarded, but in 1924 and in 1925 these rows were harvested and the yields determined the same as for the inner rows. The yields in 1924 in tons of air-dry hay per acre and in 1925 in bushels of seed per acre were determined for each border row. In addition to yield, the average height of the plants in each row was recorded. With these data it was possible to study the influence of yield and height of certain rows on adjacent rows. This was done in a manner similar to that used by Hayes and Arny with small grains. The yield difference between the border rows of each plat was correlated with the height difference, and also with the yield difference of the adjacent rows.

1Approved for publication as Scientific Paper No. 24, by the Director of the West Virginia Agricultural Experiment Station, Morgantown, W. Va. Received for publication May 3, 1926.
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