AN INCREASING number of acres in the corn-belt area of the United States is being planted to a rotation of corn and soybeans. Growers are eagerly looking for practices to increase their incomes from both crops. Periodic interest is shown in alternating rows or strips of the two crops as a possible way of increasing yields.

An experiment was conducted for two years at Urbana, Illinois, to compare alternating strips and solid plantings. The alternating strips studied were wide enough to facilitate the use of large machinery. Two additional variables included were row spacing and row direction.

LITERATURE REVIEW

Alexander and Genter (1) recently reported in Virginia that 2 rows of corn bordered by soybeans yielded 30% more than did 2 rows of corn bordered by corn. Soybean yields from pairs of rows bordered by corn were approximately the same as those from a solid planting pattern. Etheridge and Helm (4) in Missouri found that in proportion to the area occupied, corn and soybeans grown in alternate rows or alternate pairs of rows made much higher yields than when planted in separate blocks. Akers and Westover (2) in Mississippi and Brown (3) in Louisiana also reported an advantage for corn yields when grown in alternating strips with soybeans. Wiggans (6) grew corn and soybeans in alternate pairs of rows. The total yield for the combination was 15% less than for corn grown alone.

Lang and Hilst (5) and Hilst (5) have studied alternating strips of corn and soybeans in Illinois; they found a yield advantage of 9 to 27 bushels of corn. Slightly lower yields were noted for the soybeans bordered by corn than when bordered by soybeans.

Most of the reported work has been with either alternating rows or pairs of rows which would not fit large machinery into wide usage.

MATERIALS AND METHODS

The study was conducted for 2 years (1959-1960) at Urbana, Ill., on highly productive Flanagan silt loam. The treatments were:

1. Corn bordered by corn in 24-inch rows.
2. Corn bordered by soybeans in 24-inch rows.
3. Corn bordered by corn in 40-inch rows.
4. Corn bordered by soybeans in 40-inch rows.
5. Soybeans bordered by soybeans in 24-inch rows.
6. Soybeans bordered by corn in 24-inch rows.
7. Soybeans bordered by soybeans in 40-inch rows.
8. Soybeans bordered by corn in 40-inch rows.

There were 4 harvest rows with 4 border rows in the 24-inch row spacing. In the 40-inch row spacing, there were 6 harvest rows with 6 border rows on each side. All plots were 25 feet in length. All treatments were planted in two directions: north-south and east-west.

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