MUCH interest has developed kenaf, *Hibiscus cannabinus* L., as a fiber substitute for Jute in the manufacture of sugar bags and for numerous other purposes. It is thought to have great agricultural and industrial possibilities in Cuba, which has been the center of Kenaf research in the western hemisphere since 1943.

The specific breeding methods to be employed in the development of new varieties are closely associated with the mode of reproduction of kenaf. Breeding methods used in the past have been those in use with self-pollinated crops. The commercial varieties that have been used in Cuba are composites of different plant types which probably have resulted from natural crossing among varieties.

The objective of this investigation was to obtain data on the amount of natural crossing that occurs in varieties of kenaf in Cuba.

**REVIEW OF LITERATURE**

The kenaf plant was reported as a self-pollinated plant under Central Asia conditions by Popova (4). Horst (1) reported “that self-pollination was favored by the structure of the flower since the anthers are so close to the stigmas that self-pollination is inevitable.” Even though Horst (1) classified *Hibiscus cannabinus* as a self-pollinated plant, he reported a few variations were due to mutation or natural crossing.

Howard and Howard (2) studied the flower structure of *H. cannabinus* and stated “that the opportunities for cross-pollination are very great.” They described the method of pollination in the kenaf plant and stated that crossing was possible from the time the styles began to carry the stigmas beyond the opening of the column to the closing of the flower.

(5) also found some irregularities in the flowers of *H. cannabinus var. vulgaris*.

Kenaf varieties in Cuba were grouped into three maturity groups by Lynn and Jones (3). This classification is important in connection with cross-fertilization, because to obtain a high percentage of cross-pollination there must be similarity in the date of maturity.

**MATERIALS AND METHODS**

These investigations to determine the percentage of natural crossing in kenaf varieties were conducted at the Agricultural Experiment Station of the Ministry of Agriculture in Cuba, near Santiago de las Vegas in 1951-52 and 1952-53.

In 1951-52, kenaf lines that differed with regard to leaf shape were planted in alternate rows to determine the percentage of natural crossing in tests one and two. The data are presented in table 1. The leaf shapes were of two types, divided and entire, with the F1 hybrids showing the dominant divided leaf type (see figure 1). In tests three, four and five, varieties with purple stem color were planted in alternate rows with a line carrying green stem color. The F1 hybrids resulting from natural crossing showed incomplete dominance and had brown stem color. Thus the amount of natural crossing was determined for each line in these three tests.

Each of the five tests consisted of a different pair of contrasting lines planted in alternate rows in a block of ten rows. The rows were 8 inches apart and 10 feet in length. Seed was drilled at...