planted side by side. The rows were 42 inches apart, and plants were spaced 6 inches in the row. Approximately 1000 defective and 1000 normal plants were present in each block. These types were grown in 1946 and 1947 in the following isolated field arrangements:

1. The defective type was completely surrounded by the normal.
2. The defective type was planted on the north of the adjoining normal type to determine the effects of southerly winds.
3. The defective endosperm type was planted on the south of an adjoining plump endosperm type to determine the effects of northerly winds.
4. The defective type was planted on the west of the normal to determine the effects of easterly winds.
5. The defective type was grown on the east of the normal to determine the effects of westerly winds.

In each arrangement the rows ran at right angles to the direction of wind to be tested.

At harvest, heads were taken at random in each isolated block from the shrunk endosperm row adjoining the normal type. The percentage of crossed or xenia kernels was determined for each wind exposure or field arrangement (Table 1). The percentage of crossing varied in 1946 from 29.0 where the tester field was completely encircled to 4.7 where only winds from north exposure were from the west, resulting in the highest percentage of crossing from the west.

The prevailing winds in Oklahoma are from the south, yet these data indicate that it would have been unwise in either year to have isolated the required distance to prevent crossing in only the southerly direction. The great variation in crossing from the south for the 2 years is thought to be a result of strong southerly winds in 1946 and only occasional, weak winds in 1947.

To insure the production of pure seed, an isolation distance should be established for all sorghums. Seed fields should be isolated in all directions from other sorghums by this distance.

A NEW IMPROVED STRAIN OF RED CLOVER

A new improved synthetic red clover strain, a double-cut type, with high resistance to anthracnose and Kabatiella caulivora (Kirch) Karsk has been developed by G. H. Cutler agronomist at the Purdue University Agricultural Experiment Station, Lafayette, Ind. It was derived by selfing F. C. 15808, a strain that was obtained from Dr. A. J. Pieters of the U.S.D.A. in May 1929. According to his records the seed had been presented “the best type of Ohio seed.” Although synthetic was selected from the Ohio seed, it is highly probable that it combines some plasm of four other superior strains, since it was permitted in the breeding nursery after the desirable plants had been chosen. Three of these strains were F. C. 14229, 15612, and 15682, also camed by Dr. A. J. Pieters. He obtained the first two from Grundy Counties respectively in Illinois, and the third from Tippecanoe County, Indiana. The fourth strain was also from Indiana.

These five strains were chosen from the hundred introductions that were tested.

In evaluating these introductions preference was given to the double-cut type which combined good hay yield, and resistance to anthracnose and Kabatiella caulivora. As a preliminary step in the improvement program, each of the five superior strains (using seed from the original introductions) was grown in small seeded plots for two seed generations. Prior to anthesis each plot was caged with linen so that was only the bees might be used in controlling pollination. In this way inter-strain pollination was prevented, and no pollination from stray clover plants in the field occurred.