

1), whereas a rainy period began November 4, during which the cultivar Cobb matured.

Likewise, in 1974, the seed of Forrest, which matured September 24, reached a high level of fungus infection, whereas the seed of Cobb, which matured October 31, did not. In the fall of 1974 rainfall was relatively heavy (Table 1) until September 20, then declined sharply, followed by low rainfall during October and November. Thus, the cultivar Forrest matured shortly after a relatively high rainfall period, whereas the cultivar Cobb matured in a dry period.

Additional evidence that there is little, if any, relationship between susceptibility to fungal infection of soybean seed and date of maturity is found in graphs (Figure 3) for fungal infection and the rainfall data (Table 1). In the years 1972 and 1975, fungal infection was similar for all cultivars. In those years (Table 2), rainfall was heavy during September and less in October. In the years 1973 and 1974, infections of the early cultivar Forrest were much greater than the other four cultivars; however, the maturity dates for Forrest were September 29 and September 24, respectively, during or shortly after periods of frequent rainfall. The other cultivars matured in October during periods of relatively low rainfall.

Pure culture studies of seed have confirmed that it is impossible to determine visually the amount of infection by fungi. This is illustrated by the data obtained from five cultivars grown in the 1975 State Variety Trials (Table 3). Visual counts for purple stain infection caused by the fungus *Cercospora kikuchii* were made with a 2X magnifier-illuminator. One hundred seeds were examined for each determination. Cultural determinations for purple stain infection were made as described in methods and materials for other fungi. From the data in Table 3, the actual amount of seed infection was found to be several times the amount that can be detected by visual inspection. In fact, cultures revealed infection 15 times greater than the amount determined by the visual method, with the October harvest of the cultivar Centennial.

RAINFALL FREQUENCY IN RELATION TO SOYBEAN SEED MATURITY AND HARVEST

A study was made to determine what chances exist for the production in Florida of soybean seed without occurrence of rainfall between harvest and maturity. The average monthly rainfall at four selected locations, for the 40-year period of 1935-1974, is plotted in Figure 4. The greatest amount of rainfall occurred during June, July, and August, and the least rainfall occurred during the months of October and November. The least rainfall at Gainesville and Avon Park occurred during the month of November.