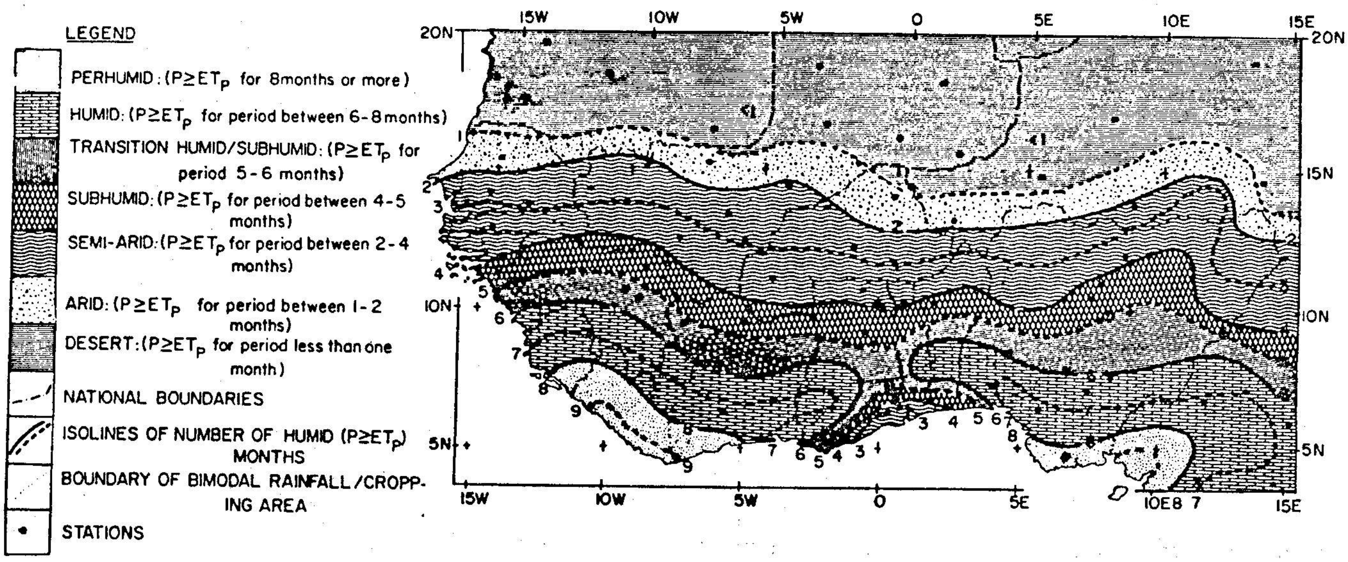

Fig. 6. Generalized agroclimatic map of West Africa. (Source: T. L. Lawson, IITA, 1979).

previous sequential planting experiments (IITA Annual Report, 1976), a preliminary attempt was made to model cowpea yield using estimated evapotranspiration.

Evapotranspiration estimates were obtained by assuming that the potential evapotranspiration is equal to Class A pan evaporation, and the actual mean weekly evapotranspiration is proportional to the ratio of the actual available soil moisture to the available soil moisture at field capacity. The 1976 results show a much better relationship than the 1977 results between the estimated evapotranspiration and cowpea yields (Figs. 7 and 8).

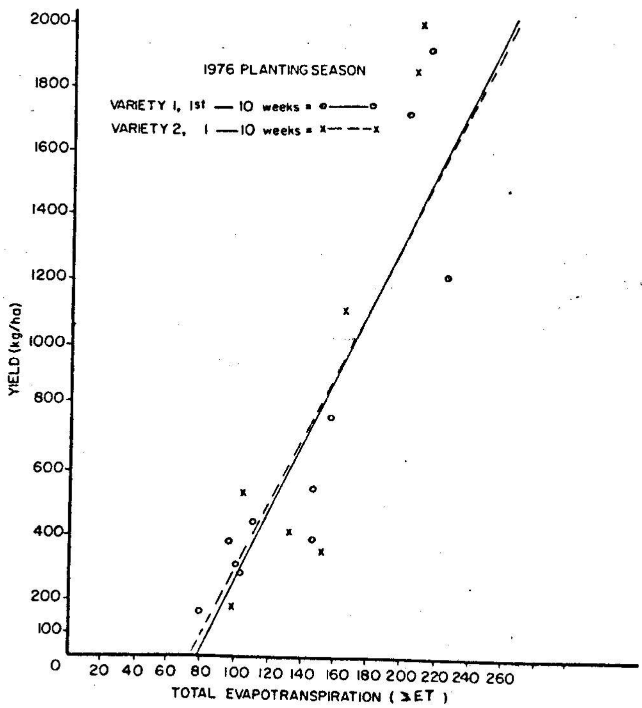

Fig. 7. Cowpea yield vs. evapotranspiration (1976).

Pest and disease problems are believed to be partly responsible for this. Possible inaccuracies in the evapotranspiration estimates may be equally important.

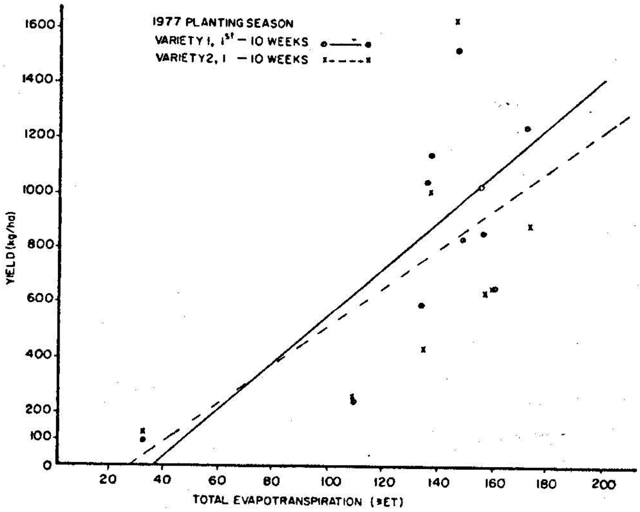

Fig. 8. Cowpea yield vs. evapotranspiration (1977).

Dry season evaporative demand and cassava yields. Cassava planted in a given year normally grows through the dry season and is harvested at the beginning of the rains the following year or thereafter. Although the plant reduces its canopy during the intervening dry season, no sign of wilting is observed on the leaves of the remaining foliage. On the hypothesis that the plants probably achieve this only by drawing on reserve resources, it would appear that yields might tend to decline in proportion to the length and severity of the dry season. Using cumulative Class A pan evaporation (Ep) as a measure of the intensity of the dry season, an analysis was made to relate the reported decline in the average yield of the 10