1-7 plants/ha to give 10,000-70,000 plants/ha. Cassava was planted at 100 m x 100 m in the same rows as maize but spaced 50 m from the maize along the same row to give a population of 10,000 plants/ha. The land was plowed and harrowed but not ridged. The fertilizer recommendation used was for maize and consisted of a basal application of N.P.K. 15:15:15 at 400 kg/ha and a side dressing of 30 kg N/ha as urea 4 weeks after planting of maize.

The cassava growth was significantly affected by maize population with tuber yields being significantly lower at the higher maize populations. The marked differences between maize populations suggested that maize populations should not exceed 30,000 plants/ha if good cassava yields are expected. The maize yield indicates no serious yield reduction of maize population if kept at 30,000 plants/ha. The results also support the practice of thinning maize to 3 plants/ha in maize/cassava intercropping in West Africa.

**Weed control in maize/cowpea intercropping.** The effect of early weed interference in maize/cowpea intercrops is modulated by the growing season. During the 1980 first season, a maize/cowpea intercrop was more sensitive to weed interference than each of the crops grown in pure culture (Fig. 38.) However, during the 1980 second season, crop sensitivity to early weed interference peaked in both the sole and intercrop at 2 weeks after planting. This may be related to moisture conditions. Weed biomass at the 2-week stage was higher in the second season than the first season, thus, accounting for the more severe weed interference during the second season.

**Alley cropping**

**Alley cropping systems in forest zone**

**Effect of N application on maize/Leucaena alley cropping.** Results of a field experiment conducted at IITA on the effect of N application in the maize/Leucaena leucocephala alley cropping system are shown in Fig. 39. Substantial Leucaena dry matter and N yields are produced with a total of 6 prunings. The total annual N yield of over 180 kg N/ha was quite remarkable.

During this cropping year, there was a significant effect of the low N rates applied to the maize on the Leucaena dry matter and N yields. There was, however, only a slight effect from the high N rate applied.

The effect of N rates and removal of Leucaena prunings on maize grain yield is shown in Figure 40. The results clearly show that despite the high amount of N yield, there was still a need for application of low N rates for obtaining high yields. Removal of the Leucaena prunings reduced the yield to about 54 percent. Without N application but with Leucaena prunings only, the total maize

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**Fig. 38. The effect of weed interference on food energy values of maize/cowpea intercrop.**

**Pod of Leucaena leucocephala, a tree type legume being used for soil fertility restoration.**

**Collecting leaves from Leucaena leucocephala. The dried leaves will be used as a source of plant nutrient and organic matter, the stems as stakes and firewood.**