

Fig. 35. Light transmission through mixed cassava/maize crop canopy at full maize development as a function of plant populations.

Induced micro-climate and crop response. In a related experiment in 1980, using cassava of relatively prolific growth, plant populations were maintained constant in 3 treatments at 12,500 plants/ha (cassava: 3001) and 25,000 plants/ha (maize: TZPB). In a fourth treatment, the maize population was increased to 40,000 plants/ha, and the cassava population was reduced to 10,000 plants/ha.

Pure cassava with 12,500 plants/ha constituted a sixth treatment, and pure maize at 25,000 and 50,000 plants/ha were treatments 5 and 7, respectively.

Analyses of the partial results show that the amount of light intercepted by the upper canopy of the maize (to cob level) is significantly related to yield.

Observations on soil moisture and temperature in the experiment also show marked differences in both variables under the different crops and crop combinations. Fig. 36 compares the 6 weekly average mean relative soil moisture contents under the pure maize, pure cassava and maize/cassava combinations, respectively. Evidently, the presence of cassava in the mixture has a beneficial effect on the moisture available to the maize while maize helps reduce the soil temperature as a result of rapid canopy development (Fig. 37).

Within the mixed crops, appreciable differences were observed with changes in planting geometry (Table 43). Similarly, air temperature and humidity as reflected by the wet bulb thermometer were also affected by the planting pattern (IITA Annual Report, 1979).

Table 43. Comparative mean relative mixture content*.

Treatment	1		2		4				
Period**	1	2	3	1	2	3	1	-2	3
Moisture content	72	67	102	94	85	123	83	70	112

*The moisture content is in % of value at FMC.

**Period 1 = 2-6 WAP; Period 2 = 7-12 WAP; Period 3 = 13-18 WAP.

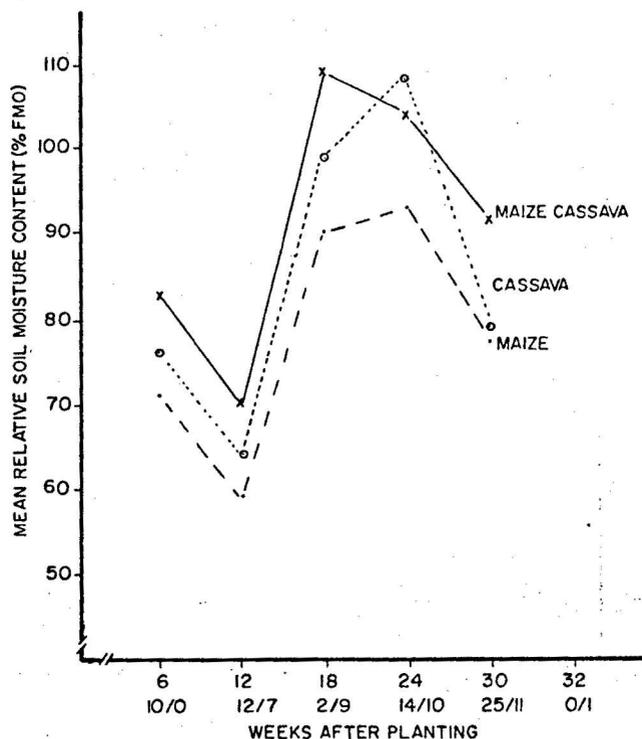


Fig. 36. Relative soil moisture content in different crop/crop mixtures as a function of time during the period of growth.

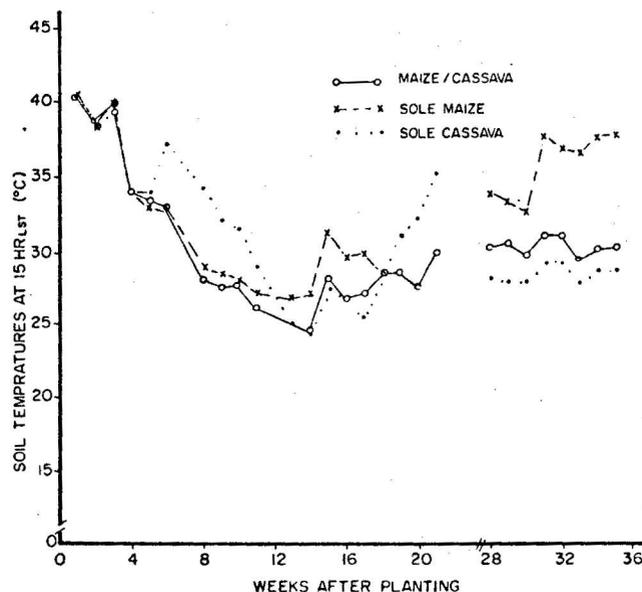


Fig. 37. Soil temperature in different crop/crop mixtures as a crop function of time during the period of growth.

Partial mechanization of maize/cassava intercropping. Yields of maize planted mechanically on ridges were not affected by cassava planted on the same ridges at 0, 7, 14 and 21 days after maize (IITA Annual Report, 1979). Herbicide, however, depressed maize yield significantly at the 5 percent probability level. The effects on cassava show that delay of up to 21 days in planting cassava was not critical to cassava yield (Table 44). However, signifi-