

grain yield was maintained at about 3.5 t/ha for the 2 seasons (total yield in 1979 was 3.6 t/ha.) The addition of the *Leucaena* prunings has a distinct effect on soil organic matter and N levels (Table 46.)

Effect of legume species and alley width. Legumes established between maize did not reach sizes at which the quantity of leaves was regarded as sufficient to contribute significantly to soil nutrient levels. Alley width had no significant effect on legume development during early stages. The leaf yield and potential N contributions are shown in Table 47. The leaf and N yield is related to alley width.

Because of the low potential N contribution, the plot was fertilized with 60 kg N/ha, 20 kg P/ha and 30 kg K/ha after a soil test. The plot was Rome plowed and maize planted with a single-row rolling injection planter in the 225 cm alley and with a 4-row rolling injection planter in the wider alleys. The spacing was 75 cm × 25 cm. The legumes were 75 cm from the nearest maize. Maize yields calculated with a correction for land devoted to legumes are shown in Fig. 41. Neither alley width nor legume species had a significant effect. It would appear that it is too early to observe the effects of the different treatments.

Selection and evaluation of woody species for alley cropping systems. The usefulness of fast growing woody and herbaceous legumes in alley cropping systems is being evaluated on the Alfisols at IITA and on the

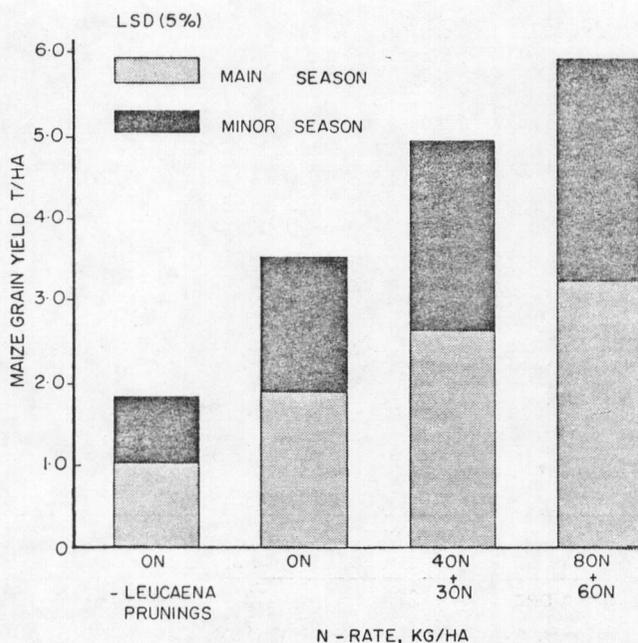


Fig. 40. Effect of N rates on maize grain yield from maize/*Leucaena* alley cropping system on Apomu soil series (Psammentic Usthorthent). (Main season N rates: 0, 40 and 80 kg N/ha; Minor season N rates: 0, 30 and 60 kg N/ha).

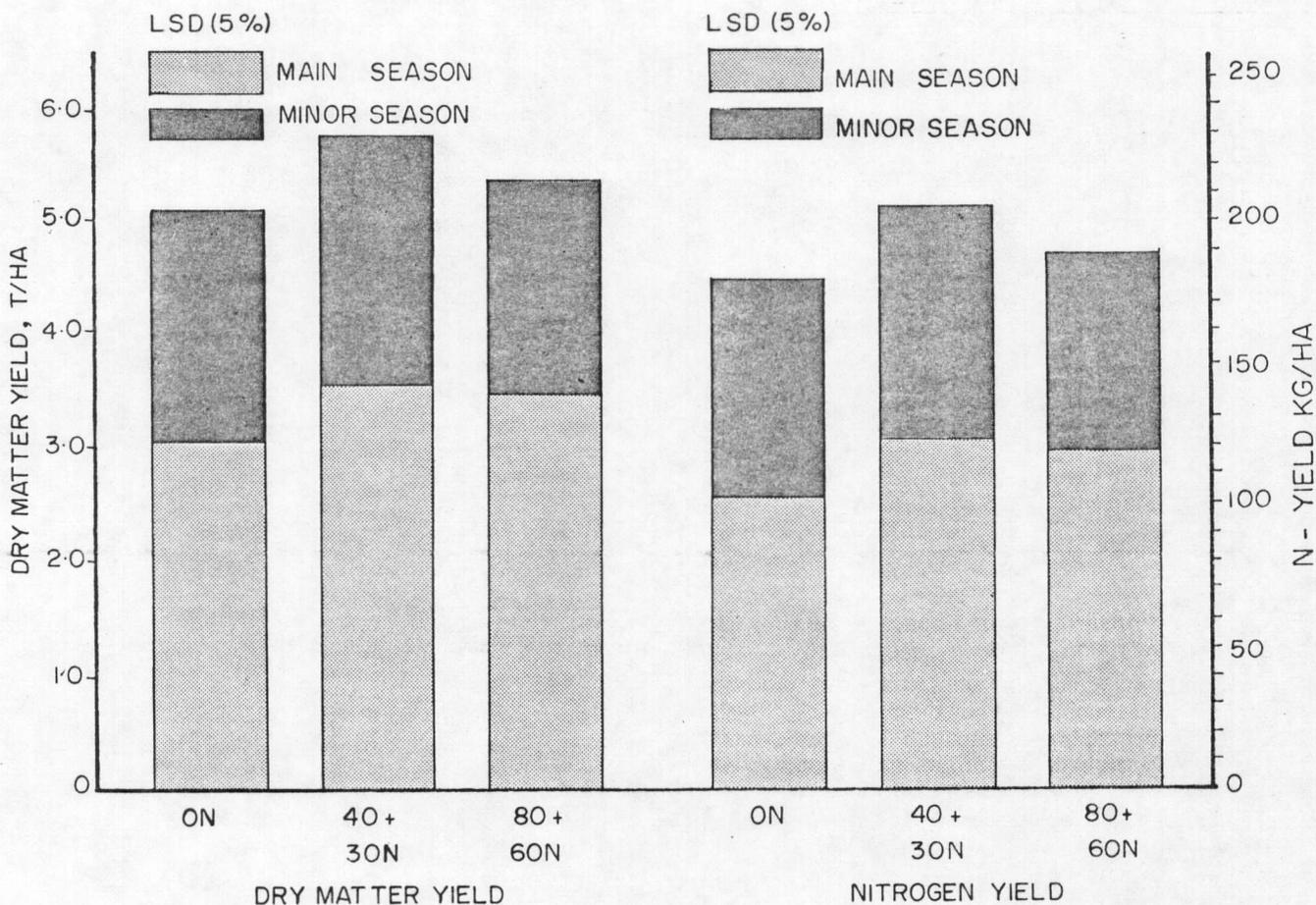


Fig. 39. *Leucaena* dry matter yield and N yield from maize/cassava alley cropping on Apomu soil series (Psammentic Usthorthent). (Main season N rates: 0, 40 and 80 kg N/ha; minor season N rates: 0, 30 and 60 kg N/ha).