GRAIN YIELD RESPONSE FROM FODDER HARVESTING DATES OF CORN AND SOYBEAN IN A CORN-SOYBEAN INTERCROP

BY

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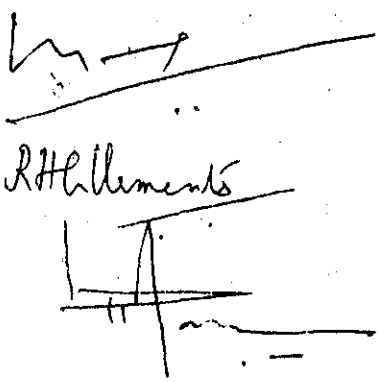

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ABSTRACT

MICHAEL DE SILVA, Post Graduate, Institute of Agriculture, Peradeniya, Sri Lanka, August, 1984. Grain yield response from fodder harvesting dates of corn and soybean in a corn soybean intercrop. (Research Adviser, Dr. V. R. Carangal.)

Two field experiments were conducted at the International Rice Research Institute during the crop year 1983-84 to determine the feasibility of integrating fodder production into a corn-soybean intercrop. Corn hybrid SMC 201 and variety DMR 2 were intercropped with soybean Acc. 2120 (400,000 plants/ha).

In the wet season, the seeding rate of corn was doubled than the recommended and excess (60,000 plants/ha) was thinned as fodder. Highest mean fodder yields were obtained when thinning was staggered over 4 dates (20, 30, 40 and 50 DAE) instead of 2 thinning dates (20, and 30 DAE) and 3 thinning dates (20, 30 and 40 DAE). Corn hybrid (V_1) and variety (V_2) gave highest mean fresh herbage yields of 28.46 and 25.46 tons/hectare respectively in the wet season. The corresponding dry season yields were relatively low inspite of thinning 90,000 excess plants per hectare (21.35 and 17.90 tons/ha for V_1 and V_2 respectively). Yield reduction in latter was due to intra-specific competition during the thinning period.

The grain and stover yield of corn variety was not affected in both seasons while the corn hybrid suffered a decline in both grain and

stover yields in dry season. However, the grains and stover yields of both corn cultivars were not adversely influenced by varying fodder harvest dates of component crops.

Herbage yield of excess 200,000 plants/ha cut as fodder at 35 DAE differed markedly between V_1 and V_2 intercropping across seasons due to difference in light transmission ratios. Howeyer, this yield difference did not persist as fodder harvesting was delayed to 55 DAE. The herbage yield at 55 day harvest was considerably higher than at 35 DAE. Prolonged association of soybean with corn did not affect the grain and fodder yields of corn. Agronomic characters of either component crops were not influenced by intercropping or varying fodder harvesting dates.

Grain and stover yield of soybean was drastically reduced due to intercropping. Yield reduction of 63-80 percent occured associated with reductions in pods per plant and seeds per pod.

Land Equivalent Ratios (LER) were greater than 1 for all intercropping except in one treatment. The mean LER's of intercrops with corn variety (1.29) was higher than in corn hybrid-soybean intercrops (1.18). Intercropping reduced the weeds markedly.