

**STUDIES ON INTERCROPPING UNDER COCONUT  
GROWTH AND YIELD OF COWPEA (*VIGNA CATIANG  
BURM, WALP, VAR. MI-35*) GROWN AT THREE SPAC-  
INGS UNDER DIFFERENT DENSITIES OF COCONUT**

**S. M. Karunaratne, H. P. M. Gunasena**

*(Department of Crop Science, University of Sri Lanka,  
Peradeniya Campus.)*

and

**M. A. P. Manthiriratne**

*(Coconut Research Institute, Lunuwila)*

An experiment was conducted at the Pothukulama Research Station of the Coconut Research Institute of Sri Lanka during November 1974 - February 1975 to investigate into the effect on growth and yield of cowpea Var, MI-35 grown at three spacings under seven densities of coconut.

Coconut densities varying from 112-286 palms per ha had no significant effect on seed number per pod or pod length of cowpea. When grown under lower densities of coconut, pod number per plant, 1000-seed weight, pod dry weight and final seed yield of cowpea increased significantly. Differences in the spacing of cowpea had no effect on any of the yield components of cowpea except total pod weight and husk weight and the closer spacing of cowpea (60x15 cm) increased seed yield when compared with the wider spacings (60 x 30cm), (60x45cm). A close correlation between seed yield (Y) and pod number (Pn), 1000-seed weight (Sw) and pod dry weight (Pd) were recorded which indicate that they were the main determinants of the final seed yield of cowpea. The above relationships could be shown by the following equations.

$$Y = - 8.141 + 52.612 P_n (P = 0.01, R^2, 88.35\%)$$

$$Y = - 42.942 + 0.923 P_d (P = 0.01, R^2, 83.72\%)$$

$$Y = -372.359 + 6.622 S_w (P = 0.05, R^2, 68.18\%)$$

Total dry matter yield (Td) and seed yield (Y) were also closely correlated with leaf area duration (D) accounting for 96% and 76% of the variation in seed yield respectively. These relationships could be represented by the equations,

$$T_d = - 58.884 + 58.399 D (P = 0.001)$$

$$Y = - 85.487 + 52.291 D (P = 0.05)$$

The results of this investigation suggest that coconut lands could be intercropped successfully with annuals such as cowpea provided that the coconut plants are widely spaced to allow sufficient light penetration to the intercrop.