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THE EFFECTS OF MAIZE PLANT POPULATION AND NITROGEN LEVEL ON THE PERFORMANCE OF MAIZE/COWPEA INTERCROP

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ABSTRACT

The performance of cowpea (*Vigna unguiculata* (L) Walp) and maize (Zea mays (L)) intercrop were evaluated at 0, 15000, 30000 and 45000 maize plant populations per hectare and at 0, 45, and 90 kg per hectare nitrogen levels. A split plot arrangement in a randomized complete block design, RCBD with four replications was used. The experiment was conducted in the early and late cropping seasons of 1998. Leaf area index, dry matter and seed yields of cowpea decreased significantly with increase in maize plant population and nitrogen level while maize LAI and grain yield increased. Maize ears per plant and hundred-seed weight decreased with maize population but increased with nitrogen level, increase in maize population and nitrogen level resulted in increased vegetative growth of maize and maize shading of cowpea, which consequently reduced cowpea dry matter and grain yields. Highest land equivalent coefficient, LEC, and land equivalent ratio, LER, values were obtained with cowpea planted at 50,000 plants per hertare intercropped with 15 to 30,000 maize plants per hectare and at 90kg nitrogen per hectare applied to maize.

Keywords: Maize population, cowpea, nitrogen, intercropping, land equivalent ratio, and equivalent coefficient.