

N STUDIES IN CORN-COWPEA INTERCROPPING

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Cereals absorb high soil N contents for optimum growth thus promoting N-fixation of associated legumes. High soil N level near root nodules is known to impair N-fixation, therefore, N-fertilization for cereal-legume associations is an important management aspect which has not been fully investigated. This experiment was conducted at the University Experimental Station, in 1986, to study the effect of the following treatments on the productivity of corn-cowpea intercropping system: (i) two N sources as urea and ammonium sulphate, (ii) two application methods as banding and broadcast, and (iii) two timing of top-dressing as single dose at 5 weeks and split doses at 4 and 6 weeks after seeding. Corn-cowpea model was developed with 50,000 plants/ha of corn (*Zea mays* L.) seeded in 100cm rows and 150,000 plants/ha of cowpea (*Vigna unguiculata* L. Walp) seeded in between corn rows.

Grain yields, leaf area index, plant height, and land equivalent ratio of corn and cowpea were not affected by N source. Corn yield was greater with band application (4458 Kg/ha) than broadcast (3938 Kg/ha). Method and time of application interactions for yield and pod number/plant of cowpea were found: both parameters increased when N was broadcast with split doses. A three way interaction was observed for plant height of cowpea which increased when urea and ammonium sulphate were banded in single and split doses, respectively. A higher harvest index (0.53) was observed with broadcast of urea and ammonium sulphate applied as split doses. A higher gross income was observed with broadcast of fertilizers with split doses than other combinations.