

Research was carried out in the field on the effect of intercropping common bean and maize crops in a semi-arid zone of south-east Kenya over two rainy seasons in 1997. The experimental design was a randomised complete block design with eight treatments replicated four times. Significant differences were observed in total plant dry weight by the different treatments in pure stands, 21 days after emergence with higher values under mixed cropping system in common beans. However, at 42 days after emergence, plant dry weights in uninoculated common bean pure stands with N application were significantly higher than under other treatments. Common bean yields were significantly reduced by the maize intercrop. The inoculated common bean and N application treatment recorded the largest seed dry weights and subsequently yields per hectare. These findings suggest that intercropping common beans and maize considerably suppresses the yield of the former under the semi-arid conditions of south-east Kenya. Inoculation of common bean with the commercially available *Rhizobium* strain 446 on the other hand was effective and improved yields. Soil analysis of the experimental plots before and after one cropping season indicated that common beans increased N slightly or maintained it at the pre-planting levels. This was unlike the pure maize plots where there was a marked decline in soil N. There was however, a marked increase in soil phosphorus in all treatment plots.