

Title:

Improving Maize Yield in the Guinea Savannah Zone of Ghana with Leguminous Cover Crops and PK Fertilization

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Abstract:

In the present study, *Calopogonium mucunoides* Des (calopo), *Crotalaria juncea* L (sunn hemp), *C. retusa* L. (devil bean) and *Mucuna pruriens* (L) DC (mucuna) supplied with 17 kg haG¹ of P and 33 kg haG¹ of K were assessed in 1996-1997 at three locations in Northern Ghana for their dry matter production and nutrient accumulation, mineralization, as well as their effect on the yield of a succeeding maize crop. The dry matter yield of cover crops across locations ranged from 5 to 15 t haG¹ with a corresponding total N accumulation of 115 to 306 kg haG¹. Cover crop residue amendments increased maize grain yield 2 to 4-fold above the 1-year weed fallow control. Calopo was the best cover crop in increasing maize yield. On the other hand, devil bean, which out-performed all the other cover crops in dry matter and N accumulation, did not increase maize yield commensurate with its dry matter and N yields due to high N immobilization. Small-scale farmers in Northern Ghana can improve their maize yields by growing cover crops in rotation with their maize.