
Evaluating the effect of different organic manures on the performance of black eye cowpea variety

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Introduction

Cowpea (*Vigna unguiculata*, L. Walp) is one of the key legume food crops produced worldwide for its grains, fresh green seeds, fresh leaves and pods which are consumed as fresh cooked vegetable. The research study, to evaluate the effect of bio-manures on the growth and yield performance of black eye cowpea variety was in central Uganda. Specifically, the study examined the growth, and yield parameters of black eye cowpea variety in relation to application of (chicken manure, pig manure, cow dung control treatment). It was hypothesized that bio-manure application has a significant effect on the growth and yield performance of black eye cowpea variety.

Methodology

The treatments were laid in complete randomized block design (CRBD) in a 0.0004ha size, replicated four times. The plots were blended with 5 kgs of bio-manure except the control plot. The plants were planted at the spacing of 50×20cm. 5kgs of each manure type was applied. Observations were done on 4000 plants/ha selected from 100000plants/ha total number of plants in the 16 plots. The data was collected on plant height, number of leaves, leaf length, number of branches, and the grain weight and wet bio mass of cowpea. The data collected was analyzed with GENSTAT (VSN, version 14, 2012) for (ANOVA).

Results & Discussion

Results indicated that cowpea under chicken manure had the highest mean of plant height 21.3cm and 21.82cm in season one and two respectively, wet bio mass of 5995kg/ha and 4745kg/ha in season one and two respectively, number of branches of 7.58 and 7.1 in season one and two respectively and number of leaves of 38.7 and 38.3 in season one and two respectively. compared to cowpea treated with pig manure and then cow dung and the least was under the control. The highest mean of grain weight under pig manure with 612.75kg/ha and 587.75kg/ha in season one and two compared to chicken manure, cow dung manure and the least was from control treatment. The ANOVA results indicated that there were highly significant differences on the plant height of cowpea black eyed variety among treatments at ($p < 0.001$). The cowpea treated with chicken manure and pig manure performed better than those with cow dung and those without (control), therefore the recommendation is that farmers to fetch high yields they should use chicken manure and plant early in time during the first rains and also crops to pick the Nitrogen flash for their vegetative growth.

Conclusion

The cowpea treated with chicken manure and pig manure performed better than those with cow dung and those without (control). Recommendation is that farmers to fetch high yields they should use chicken manure and pig manure and plant early in time during the first rains and also crops to pick the Nitrogen flash for their vegetative growth.

Keywords

Chicken manure, pig manure, cow dung manure, and control treatment.