Effect of fertilizers and harvesting method on yield of cowpea

ABSTRACT

The low productivity of cowpea (*Vigna unguiculata* L. Walp.) leafy vegetables in smallholder farms in Kenya is partly attributed to moisture stress, declining soil fertility and poor harvesting practices. To increase the productivity and utilization of this crop requires development of suitable agronomic practices such as effective nutrient management and best harvesting practices. A field experiment was conducted at the University of Nairobi’s Kabete field station, to determine the effect of fertilizer application and harvesting method on yield of cowpea. The fertilizer treatments, comprising 200 kg/ha Di-ammonium phosphate (DAP), 10 t/ha farmyard manure (FYM), 10 t/ha chicken manure (CM), 100 kg/ha DAP + 5 t/ha FYM, 100 kg/ha DAP + 5 t/ha CM and no-fertilizer (control), were tested against two harvesting methods (piecemeal and wholesome harvesting) in a randomized complete block design, replicated three times. Data collected included leaf fresh weight, leaf dry weight, leaf yield and seed weight. All data collected were subjected to analysis of variance (ANOVA) and means separated, where the F-test was significant, using the least significant difference test at Pd”0.05. Fertilizer application significantly increased cowpea leaf yield. Compared to the no-fertilizer control, application of DAP, DAP + CM, DAP + FYM, CM and FYM increased leaf yield by 68.6, 58.3, 56.6, 52.2 and 42.6%, respectively, in cowpea. Compared to wholesome harvesting, piecemeal harvesting significantly increased cowpea leaf yield by 43.9%. Fertilizer use and piecemeal harvesting practices increase cowpea leaf yields.

Key words: Leaf yield, manure, nutrient management, piecemeal harvesting, seed weight, *Vigna unguiculata*