Tropentag, September 17-19, 2018, Ghent

"Global food security and food safety:
The role of universities"

The Contributions of some Growth and Yield Attributes to Fresh Fodder and Seed Yield of Cowpea (*Vigna unguiculata* L. Walp) in the Semi-Arid Savannah Regions of Nigeria

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Abstract

Cowpea (*Vigna unguiculata*) is one of several species of the widely cultivated genus *Vigna*, and a popular leguminous crop in Africa. It is an important crop in the arid and semi arid savannah agro-ecology of Nigeria; where it is known as 'beans'. All parts of the cowpea are useful. In Nigeria cowpea grains are consumed by humans in many different forms even as delicacies. Its vegetative part is good feed for cattle. As a result, the demand for cowpea is high. In this regard, a field experiment was carried at the Institute of Agricultural Research, Ahmadu Bello University, Samaru, Zaria, Nigeria to determine the contributions of some growth and yield attributes to fresh fodder and seed yields of dual purpose cowpea (*Vigna unguiculata* (L.) Walp); during the 2002–2005 wet seasons. The experiment was laid out in a randomised complete block design and replicated three times. Data collected were analysed using analysis of variance (ANOVA) and means were separated with Duncan Multiple Range Test at 5 % probability level. Results showed that there was a positive correlation ($p = 0.01\%$) between grain yield and vine length/ plant, leaf fresh weight/ plant, stem fresh weight/ plant, 100-seed weight, threshing percentage, relative regeneration rate and pod yield. There was a simple positive correlation ($p = 0.05\%$) between grain yield and stem dry weight/ plant, leaf dry weight/ plant, leaf: stem ratio, harvest index and fresh fodder yield. The simple correlation was negative ($p = 0.01\%$) between grain yield and number of branches/ plant. The path coefficient analysis showed that the most significant direct contributors to fresh fodder yield were vine length/ plant (2.3 %) and leaf fresh weight/ plant (4 %). While 100-seed weight and pod yield were the most significant direct contributors (44 % and 79 % respectively) to final grain yield. It is concluded that in selecting plants for higher yields, pod yield and most importantly 100-seed weight should be of most considered interest to breeders and agronomists; if the desired yield is the grain; while vine length and leaf fresh weight should be of most considered interest, if the desired yield is the fresh fodder.

Keywords: Analysis, correlation, cowpea, fodder, grain, path coefficient, productivity

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