

## Agronomic performance and nutritive quality of some commercial and improved dual-purpose cowpea (*Vigna unguiculata* L. Walp) varieties on marginal land in Southwest Nigeria

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### Abstract

A field experiment was conducted between 2007 and 2008 to determine the agronomic performance and nutritive quality of some varieties of dual-purpose cowpea (*Vigna unguiculata* L. Walp) grown in marginal land without fertilization. The experiment was arranged in a  $2 \times 2$  factorial design with two seasons (wet and dry) and two groups (commercial and improved) of cowpea varieties. The varieties were evaluated for biomass and grain yields, green leaf retention, chemical composition, secondary metabolites and *in vitro* organic matter digestibility (IVOMD). A group  $\times$  season interaction was observed for biomass yield with higher yields recorded in the wet season. Grain yield and green leaf retention were also greater ( $P < 0.001$ ) in improved varieties with an average yield of  $467 \text{ kg ha}^{-1}$  and over 50% of leaves retained during the wet season, respectively. Interaction between group and season was observed for crude protein ( $P = 0.002$ ), lignin ( $P = 0.003$ ) and hemicellulose ( $P = 0.003$ ) contents of the cowpea haulms. The IVOMD of the haulms ranged from 585 to  $802 \text{ g kg}^{-1}$  OM. Quality indices (IVOMD, crude protein and non-fiber carbohydrates) of the cowpea varieties were better during the dry season. Results from the study showed that dual-purpose cowpea varieties can easily be grown by resource-poor small-holder farmers as it requires little or no input and will provide sufficient biomass that will be used as a supplement during the dry season while providing extra food for the households.

### Keywords:

Biomass; cowpea; dual-purpose variety; marginal land; supplement