**INTRODUCTION**

Cassava (*Manihot esculenta* Crantz) is an important root crop widely cultivated in Nigeria and in Sub-Saharan Africa (Fig 1). Biofortified cassava clones provide an affordable source of Provitamin A in Africa and is used as an intervention crop to address hidden hunger resulting from vitamin A deficiency (VAD). It is therefore important to obtain information on the stability of total carotenoid concentration, yield and yield components of selected yellow flesh cassava under varying environmental conditions (Delacy et al., 1996; Yan et al., 2000; Yan and Rajcan, 2002).

**OBJECTIVES**

To evaluate the performance of selected yellow cassava genotypes for total carotenoids content and yield components

**MATERIALS AND METHODS**

Eighteen cassava genotypes with three checks were evaluated in an advanced yield trial in a randomized complete block design with three replications in three locations in Nigeria (Ibadan, Ikene and Ubiaja) with varying climatic and soil conditions. Growth performance, reaction to pests and diseases were monitored periodically while yield related traits (fresh root weight, fresh yield, harvest index, dry matter content and total carotenoids content (TC) were determined at harvest, twelve months after planting (12MAP). Data generated were subjected to statistical analysis using proc GLM procedure in SAS for analysis of variance (ANOVA) and best linear unbiased prediction (BLUP).

**RESULTS**

Results showed highly significant effects (p<0.01) due to genotypes (G), environments (E), and G X E interaction for fresh yield (FYLD), dry matter (DM) and total carotenoid content (TC) by iCheck™. Genotype IBA1300279 (9.74 t/ha) and IBA130807 (9.73 t/ha) recorded the highest dry yield (dyld). The highest TC was recorded by IBA130046 (12.5 µg/g fresh wt.), IBA130076 (12.3 µg/g fresh wt.) and IBA130799 (12.0 µg/g fresh wt. but with low dry weight of 3.22 t/ha, 4.54 t/ha and 4.97 t/ha, respectively. This resulted in a high negative correlation (r=-0.71) between clones means for dry yield and carotenoid content. However, some genotypes were identified to have high TC with high yield and reasonable DM such as IBA130044 (TC=9.1 µg/g fresh wt., dyld=7.07 t/ha) and IBA130078.

**CONCLUSION**

The study identified promising genotypes that could be advanced to the next breeding stage, while others with potential as parents for hybridization were also identified.

**ACKNOWLEDGEMENT**

Performed on behalf of the International Institute of Tropical Agriculture (IITA), Nigeria.

**REFERENCES**


**Table 1: Analysis of Variance for cassava genotypes (t/ha) across 3 environments**

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>DF</th>
<th>TC iCheck</th>
<th>Fresh root yield</th>
<th>Dry matter content</th>
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<td>GEN</td>
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<td>67.02*</td>
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**Table 2. Best Linear Unbiased Prediction (BLUP) estimate of genotypes performance across 3 environments**

<table>
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<tr>
<th>s/n</th>
<th>Genotype</th>
<th>Cassava Mosaic Severity</th>
<th>Fresh Yield (t/ha)</th>
<th>Dry Matter (%)</th>
<th>Dry Yield (t/ha)</th>
<th>Total carotenoids content (µg/g Fresh weight)</th>
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