(i) Variation in response to pests and diseases, root yield and yield related traits among cassava genotypes in derived savannah agroecology

This research work commenced in 2014 in Ibadan to assess two populations of cassava genotypes for yield and related variables. Some cassava varieties grown by farmers in Nigeria were developed and evaluated at few locations in Nigeria before they were released to farmers. These locations sometimes do not represent all the agro-ecological zones where cassava is cultivated in the country. Therefore, there is need to evaluate the existing cultivars in order to screen them for resistance to prevailing pests and diseases, yield and yield related variables in each agro-ecological zone. The first year experiment was set up in 2014 and harvested in 2015. The second year experiment is ongoing to validate the result obtained in the first year. The result will help in identifying cultivars to be used as parents in breeding programmes for improvement of cassava for different traits in the future and also enable recommendation of the best cultivars to cassava farmers in the derived savannah agroecology. This research will be completed in 2016.

(ii) Variation in yield and yield related traits of ten cassava varieties harvested at different age

Ten cassava varieties are currently being evaluated for storage root yield and related traits at 8, 10 and 12 months after planting (MAP). Cassava cultivars are usually recommended for release to farmers based on evaluation at 12 MAP, but the crop hardly grows actively for 12 months on most farmers' field in cassava growing belts of Nigeria due to seasonal effects. Some farmers may therefore decide to harvest before 12 MAP, hence, the need to evaluate cassava cultivars at different harvesting age for root yield and qualities. This will enable the farmers to decide on cultivars to be grown and the best age to harvest such cultivars for optimum yield. Some of the traits being evaluated in this study are response to pests and diseases, dry storage root yield, stem cuttings productivity, gari yield and starch content. This study commenced in 2014 and will be completed in 2016.

(iii) Improvement of cassava for carotene content and plant architecture

This study is aimed at addressing and alleviating the widespread hidden hunger and poverty among cassava farmers in Nigeria and other cassava growing countries which are mostly developing nations. The economy in the developing countries is heavily dependent on agriculture, hence, increased productivity and improved food quality will ensure considerable improvement in livelihood of farmers' household. The objective of this work is to develop high beta-carotene cassava varieties (with at least 15µg/g total carotene content) with desirable plant architecture (late and less branching) suitable for prevalent cropping system in Africa. Two high beta-carotene varieties with undesirable architecture and two white root cultivars with desirable plant architecture are being crossed to develop six breeding populations. The progeny will be evaluated for root yield, plant architecture, carotene content and other quality traits in Ibadan at seedling, clonal, preliminary and advanced evaluation stages. The promising genotypes will be evaluated in a multi-locational trial in Nigeria and the outstanding ones will be nominated for on-farm trials. This research work commenced in May 2015 and will be completed in 2022.