

## STABILITY, SAMPLING VARIATION AND COMPARISON OF QUANTIFICATION OF CAROTENOIDS CONTENT IN SEEDLING AND CLONED CASSAVA PLANTS

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CIAT implemented a rapid cycling scheme to shorten the breeding cycle. As new segregating progenies are evaluated in the field at 10-11 months of age, selected genotypes are crossed and/or self-pollinated if at all possible. Quantification of carotenoids contents in these plants are made, therefore, of plants obtained from botanical seed whose (seminal) root system is different from those of cloned plants (adventitious roots). Only one plant per genotype is available since plants come from botanical seeds. A large experiment was conducted to quantify variation in carotenoids content considering plant to plant variation within the same genotype and root to root variation within the same plant. A total of 35 genotypes were selected because their contrasting levels of carotenoids content and evaluated. Results were encouraging regarding the relationship between quantifications in the seedling and in the cloned plants. In general quantifications in the seedlings were about 1-2  $\mu\text{g}$  higher than in the cloned plants. It is not clear if this is because of differences in the age of the plant, changes in the laboratory making the quantifications or environmental factors. In many cases the plant to plant variation and the root to root variation within a plant were negligible. Across the experiment average TCC in cloned plants was 8.20  $\mu\text{g}$  and the average standard deviation was only 1.27  $\mu\text{g}$ . This variation is slightly higher than that measured earlier (Chávez et al, 2008, Journal of Root Crops 34(1) 43-49), most likely because the earlier study was based on germplasm that had much lower average carotenoids contents. In few cases there was a clear difference in the performance of the two plants representing each genotype but little difference among the three roots harvested from each plant. In five genotypes variation was relatively large for the between plants and between roots from the same plant components.

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