

SELECTION OF SWEET CASSAVA ACCESSIONS WITH HIGH CONTENT OF CAROTENOIDS

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Cassava is a drought-tolerant, staple food crop grown in tropical and subtropical areas where many people are afflicted with undernutrition, making it a potentially valuable food source for developing countries. Efforts to add nutritional value to cassava by increasing the contents of protein and carotenoid are underway. The aim of this study was to evaluate the carotenoid content and cyanogenic compounds in cassava. The thirty five cream or yellow accessions of the Germplasm Bank of Embrapa Cassava and Fruits were evaluated. Five or six cassava roots of each variety were harvested in the experimental field of Embrapa. The experiment was conducted with nine plants of each genotype (three repetitions). The carotenoid content ranged from 0.2 to 13.2 $\mu\text{g g}^{-1}$, while the cyanogenic compounds ranged from 6.0 to 161.7 $\mu\text{g HCN g}^{-1}$ fresh weight, with a mean of 3.5 $\mu\text{g g}^{-1}$ and 67.3 $\mu\text{g HCN g}^{-1}$ fresh weight, respectively. Of the 35 accessions, only two showed carotenoid content of 11.0 $\mu\text{g g}^{-1}$ (BGM 1137) and 13.2 $\mu\text{g g}^{-1}$ fresh weight (BGM 367). The 26 genotypes had cyanogenic compounds content lower than 100 ppm of HCN. The BGM 367 and BGM 1137 accessions showed 9.8 $\mu\text{g HCN g}^{-1}$ and 161.7 $\mu\text{g HCN g}^{-1}$ fresh weight, respectively. When evaluated simultaneously for carotenoid and cyanogenic compounds contents, the accession BGM 367 had suitable quality to be used as sweet cassava with high carotenoid content. The results contribute for directing the actions of the Embrapa cassava breeding program.