



First Scientific Meeting
of the
Global Cassava Partnership GCP-I



**Cassava:
Meeting the Challenges
of the
New Millennium**

**Institute of Plant Biotechnology for Developing Countries
IPBO, Ghent Univ.
21-25 July 2008, Ghent, Belgium**

SP07-09

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Development of cassava cultivars with high iron and zinc contents in roots

This work aimed to quantify iron and zinc contents in yellow cassava genotypes. Iron and zinc contents in roots of 72 cassava landraces selected for total carotenoids in roots were quantified. A group of 172 hybrids of Family 2003, 136 hybrids of Family 2004, and 40 hybrids of Family 2005, all with yellow roots were also evaluated. Contents for iron in landraces ranged from 0 to 56.5 mg.kg⁻¹ with an average of 9.17 mg.kg⁻¹. In the family 2003, the average content was 8.2 mg.kg⁻¹ with values ranging from 0 to 51.1 mg.kg⁻¹. In the family 2004, the average content was 13.1 mg.kg⁻¹ with values ranging from 1.0 to 77.5 mg.kg⁻¹. In the family 2005, the average content was 23.80 mg.kg⁻¹ with values ranging from 20.54 to 30.65 mg.kg⁻¹. The zinc contents of the landraces ranged from 0 to 26.2 mg.kg⁻¹ with an average of 4.14 mg.kg⁻¹. In the Family 2003, zinc content ranged from 0 to 34.1 mg.kg⁻¹, with an average of 5.2 mg.kg⁻¹. In the Family 2004, the values ranged from 0.5 to 87.1 mg.kg⁻¹, with an average of 12.50 mg.kg⁻¹. And, in the Family 2005, zinc content ranged from 1,97 to 34,38 mg kg⁻¹, with an average of 7,94 mg.kg⁻¹.

SP07-10

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Variation in starch and root quality traits in cassava

There is wide variation in the description of starch quality traits for cassava and little variation had been reported until recently. CIAT, therefore, initiated a project to evaluate and screen for starch quality traits in the entire germplasm collection. High value traits (for example, amylose-free starch and high-protein content) have been identified. Up to now, starch samples from more than 4000 accessions (3272 landraces and 772 improved clones) from the cassava germplasm collection have been obtained and analyzed. The size of this sample is very large and the information it provides very robust. Average dry matter content of the landraces was 32.8% whereas for improved clones it was 36.7%, but starch content was the same (84.5%). Cyanogenic potential ranged from 14 to 3274 ppm for an average of 325 ppm. Averages for landraces were slightly higher (339ppm) than in improved clones (267 ppm). Total sugars and reduced sugars were 3.68 and 1.25, respectively (landraces) and 4.05 and 1.56 (improved clones). Average amylose content was 20.7% across all the genotypes evaluated. There was little variation between landraces and improved clones for water absorption (4.59%); water solubility (2.17%); easy cooking (2.80 min); pasting temperature (65.2°C); maximum viscosity (777 cP); breakdown (298 cP); and consistency (156 cP). Clarity of the gels was 44.5% for landraces and 48.1% for improved clones.