

## SIGNIFICANT REDUCTION OF POST-HARVEST PHYSIOLOGICAL DETERIORATION IN HIGH PVAC CASSAVA

Nelson Morante<sup>1,2</sup>, Teresa Sánchez<sup>1,2</sup>, Juan Carlos Pérez<sup>1,2</sup>, Fernando Calle<sup>1,2</sup>, Hernán Ceballos<sup>1,2</sup>

<sup>1</sup>International Center for Tropical Agriculture (CIAT); <sup>2</sup>HarvestPlus.

In November 2008 samples of cassava roots from genotype GM 905-66 were harvested and shipped to Iowa, USA to conduct bioavailability studies. This genotype produces roots with average total carotenoids content around ten micrograms and beta-carotene around 7.5 micrograms. Just by accident two roots from this genotype were left on a desk and maintained at room temperature through the end of the year holidays. In February 2008 the roots were cut and, surprisingly, they did not show any symptom of post-harvest physiological deterioration or PPD. Cassava roots spoil one or two days after harvest as a result of this PPD which is an induced reaction from the plant and not the result of infectious agents. PPD remains a major problem for cassava because it means that it needs to be processed or consumed 2-3 days after harvest. In practice this means high marketing prices for cassava roots, and frequent losses that for the poor farmers mean a major setback. Previous research had demonstrated that there was a delay for the onset of PPD in yellow cassava roots but of only one or two days at best. This earlier report was based on a generation of cassava germplasm that had not benefited from the breeding efforts that allowed producing genotypes such as GM 905-66 with a much higher carotenoids level. This early discovery prompted CIAT to conduct an *ad hoc* replicated study that confirmed earlier findings. The anti-oxidant properties of carotenoids would offer a biochemical explanation in the reduction of PPD which has been demonstrated to be an oxidative process.

**Keywords:** Carotenoids, degradation factors, *Manihot esculenta*.

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