

Evaluation of Altitude Cassava for the Starch Production in Colombia.

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In Cauca region (Colombia) of an altitude of (1300-2200 m above sea level ASL) cassava is grown mainly for the production of fermented starch (15 000 T/year) used in traditional bread and expended products well appreciated for the consumers (pandebono ; pan de yucca; buñuelos). The main objectives of the study is to analyze the evolution of the roots composition for new CIAT altitude cassava varieties during its grown, to evaluate the best harvest season and to point out the differences between varieties. Twenty eight genotypes has been harvested in two villages (1740 m); Popayan, and Cajibío, the dry matter-content (DM), density, starch content, starch extraction yield, cyanide content, sensory evaluation of the roots and the functional properties of the starch has been evaluated in four different cropping seasons (12 ;13 ;14 ;15 months). Dry matter-content varies from 32 and 45% (x=38%). Starch content varies between 52 and 95% (x=82%). The starch extraction yields varies between 61 and 99% (x = 89,3%). This study shows that all cassava altitude varieties have low cyanide content (30-360 ppm), most of them qualify to be eaten fresh. Globally, the varieties have good taste features. According to the functional properties of starch, cassava starch grown in altitude shows a higher viscosity, two picks in the amylogram profile and a lower pasting temperature in relation to the world collection diversity. Swelling power of highland genotypes starch at 75 °C no present differences with genotypes grown at 1000 m asl (around 30 g*g), solubility was lower : 6% instead of 11% . Clarity of gel was higher for highland genotypes: 57 % , in comparison with 49% .

The parameters DM, density and starch extraction yield, as the sensory evaluation value are highly correlated together (t-Pearson; 0,01). This assay proves that the parameters of dry matter-content and density of roots are the best indicators for its maturity calculation. This essay will allow in the future recommending the most appropriate varieties to the small holders, producers and consumers in the Cauca region and others tropical altitude countries.