

POST-HARVEST TECHNOLOGIES WITH BIOFORTIFIED CROPS TO IMPROVE NUTRITIONAL STATUS OF POOR, VULNERABLE RURAL AND URBAN HOUSEHOLDS IN COLOMBIA

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AgroSalud is a project that aims to reduce malnutrition and improve food and nutrition security in Latin America and the Caribbean, through the production and consumption of biofortified crops of cassava, sweet potato, maize, rice and beans. The post-harvest component of the project, led by Clayuca and Embrapa Agroindustria de Alimentos RJ, is based on the identification and validation of technologies for the generation of food products based on the biofortified crops. Cassava and sweet potato varieties developed by CIAT and CIP respectively, were selected and characterized by their high content of beta-carotene, iron, zinc, high-quality protein, good agronomic yields and high dry matter. Various processing technologies were adapted based on the use of flours processed by different techniques including drying, milling, cooking and extrusion. For each process line, several food products were developed, whose acceptance was assessed by their sensory attributes and method of preparation. The flour and the food products produced were evaluated to determine the content of beta-carotene and retention for the different processing conditions, in order to validate the techniques for obtaining food products of higher nutritional quality. The contents of protein, iron, zinc, and tryptophan were also assessed, according to the raw material used. The best results, based on the content of beta-carotene, were: cooked mass > raw flour = pre-cooked flour > extruded flour, for intermediate products and juices > flour-based drinks > croquettes > bread for the food ready for consumption. Some work was also conducted with the company Pampa Ltda in Cali, Colombia, to develop foods with marketing potential, one of them was "Mazamorra El Choclo" generated with maize QPM white. Food products generated during the project can be promoted and distributed at low cost in food aid programs aimed at school children and pregnant and lactating women from countries in greatest nutritional risk, including Colombia.

Keywords: Food products, processing, nutrients, beta-carotene.

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