PRACTICE ABSTRACT nº 35

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Quinoa debittering process and formulation of a "Mandazi" flour

Quinoa (*Chenopodium quinoa* Willd.) is a pseudocereal loaded with nutrients and bioactive compounds that have functional properties (Morillo et al., 2022). Quinoa has a high nutraceutical potential because of the presence of secondary metabolites called saponins, which have industrial and medicinal uses and protect against attacks by pathogens. These compounds are found especially in the seed coat and give the grain a bitter taste emanating from the saponins in its seed coats. The bitterness must be eradicated before formulation of food products.

Since the nutritional value of quinoa is excellent closely matching that of milk and soy beans, it is a great choice for promoting nutritional security in Arid and Semi-arid regions of Kenya. FoodLAND Project has introduced the food crop in Kitui County where child malnutrition rates are high. The project's intervention for school going children involved a school supplementary feeding program, that entailed blending of quinoa (70%) with wheat flour (30%) to produce a nutrient-dense food supplement (deep fried mandazi). Therefore, there is need to debitter the quinoa seeds so as to eliminate the bitterness. The aim of this practice abstract is to highlight the processes of debittering and product formulation for quinoa based supplementary food inform of mandazi snack. This will also involve sensory testing of the mandazi made using quinoa flour blended with a little amount of wheat flour.

Processing flow for making quinoa-based mandazi for malnutrition reduction in school children

Debittering by washing with water

Drying in dry air oven at 60°C

Milling quinoa using a blender for laboratory scale) and hammer mills (for pilot scale)

Blending quinoa (70%) and wheat flour (30%)

Blending quinoa Dough preparation, molding and cutting of mandazi shapes

Deep frying with a shallow pan

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