Puree Production and Products for Sweet Potato

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Summary

Processing of sweet potato tubers into puree and its utilization for baked and fried products allows to make the food staple available all year round, and offers an avenue for commercialization and local business development. Orange-fleshed sweet potato (OFSP) puree provides a cost-effective and healthy alternative to wheat flour as it can substitute 30-60% of the flour in a wide range of processed foods, whereby reducing production costs and increasing nutritional value.

Technical Description

Fresh tubers of sweet potato tubers perish rapidly, but when turned into puree the food is shelf-stable. Making puree from sweet potato tubers can be done with common small-industrial food processing equipment. Vacuum-packed storage technology with preservatives furthermore permits the puree to be stored at 23 degrees Celsius for up to four months, enabling widespread use of the processed food by bakeries and vendors.

Uses

Puree can be used for baking breads, buns, muffins, cup cakes, cookies and chapatti, or fried products like doughnuts and mandazi, as well as concentrated products such as baby food, porridge, soups and smoothies.

Composition

Puree of orange-fleshed sweet potato has a high pro-vitamin A content, and food products that are made with using OSFP puree are more nutritious than common wheat-based foods. Sensory testing of processed purees and their manufactured end-products has demonstrated a high public acceptance of appearance, aroma, texture and taste.

Means of application

The process to make sweet potato tubers into puree is relatively simple to implement. It requires for quality roots from local farmers, cleaning the fresh tubers and steaming them, removing the peels, and mashing or pureeing the flesh.

Agroecologies	All Agroecologies.
Regions	Africa.
Developed in Countries	Kenya, Malawi, Mozambique, Rwanda.
Available in	Kenya, Malawi, Mozambique, Rwanda.
Solution Forms	Equipment.
Solution Applications	Market innovation.
Agricultural Commodities	Sweet Potato.
Target Beneficiaries	Small-scale farmers, Commercial farmers.

Commercialization

Commercialization Category

Commercially available

Startup Requirements

1) Availability and continuous supply of quality OFSP roots, 2) Good supply chain management from farm to processing plant, 3) Information sharing with producers and processors to align expectations and roles, 4) Technical backstopping to factory staff and extension service providers, 5) Training of farmers in quality standards and post-harvest handling, and 6) Consumer awareness and demand creation among farmers, producers, and consumers.

Production Costs

A study in Kenya found that the cost of producing OFSP puree amounted to USD 0.53 per kilogram in a cottage sized facility, which is below the current production cost of wheat flour at USD 0.61 per kilogram. Increasing the boiler equipment could decrease the manufacturing costs of sweet potato puree to USD 0.36 per kilogram.

Customer Segmentation

Cooperative and industrial food processors ???

Potential Profitability

In Kenya it was found that a net profit margin of 18% can be achieved in a simple facility, and can go up to 42% when increasing the boiler capacity. Trade projections

suggest that Sub-Saharan Africa will import 35.4 million tonnes of wheat by 2050, or about 80% of its demand. Sweet potato puree technology is creating large opportunities to replace these imports with locally produced ingredients, generating additional income and jobs.

Licensing Requirements

No license needed??

Innovation as Public Good

Regional public good, International Potato Center is responsible for breeding.

Solution Images


BAKERY
BREAD
400g

Institutions

Accompanying Solutions

Orange-fleshed sweet potato, Community-based cutting production, Tent-style greenhouse production of vines and cuttings, Raised bed production and weed management, Specially blended fertilizers, Relay intercropping of legumes with sweet potato, Silage production from sweet potato vines