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**Up-scaling Millet Grain Sourdough Technology and
Extruded Snacks for Sustainable Livelihood in West Africa**



M-BoSs
Millet Sourdough Project

CHALLENGES

West Africa is however blessed with many agricultural substrates with potential for use in baking. One of such substrates, millets are commonly grown in the country where they are processed into flour for making traditional thick and thin porridges, steam-cooked products like couscous, and non-alcoholic and alcoholic beverages. They have not been widely used in bread and extrusion making because they lack the structure-forming protein, gluten, present only in wheat. However, the use of sourdough technique is known to improve the baking potential of non-wheat flours.

OBJECTIVES

1. To develop and promote commercializable novel millet

sourdough products using baking and extrusion technology adaptable to West African production.

2. To determine the effect of consumption of millet sourdough bread and extruded snacks on the nutritional and health status of school children in selected West Africa countries.

3. To determine the shelf life of millet sourdough bread and extruded snacks during storage.

4. To assess the prevalence of celiac disease in the selected countries.

5. To build capacity and promote training of bakers, SMEs and other beneficiaries.

6. To assess economic viability of the transferred millet sourdough and extrusion technology for value addition to whole grain millet.

INNOVATION

The innovative component of this project is the production of millet sourdough using pearl variety. This sourdough is to be used to produce bread and extruded snacks that would be used to improve the nutritional status of school children. Extrusion technology is particularly important for obtaining processed foods that are stable to temperature variation and safe of microorganism. As it is easy to store with not need of refrigeration, therefore low energy is required. The technique can be adopted by small and medium industry of small farmers' organization. Also the versatility of use blends of cereals, legumes and even dehydrated local fruits nutritionally combined can provide snacks, ready-to-prepare flours and ingredients for

bakery. In association with bakery, extruded and milled millet can be flour with functional property that would reduce the dependence of wheat in bakery process.

ADDED VALUE

To increased utilisation of indigenous millet varieties for bread and snacks making. The use of wholegrain sourdough technique will produce more nutritious, more flavour-intense and low-glycemic index bread.

STRATEGY

The first step in the actualization of the objectives of this project is the preparation of millet sourdough, which is different from the traditional African fermented cereal product and this will be used in making bread and extruded snacks. Dough yield will be calculated after mixing all ingredients. A modification of the sponge and batter methods will be used as obtained in previous Marketplace project. Five (5) different mixtures will be developed comprises of millet sourdough and wheat flour for the bread and extruded snack production in the various proportions: (90:10); (80:20); (70:30); (60:40); (50:50). The bread, extruded baked and fried snacks will be examined for various nutritional parameters and used as part of a school feeding programme in the 3

countries and the nutritional status of the school children assessed on before and after basis

DELIVERY CHAIN MAP

