

26. HOME SCIENCE

FOOD PROCESSING TECHNOLOGIES

Utilization of rice bran in traditional breakfast foods

- ❖ Rice bran is a byproduct of rice, obtained on polishing. The bran is a rich source of protein, essential fats, B and E vitamins, minerals, fiber and antioxidants.
- ❖ Rice bran extracts in water can be used as a fiber free nutrient that has a lot of health giving properties.
- ❖ The rice oil is high in mono- and polyunsaturated fatty acids.
- ❖ Rice bran extracts can be used in a variety of preparations like bakery products and beverages.
- ❖ The Home Science College has standardised the preparation of flavored milk with the incorporation of rice bran extract.
- ❖ This beverage has antioxidant properties besides the soluble vitamins and proteins of bran.
- ❖ The heat stabilized bran can be incorporated in putt mix, ready to cook idiappam mix and spaghetti, thus increasing the nutritive value of these products.



Sorghum Flakes

- ❖ Nutritionally superior to rice flakes.
- ❖ Ideal breakfast and snack food.
- ❖ Simple and low cost processing technique.
- ❖ Quick to cook and easily digestible.
- ❖ Good source of minerals and fibre.
- ❖ Sorghum flakes (100 g) contains 8.6 g protein, 3.7 g fat, 1.5 g fibre, 69 mg calcium and 16 mg iron.



Samai Biscuits

- ❖ Little millet (samai) is a good source of minerals, B vitamins and fibre.
- ❖ Fat, iron and niacin content are higher in little millet, than in other cereals.
- ❖ Calcium, phosphorus and iron content of samai biscuits are 25.8, 150 and 4.21 mg/100g respectively.
- ❖ High in fibre (1.40 %), and is important as health food.
- ❖ Has a shelf life of upto nine months.



Health Mix for Geriatrics

- ❖ The health mix designed for the aged was formulated from cereals, millets, pulses, and vegetables.
- ❖ In combination with milk powder and jaggery improved nutritional status of selected elderly subjects.
- ❖ Significant increase in haemoglobin level.
- ❖ The health mix (100 g) furnished 12 g protein, 2 g fat and 482µg β carotene.



Millet based health food mix

- ❖ Can be used for preparing nutritious balls and beverages.
- ❖ Easily digestible and good for children and aged persons.
- ❖ Health mix (100g) contains 9.75% moisture, 16.61% protein, 3.69% crude fibre,
6.19 % reducing sugar 9.67 % total sugar, 20.68mg calcium, 244.00 mg phosphorous, 5.35 mg, potassium, 7.57 mg iron and 5.32 mg zinc.
- ❖ Has good storage stability.



Khakra



- ❖ Khakra is Indian flat bread.
- ❖ Traditional food of Gujarat, simulating chapathi in terms of product formulation and is further toasted to a moisture content of 5-6%.
- ❖ Incorporated with defatted soya flour (25%), the product is a rich source of protein.
- ❖ Addition of defatted soya flour increases protein (70%), iron (50%) and calcium (36%)

The product has a shelf life upto 90 days at room temperature.

Puffed Soya

- ❖ Puffing of soya reduces antinutrients and improves bioavailability of nutrients.
- ❖ Rich source of protein.
- ❖ Easily digestible and ideal protein source for vulnerable groups.
- ❖ Provides 32%protein.
- ❖ Low moisture content (6%).
- ❖ Has storage stability upto two months.



Okara Mix



- ❖ Okara is a by-product obtained during the processing of soy milk.
- ❖ Cheap source of protein and can be used to enrich traditional food products.
- ❖ Fresh okara contains 80% moisture, 13.7% protein, 1.5% fat, 4 % carbohydrate and 2% fibre.
- ❖ The processed okara in the ready to use form finds application in the preparation of traditional foods, bakery and confectionery products.
- ❖ Okara mix has a shelf life of 4 months.

Soya milk Fruit Juice

- ❖ Blending fruit juice and soya milk improves nutritive value and sensory quality.
- ❖ Rose and mango flavoured soya milk is highly acceptable.
- ❖ Contains 4 g protein, 2 g fat, 78 mg calcium, 21 mg phosphorous and 1.5 mg iron per 100 g of the fruit blended soya milk.
- ❖ Has a shelf life of 15 days under refrigerated condition.

Best used in nutrition intervention programmes for the vulnerable groups.



Extruded products from texturised soya protein



- ❖ Extruded products (noodles) incorporated with texturised soya protein are rich in protein.
- ❖ Addition of tomato juice further improved the quality of the noodles.
- ❖ Has good sensory appeal
- ❖ Texturised vegetable protein incorporated noodles is suitable for children.

Texturised soya noodles contains 20.3 g protein and 72 mg calcium

Millet based value added products

- ❖ Millets are miles ahead of rice and wheat in terms of their nutritional content. Millets are good source of minerals and dietary fibre.
- ❖ The nutrients present in the millets have the capacity for reducing the risk of life style diseases.
- ❖ Due to urbanization, climatic changes, erratic rainfall etc, the farmers are forced to seek alternative crops for rice.
- ❖ Forecasting the future need of our country millet based products like multigrain adai mix, multipurpose snack mix, health mix, samosa mix, karasev mix, pongal mix, priyani mix, flakes etc., were developed.
- ❖ The processed millet based products has six months shelf life and it suits the convenience seeking farmers.

Sugarcane Syrup

- ❖ Concentrated sugar cane juice.
- ❖ Alternative natural sweetener in the place of refined sugar.
- ❖ Convenient and ready to use, has wide application in the preparation of traditional, bakery and confectionary products.
- ❖ Sugarcane syrup (100 g) contains 43 mg calcium, 42 mg phosphorus and 2 mg iron.
- ❖ Has a shelf life of twelve months at room temperature.

At Home Science College and Research Institute, a Food Processing Training Center was established by installing the processing equipments namely Murukku machine, Sieving machine, Mixture machine, Steaming machine, Tray wrapping machine, Handy induction sealing machine, Continuous sealing machine, Nitrogen flush vaccum packaging machine, Pulveriser, Extruder, Milk Extraction unit, Cabiner drier and other processing accessories to train the entrepreneurs, farmers, SHGs on processing of millets based value added products. The equipments are available to the budding entrepreneurs on rental basis to utilize the facilities.