



भारत
ICAR

VALUE ADDED PRODUCTS FROM BANANA



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Banana is one of the most important fruit crops of India. India is the largest producer of bananas in the world with a production of approximately 16.91 million tonnes annually from an estimated area of 4,90,000 hectares. Although, more than fifty cultivars are being commercially cultivated in India, only a few have a significant role in trade. 'Dwarf Cavendish' is the ruling variety of banana trade in India. However, there are several location specific cultivars like Rasthali, Ney Poovan, Poovan, Nendran, etc.

Banana is a highly perishable fruit owing to its high moisture content and climacteric nature. However, the post-harvest losses in banana can be reduced by applying appropriate processing technique and converting them into semi-perishable product. The processing of banana adds value to the produce where the farmer or trader can get a better price for the produce. Most of these value added products of banana are shelf stable for 3-6 months. Important value added products developed at NRCB are described.

Chips/Crisps

Banana chips are mainly produced using Nendran variety of plantain. However, other varieties like Zanzibar and other pink fleshed bananas also are suitable.

Nendran fruits of approximately 80% maturity are harvested and deheaded. The fingers are peeled, treated with 1% potassium metabisulphite, cut into slices of 1.2-0.8 mm thickness and deep fried in a suitable cooking oil, preferably coconut oil. Upon frying, this will yield crisp, yellow coloured chips which are sprinkled with common salt and packed in

polyethylene bags. Generally they have a storage life of 30-35 days under ambient conditions.

Banana Fig

Banana figs are dried or dehydrated banana fruits with sticky consistency and very sweet in taste. Fully ripe banana fruits of variety 'Karpuravalli' or 'Dwarf Cavendish' are peeled, treated with 1% potassium metabisulphite solution and dried either in sun or oven at 50° C for 24 hours. These figs are packed in polyethylene bags or any other suitable containers. They have a shelf life of about 3-4 months under ambient conditions.

Banana Flour

Banana flour is prepared from mature green bananas which have a high starch content.

The unripe fruits are blanched, peeled, treated with 1% potassium metabisulphite and sliced. The slices are dehydrated and powdered in a mixer or grinder to yield a good consistency and free flowing flour. It can be used as nutritious adjuvant in several food preparations like bread, cakes, biscuits, health drink and baby food formulations. It can also be blended with other cereal flours for making chapaties and roties. It is easily digestible than other cereal flours. It has some medicinal property to cure ulcers. Under cool and dry conditions, it can be stored upto one year without any adverse change in their composition.

Banana Powder

Banana powder is prepared from fully ripe banana fruits after peeling, pulping, homogenizing and spray drying at a temperature of 30-32° C and less than 30% R.H.

It can also be produced using drum drier where the temperature should not exceed 94°C. The moisture content of final product should be around 2-4%. This product has got high market value as it is extensively used in confectionary industry, ice cream preparations and baby food making. When suitably packed, it will have a shelf life of more than 6 months.

Banana Puree

The ripe banana fruits, preferably 'Dwarf Cavendish', are peeled, pulped, homognized, deaerated, flash pasteurized and packed into sterile aseptic bags of varying capacity under high pressure of steam. It is used subsequently in the manufacture of dairy products such as yogurts, milk shakes, ice creams, baking breads and cakes and also in making banana flavoured drinks. On a small scale, it can be produced by pulping in a pulper and pasteurizing at 85° C followed by treating with 2000 ppm potssium metabisulphite and packed in sterile air tight containers. Prior to use, the puree must be heated to release the excess sulphur dioxide. Under laboratory conditions, it was observed a shelf life of 3 months at room temperature.

Banana RTS Juice

Since banana puree is very thick, juice can not be directly obtained from it. Therefore, the puree is treated with pectolytic enzyme and clear juice is obtained through filtration or centrifugation. This clear juice is decanted and diluted 2 ½ times with water. The final total soluble solid content is adjuste to 16° Brix and acidity of 0.3%. Then it is pasteurized, filled into sterile bottles and sealed by crown cork. The sealed bottles are processed at 100° C for 20 minutes, cooled and stored. This product has a

shelf life of about 6 months at room temperature.

Banana Fruit Bar

Banana fruit bar is a confectionary item prepared from ripe banana fruit of any variety. It is made by homogenizing banana pulp, sugar, citric acid and pectin in suitable proportions and dehydrating the mass in a ghee coated tray at 70° C in an oven till it sets into a sheet. It is then cut into suitable size and packed in polyethylene pouches.

Banana Biscuits

Banana biscuits are made by mixing 60% banana flour and 30% maida. The dough is made using flour mixture and suitable proportions of sugar, dalda, baking powder, milk powder and essence. These biscuits are very tasty and highly nutritious.

Banana Jam and Jelly

Banana jam is made by cooking the fruit pulp with sugar along with pectin and citric acid in right proportions till it gives a good set. Several varieties of banana are suitable for making jam. This product has a good commercial value and good market.

Banana jelly is a semi solid product prepared by boiling clear strained fruit extract free from pulp after addition of required amount of sugar, citric acid and pectin. A perfect jelly should be transparent, attractive and sparkling in colour with strong flavour of fruit.

Banana Wine

Banana wine is produced by fermenting the enzyme treated clear banana juice with wine yeast *Saccharomyces cerevisiae* var. *ellipsoideus*. The fermentation is carried out for about 14 days at

24-26° C and then the wine is filtered, clarified, bottled and pasteurized. The pasteurized wine is stored in bottles for aging. The alcohol content of banana wine varies from 9-12%.

Alcohol from Banana peel

Banana peel alcohol is produced by macerating the ripe banana peel, followed by acidification, saccharification and fermentation. The fermented must is filtered and distilled to obtain the commercial grade alcohol.

Health drink and Baby food

A highly nutritious and tasty health drink formulation and a baby food formula has been developed at NRCB using banana flour/powder after supplementing with suitable natural sources of proteins, minerals, vitamins and fat. It has got a shelf life of about 6 months and is suitable for children and adults.

Banana Fibre

Banana fibre is extracted from the dried petioles and pseudostem of the banana plant. The banana fibre can be used in the preparation of special kind of papers, ropes, threads, baskets, toys and several fancy items.

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