Recent Trends in Banana By-Products and Marketing Strategies: A Critical Review

Dr. Prashant P. Bornare¹, Dr. Dheeraj S Deshmukh², Dipak C. Talele³

¹Assistant Professor, S.S.B.T.’s, College of engineering & Technology, Bambhori, Jalgaon, M.S., India  
²Professor, S.S.B.T.’s, College of engineering & Technology, Bambhori, Jalgaon, M.S., India  
³Assistant Professor, S.S.B.T.’s, College of engineering & Technology, Bambhori, Jalgaon, M.S., India  
Email: ¹ppbornare79@gmail.com, ²deshmukh.dheeraj@gmail.com, ³taleledeepak190687@gmail.com

Abstract: Recent trend in Banana processing and by-products are reviewed for utilizing it in a better way. Since problem of malnutrition exists almost in the world. While fruits are excellent food supplements, their agricultural production is specific to meteorological conditions and soil type. Fruit processing is a boon of science and technology with multiple benefits. It has made it possible to transport the fruit overseas in the form of products. It has made them all season available. Apart from this it is a potential source of employment generation. For developing countries like India fruit processing has bright prospects. Banana is the major fruit of India having world largest production. However a nominal 2% of it is processed. Hence there is a tremendous scope for enhancing its processing. In fact Banana processing can play vital role in Indian economy. The present paper highlights the major products of banana processing and global marketing potentials.

Key words: Banana, fruit processing, economy.

Introduction:

In modern days food preservation has become of a science based on latest developments in science and technology and food processing is a growing industry in many countries including India.

Fruits and vegetables are important supplements to the human diet as they provide the essential minerals and vitamins and fiber required for maintaining health. India ranks first in production of fruits and second in production of vegetable in the world. However, this abundance of production is not fully utilized and about 25-30% of wastages occur at various stages of fruit handling and distribution (Patil et al 2009). India produced about 62.86 million tons of fruits and 122.25 million tons of vegetables in 2006-07 (UNCTAD 2010; Narayana et al 2007).

Graph No.1: States in India Vs Production (in Thousand MT)

Graph No.2: States in India Vs Productivity (MT/ Ha.)

Though India is the largest producer of fruits and vegetables in the world, only less than 2% of the total production is processed. In other countries the percentage of processed fruits are very high. Thailand processes (30%), Brazil and USA (70%), Philippines (78%) and Malaysia (83) (www.ikisan.com).
There is a tremendous scope for export of processed value added products of fruits and vegetables. During 2006-07, around 797481.55 MTS various processed fruits and vegetables valued at Rs. 2502 crores were exported from India (Babhulkar N N 2009). The prime position of India in the production of fruits and vegetables provides us an unlimited potential to capture the vast export market of the world in the processed fruits and vegetables. The enormous Indian population also constitutes the potential consumers of processed foods (Roy et al 2000). With increasing urbanization, rise in middle class purchasing power, change in food habits and dying out of the practice of making preserves and pickles in homes, there is an increasing demand for factory made jams, jellies, fruit beverages, dehydrated foods, pickles etc. in the domestic market.

Therefore, it is needless to say that food processing sector in general and fruit processing industry in particular is still a sunrise area which holds tremendous potential both for revenue generation and for employment opportunity (Tripathi et al 2000).

India is the largest producer of banana in the world with a production of approximately 20.86 million tons from an area of 6.00 lakh hectares (www.ikisan.com). Out of this amount only 3-4% of banana is processed. The most popular processed product is Nendran chips, which is still in cottage scale while some bigger manufactures are processed banana puree for export. However, there is scope for converting banana into several other processed products like figs, jam, jelly, powder, Flour, baby food, health drink, RTS beverages, wine, alcohol, sauce, pickles, chutneys, animal feed, fiber etc. several processing technologies for value added banana products have been developed at National Research Center for Banana, Trichy. Some of the common banana products are discussed below (Rethinam 2008):

A. By- Products from Banana:

1. Chips/Crisps: Nendran fruits of approximately 80% maturity are harvested and demanded. The fingers are peeled, treated with 0.1% potassium metabisulphite and cut into slices of 1.2-0.8 mm thickness and deep fried in suitable cooking oil, preferably coconut oil. Upon frying this will yield crisp, yellow colored 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. Packing the chips in laminates with nitrogen gas can extend its life up to 4 months. Several other verities of banana chips like flavored, sweet, sweet and sour, tomato flavored, with pepper, etc. are also catching up in the market.

2. Banana Fruit Candy/Stem Candy: Banana fruit candy made from nendran with jiggery and ginger are widely sold in market in Kerala state. Banana stem (true stem) can also be made into candy through osmotic dehydration process followed by sun drying.

3. Banana Fig: Banana figs are dried or dehydrated banana fruits with sticky consistency and very sweet taste. Fully ripe banana fruits of variety ‘Karpuravalli’ or ‘Dwarf Cavendish’ are peeled, treated with 0.1% potassium metabisulphite solution and dried either in sun or oven at 50°C. 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.

4. Banana Flour: Banana flour is prepared from mature green bananas, which have a high starch content. 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 has some medicinal property to cure ulcers. Under cool and dry conditions it can be stored up to one year without any adverse change in their composition.

5. Banana Powder: Banana powder is prepared from fully ripe banana fruits either through drum drying or spray drying process. 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.

6. Banana Juice: Since banana puree is very thick, juice cannot be directly obtained from it. Therefore, the puree is treated with pectolytic enzyme and clear juice is obtained through filtration or centrifugation. After pasteurization and bottling it can have a shelf life of a minimum of 6 months under ambient conditions.

7. Banana Fruit Bar: Banana Fruit Bar is 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 ghee coated ray at 70° C in an oven till sets into a sheet. It is then cut into suitable size and packed in polyethylene pouches.

8. 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, saturated fat, baking powder, milk powder and essence. These biscuits are very tasty and highly nutritious.

9. Banana Jam & Jelly: Banana jam is made by cooking the fruit pulp with sugar along with pectin and citric acid in right proportions till gives a good set. Several varieties of banana are suitable for making jam. This is product, which has 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 color with strong flavor of fruit.

10. Banana Wine: Banana wine is produced by fermenting the enzyme treated clear banana juice with wine yeast viz. Saccharomyces cerevisiae var. ellipaoiswua. The fermentation is carried out for about 3 weeks followed by filtration, clarification, and bottling. The pasteurized wine is stored in bottles for aging. The alcohol content of banana varies from 9-12%.

11. Health drinks and Baby food: A highly nutritious and tasty health drink formulations and baby food formula has been developed by NRCB using banana flour/powder after supplementing with suitable natural source of proteins, minerals, vitamins and fat. It has got a shelf life of about 6 months and suitable is for children and adults.

12. Banana Fiber: Banana fiber is extracted from the pseudostem, peduncles and dried petioles and of banana plant. The banana fiber can be used for manufacture special kind of papers, ropes, threads, baskets, toys and several fancy items. The yarn made form banana fiber is much in demand for making textiles.

Conclusions:
It is quite obvious from the forgoing discussion that there is a vast scope for developing by-products of banana. The post globalization world economy gives more weightage on processing and value addition. This industry can play a vital role in the economic uplifting of the country specially the agricultural section. In fact this is going to be the second phase of green revolution. Thus, food preservation and proper low cost consumption to reduce malnutrition problem is possible through banana fruit, and it’s by-products.

References:

