



PM Formalisation of Micro Food Processing Enterprises Scheme

Processing of Strawberry Crush



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CHAPTER 1

INTRODUCTION

1.1 History of Strawberry

The garden strawberry was first cross bred in Brittany, France in the 1750s via cross of *Fragaria virginiana* from eastern north America & *Fragaria chiloensis*, which was of chile, and later run commercially ,and the first strawberry named woodland strawberry which was first cultivated in the early 17th century was replaced by this hybrid.

The strawberry fruit was mentioned in ancient Roman literature in reference to its medicinal use. The French began taking the strawberry from the forest to their gardens for harvest in the 14th century. Charles V, France's king from 1364 to 1380, had 1,200 strawberry plants in his royal garden. In the early 15th century western European monks were using the wild strawberry in their illuminated manuscripts. The strawberry is found in Italian, Flemish, and German art, and in English miniatures. The entire strawberry plant was used to treat depressive illnesses.

The new species gradually spread through the continent and did not become completely appreciated until the end of the 18th century. When a French excursion journeyed to Chile in 1712 introduced a strawberry plant with female flowers that resulted in the common strawberry that we have today. From botanical point of view it is not a berry, actually it is an aggregate accessory fruit from technically. Meaning that the fleshy part is not derived from the plant's ovaries but from the receptacle that holds the ovaries. Each apparent seed on the outside of the fruit is actually one of the ovaries of the flower, with a seed inside it.

1.1.1 Importance

Strawberry is a wonderful fruit having exceptional juiciness, vibrant flavour and immense health benefits. Strawberry contains considerable calcium, potassium, fibre, and vitamin C. It is low in fat and cholesterol. Vitamin C is the body's primary water soluble antioxidant, against free radicals that attack and damage normal cells. It is also a good source of vitamin B1, vitamin B6, copper and dietary fibre. Strawberry is a digestive aid and a natural Anti-Inflammatory fruit. It has demonstrated significant anti-inflammatory effects, reducing swelling in inflammatory conditions such as acute sinusitis, arthritis and gout and speeding recovery from injuries and surgery. Strawberry is low in calories (32 cal/100 g) and fats but rich source of health-promoting phytonutrients, minerals, and vitamins that are essential for optimum health. Strawberries have significantly high amounts of phenolic flavonoid phytochemicals called **anthocyanins** and **ellagic acid**. Scientific studies show that consumption of these berries may have potential health benefits against cancer, aging, inflammation and neurological diseases. Strawberry has an **ORAC value** (oxygen radical absorbance capacity, a measure of antioxidant strength) of about 3577 $\mu\text{mol TE}$ per 100 grams.

Fresh berries are an excellent source of **vitamin-C** (100 g provide 58.8 mg or about 98% of RDI), which is also a powerful natural antioxidant. Consumption of fruits rich in vitamin-C helps the body develop resistance against infectious agents, counter inflammation and scavenge harmful free radicals. The fruit is rich in the B-complex group of vitamins. It contains good amounts of vitamin B-6, niacin, riboflavin, pantothenic acid and folic acid. These vitamins are acting as co-factors help the body metabolize carbohydrate, proteins, and fats. Strawberries contain vitamin-A, vitamin-E and health promoting flavonoid poly phenolic antioxidants such as lutein, zeaxanthin, and beta-carotene in small amounts. These compounds help act as protective scavengers against oxygen-derived free radicals and reactive oxygen species (ROS) that play a role in aging and various disease processes. Furthermore, They contain a good amount of

minerals like potassium, manganese, fluorine, copper, iron and iodine. Potassium is an important component of cell and body fluids that helps controlling heart rate and blood pressure. The human body uses **manganese** as a co-factor for the antioxidant enzyme, *superoxide dismutase*. Copper is required in the production of red blood cells. Iron is essential for red blood cell formation. Fluoride is a component of bones and teeth and offers protection from dental caries. Earlier The entire strawberry plant was used to treat depressive illnesses.

1.2 Statistics

1.2.1 Global scenario

Globally China is the major manufacturer of Strawberry followed by United States and Mexico. They are 2.96 M MT, 1.30 M MT and 0.654 M MT, Production wise and 9.7%, 17.4% and 8.8% lead wise. Apart from these leaders - Turkey, Egypt, Spain, South Korea, Russia, Japan, Poland, Italy, Belarus, Morocco and Germany are having remarkable data of production.

1.2.2 National scenario

India is not listed amongst major producers of the of Strawberries. It is grown in Himachal Pradesh, Uttar Pradesh, Delhi, Madhya Pradesh, Jammu, Haryana, Punjab and will be started in Gujarat soon. It is also cultivated in westerns hill tops of Maharashtra, leading 85% of total of india.

1.3 Value Added Products from Strawberry

The fresh fruits have limited shelf life; therefore, it is necessary to process fresh fruits in to different value added products to increase its availability over an extended period and to stabilize the price during the glut season.

The processed products have good potential for internal as well as external trade. Seasonal losses in surplus strawberry fruits can be avoided by processing into different value added products that make them more attractive to the buyer and/or more readily usable to the consumer.

Strawberry being rich in taste can be used for preparation of natural jam and jelly. Processed strawberry pulp is an excellent raw material for preparation of juice, RTS beverages, nectar, powder, candy and preserve. In view of changing consumer attitude, demand and emergence of new market, it has become imperative to develop products that have nutritional as well as health benefits. In this context, strawberry has excellent digestive and nutritive value, pleasant flavor, high palatability and availability in abundance at little high price. Strawberry is a very popular fruit in India and it is available throughout the year except few months. The nutritive value of the fruit is very high and thus it is an ideal crop for processing and value addition. It is consumed in large quantities either fresh or in such prepared foods such as jam, juices, jellies, ice creams, milk shakes, **crushes**, Pulps, RTS, Nectars, Syrups, squashes, Juice powder, chutney, cheese, toffee, and chocolates.

In current days dried fruits or candied fruits are running fast in the market.

Artificial strawberry flavorings and aromas are also widely used products such as candy, soaps, lip gloss, perfume and much more.

Amongst the aforesaid usages Crush is the mostly used product currently.

1.4 Scope of Strawberry Industry

- ❑ Standardization of technology to bring down cost of production of fresh strawberry and its adoption by growers, assured market for the produce and to produce Strawberry throughout the year may go a long way in promoting strawberry industry in India.

Though strawberry is an excellent material to be preserved in different forms; bulk of the strawberry produced in the country is consumed in fresh form, the production used for processing being less than 10%.

The processing industry for strawberry is not very well developed in India. Major constraints in processing are as follows :

1. High cost of canning due to high cost of fruit, sugar, containers and overheads.
2. Non-availability of fruits throughout the year.

CHAPTER 2

PREPARATION OF STRAWBERRY CRUSH

2.1 Strawberry Processing

Strawberry is one of the popular fruits and is liked by majority of the people irrespective of their age group. As is the case with most of the fruits and vegetables, their availability is limited during off-seasons. Many techniques have been developed to make available seasonal fruits as well as vegetables even during off-season. The Strawberry does not lend itself well to freezing, as it tends to develop off flavors and lose texture. This fruit is highly perishable and seasonal. Hence processing is necessary. Processed strawberry is popular and is exported by many countries. During processing, nutritional quality of fruit can be affected but there are recent researches carried out which use new technologies to retain the nutritional quality of the fruit

as it. This is to meet the consumer demand for healthy, nutritious and natural products. Some of the food industries based on strawberry are described below.

2.1.1 Strawberry dried products

Dried Strawberry for processing is used in many areas such as an ingredient in confectioneries, breads and desserts. Dried fruits are often eaten directly out of the container, with yogurt, or by adding them to homemade baked goods such as cookies. They are generally added in processed foods such as snacks including biscuits, cookies, chocolates, bread, yogurt, fruit jelly, breakfast cereal, health foods, or sauce for Japanese-style pancakes. Bakery products and breakfast cereal mixes are the largest end users of dried fruit. According to the Institute of Food Technologists, dried fruits and fruit chips are the hottest trends in the snack business.

Strawberry can be dried as slices. They can be freeze dried. Fresh fruit is frozen and placed in a drying chamber under vacuum. Heat is applied and water evaporates from the fruit while still frozen.

The fruit becomes very light and crispy and retains much of its original flavor. Dried fruit is widely used by the confectionery, baking, and sweets industries. Because of its nature, organic production is highly suitable for small and medium-sized farmers working in areas which may not be suitable for large-scale food production. strawberry is one among important organic products within the segment of preserved fruit for industrial use.

Dried fruit is mainly used as a snack or in breakfast cereals, bakery products, dairy products and desserts. The types of dried fruits used and the types of processed foods applicable diversify every year. Hence greater opportunities are there for strawberry drying industries.

2.2 Current trends in Strawberry processing

Some of the processing methods using the new technologies are as follows:

i. Vacuum frying - This is a technology where food products are deep fried under vacuum or near vacuum conditions to reduce the fat content compared to normal deep-frying. It is a process that produces healthy fruit snacks (strawberry chips) which partially preserve the fruit's original color and nutritional compounds and have a high hydrophilic antioxidant capacity.

ii. Radiation processing - Under radiation processing, the food is subjected to radiation by exposing it to a source of ionising radiation. This ionising radiation usually is in the form of gamma rays from a source of cobalt-60 or from a non-radioactive source like electron beam generated from electricity. A dose of 2 kGy did not affect significantly the nutritional value as well as the sensory quality of minimally processed strawberry.

iii. Thermal processing – Thermal treatments are critical in controlling foodborne pathogens in ready-to-eat (RTE) food products. Food products are subjected to a combination of temperature (80°C to 150°C) and time (30 minutes to few seconds) required to eliminate desired number of microorganisms. It helps in the improvement of color, as a quality attribute of processed Strawberry. This is made possible by the increase in knowledge of kinetics of color change.

iv. Ultrasound drying - This is a pre-treatment for drying of strawberry. Ultrasound pre-treatment consists in immersing fruit pieces in water or in an osmotic solution and to subject the fruit and solution to ultrasonic waves (at frequencies ranging from 18 to 40 kHz) for a period of time (usually less than 60 min). Ultrasound is showed to have higher influence on

fruits with high water content (strawberries, pineapples, melons) and high content of fibers and phenolic cells.

v. Osmotic evaporation – It is the partial removal of water from plant tissues by immersion in a hypertonic (osmotic) sugar or brine solution. Water is removed by evaporation at atmospheric pressure and temperatures near the ambient temperature. The Strawberry pulp is concentrated at moderate temperatures and pressures with good nutritional and sensory qualities. This process has minor changes in the concentrated juices which makes it more preferable.

vi. High pressure technology - This method is used in food processing where food borne micro-organisms and enzymes are inactivated at low temperature, without the need for chemical preservation. It is a cold pasteurization technique which consists of subjecting food, previously sealed in flexible and water-resistant packaging, to a high level of hydrostatic pressure (pressure transmitted by water) up to 600 MPa / 87,000 psi for a few seconds to a few minutes. This is done in fruit juice processing to preserve most of the nutritional qualities similar to a fresh product.

2.2.1 Fruit Processing

Fruits are highly perishable items which needs processing to make it durable. Fruit processing is any deliberate change in a fruit that occurs before it's available for us to eat. Processing methods extend the shelf life of fruits.

Fruit processing has three major aims:

1. To make fruit safe (microbiologically & chemically).
2. To provide good quality products with good flavor, color, texture and taste.
3. To make convenient fruits products

Fruits should be prepared for preservation as soon as possible after harvesting within 4 to 48 hours. As time passes spoilage increases rapidly. Fruit processing involves many steps.

Cleaning and washing

First, the fruits should be cleaned thoroughly to remove any adhering dirt or pesticide residues. This cleaning process usually involves washing the product with running water.

Sorting

To achieve a uniformly sized product, fruits and vegetables are sorted immediately after cleaning according to their size, shape, weight or color. Sorting by size is especially important if the products are to be dried or heated, because their size will determine how much time will be needed for these processes.

Cutting

Cutting is important in order to get uniform pieces for heating, drying and packing. Fruits are usually cut into cubes, thin slices, rings or shreds. The cutting utensils have to be sharp and clean to prevent micro-organisms from entering the food.

Blanching

Blanching is a slight heat treatment, using hot water or steam that is applied mostly to fruits before canning or freezing. It is done by immersing fruits in water at a temperature of 90-95°C. The result is that fruits become soft and the enzymes are inactivated. Blanching is done before a product is dried in order to prevent unwanted color and odour changes and an excessive loss of vitamins.

2.3 Fruit Preservation

Fruit preservation is the process of treating and handling food to stop or slow down fruit spoilage, loss of quality, edibility or nutritional value and thus allow for longer fruit storage.

Preservation usually involves preventing the growth of bacteria, fungi (such as yeasts), and other micro-organisms as well as retarding the oxidation of fats which causes rancidity. Fruit preservation can also include processes which inhibit visual deterioration, such as the enzymatic browning reaction in apples after they are cut, which can occur after fruit cutting.

Many processes designed to preserve food will involve a number of fruit preservation methods. Preserving fruit by turning it into jam, for example, involves boiling (to reduce the fruit's moisture content and to kill bacteria, yeasts, etc.), sugaring (to prevent their re-growth) and sealing within an airtight jar (to prevent recontamination).

Maintaining or creating nutritional value, texture and flavor is an important aspect of fruit preservation.

Preservation methods

Drying

Drying is one of the most ancient fruit preservation techniques, which reduces water activity sufficiently low to prevent bacterial growth. Drying is the partial removal of water from solid foods. It is one of the oldest methods of food preservation. It was traditionally carried out in the presence of sun.

Refrigeration

Refrigeration preserves fruit by slowing down the growth and reproduction of micro-organisms and the action of enzymes. Refrigerators should be set to below 4°C to control the growth of

micro-organisms. This lowered temperature also reduces the respiration rate of fruits and retard the spoilage.

Commercial and domestic refrigerators improved the shelf life of foods such as fresh fruits and salads to be stored safely for longer periods, particularly during warm weather.

Vacuum packing

Vacuum-packing stores food in a vacuum environment, usually in an air-tight bag or bottle. The vacuum environment strips bacteria of oxygen needed for survival, slowing spoiling. Vacuum-packing is commonly used for storing dried fruits to reduce loss of flavor during oxidation.

Freezing

Freezing is also one of the most commonly used processes commercially and domestically for preserving fruit including prepared fruit stuffs which would not have required freezing in their unprepared state. Lowering the temperature below the freezing point of the product stops microorganisms from growing and reduces the activity of enzymes. Fruits are heat treated (blanched) before freezing to eliminate enzymes. Home freezers are held at -10°C, commercial freezers are under -18°C. At this temperature, the growth of micro-organisms is almost stopped.

Pasteurization

Pasteurization is a process of heating a product at a specific temperature for a controlled period of time to destroy the most heat resistant vegetative pathogenic organism. The process is also applied for fruit juices and juice products.

Canning

Canning involves cooking food, sealing it in sterile cans or jars and boiling the containers to kill bacteria.

2.3.1 Importance of Sugar & Preservatives in Fruit Preservation

Sugar is used to preserve fruits, either in syrup with fruit such as apples, pears, peaches, apricots, plums or in crystallized form where the preserved material is cooked in sugar to the point of crystallization and the resultant product is then stored dry. This method is used for the skins of citrus fruit (candied peel) and ginger.

Preservative / food additives can be antimicrobial; which inhibit the growth of bacteria or fungi, including mold or antioxidant; such as oxygen absorbers, which inhibit the oxidation of fruit constituents. Common antimicrobial preservatives include calcium propionate, sodium nitrate, sodium nitrite; sulfites (sulfur dioxide, sodium bisulfate, potassium metabisulfite, etc) and antioxidants which include BHA (Butylated Hydroxy Anisole) and BHT (Butylated Hydroxy Toluene).

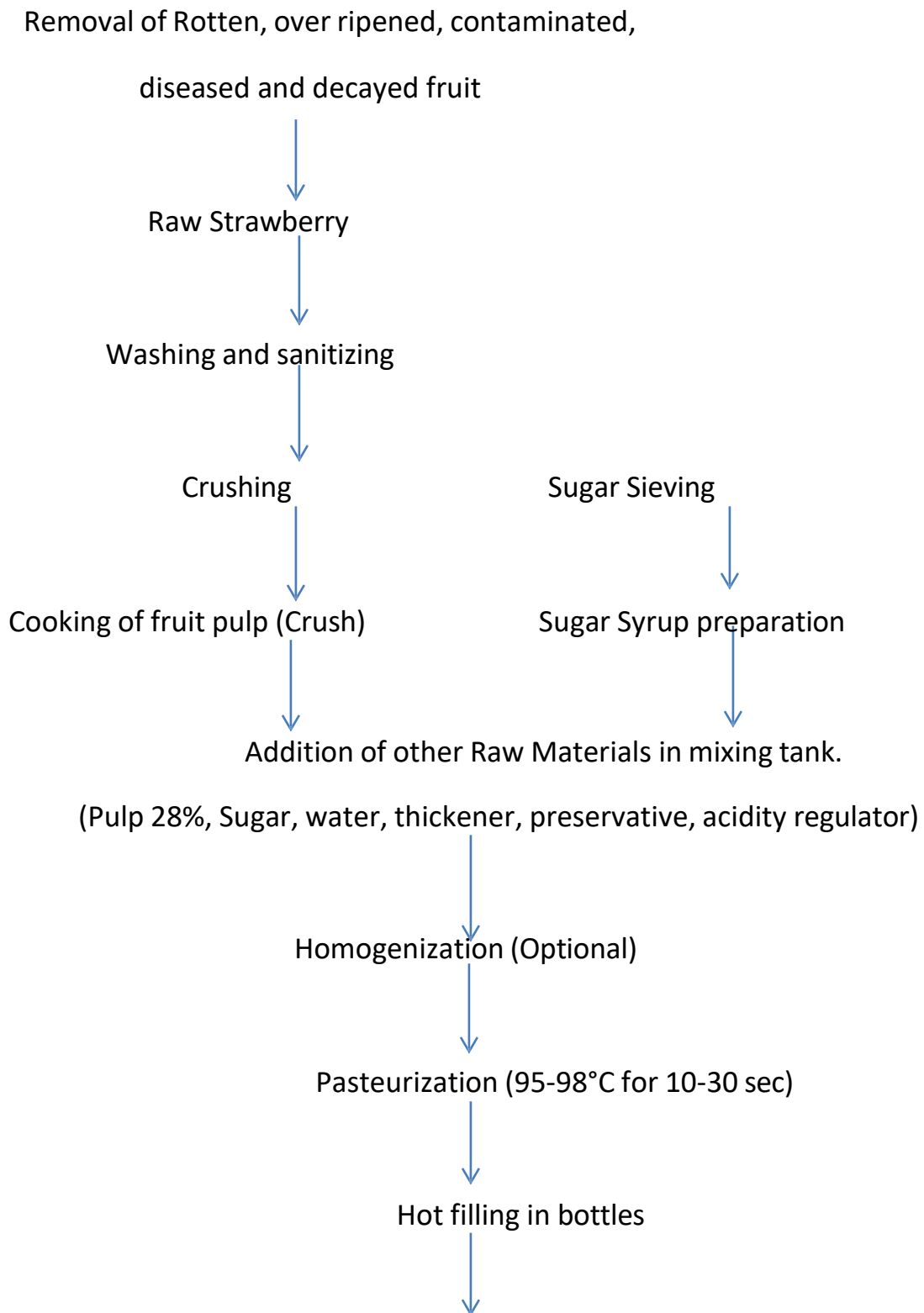
Storage

Always store the preserved food in a cool place, at a temperature below 20°C. Keep glass bottles and jars out of light. The storage area has to be dry and with a consistent temperature. Moisture will make tins rust.

2.4 Formulation of Strawberry Crush :- A typical crush formulation.

Ingredient	% by Mass
Sugar	45.99
Strawberry	25.75
Water	27.59
Pectin	0.46
Citric acid	0.09
Sodium benzoate	0.09
Flavor	0.02
Color (Ponceu 4R)	0

2.4.1 Flow chart for Strawberry Crush



Storage in Dry place

2.4.3 Equipment involved



Crusher Machine



SUGAR Syrup Preparation and storage tanks



Ingredient blending and mixing tank.



Pasteurization Unit

CHAPTER 3

PACKAGING OF STRAWBERRY CRUSH

3.1 Characteristics of Crush

Fruit crushes are more prone to perish in open, unhygienic condition.

The factors that lead to spoilage of crushes are highlighted as below:

Crystallisation

The sugar component of most of the crushes are in a soluble form and it is essential that this form be maintained, Moisture interchanges play a major decisive role in deciding the shelf-life of this like products. growth of microorganisms and also drying characteristics and product formulation and package selection.

Odour Absorption

Odour absorption by oils and fats can also be a problem. Odorous compounds are often very soluble in oils and fats and can be readily absorbed from materials such as paints, printing inks, petroleum oils and disinfectants. When the product is eaten, the odors are released in the mouth producing objectionable flavors. crush can also deteriorate in other ways including exposure to heat, light, molds, yeast, foreign odors and mechanical damage.

3.2 Packaging material used for Crush items.

Factors to consider include product damage, fines, stickiness, bag opening size, re-closure among other things.

Packaging:-

The Enclosure of products, items or packages in a wrapped pouch, bag, box, cup, tray, bottle or other container to perform the following function: Containment; Protection; and/or preservation; communication and Utility of performance.

The packaging requirements....

- Absolutely leak-proof and prevent contamination
- Protects the contents against chemical deterioration
- No pick up of external flavors
- Be hygienic and safe
- Economical, easy to use and dispose
- Process
- Maintain product composition & quality at full shelf-life.
- Pack size, printing options, display etc.
- Satisfy legislation requirement
- Free From pin holes from supplier side.

Packaging materials for Fruit Products...

Glass : Chemically inert & Will not affect the quality, odor or taste of the product. It is strong, rigid & 100 % recyclable.

PET (Polyethylene terephthalate) : lightweight, flexible & recyclable, it can be used for both still & carbonated products.

Metal Cans : Including aluminium & steel, are mainly used for carbonated drinks. They are 100% recyclable & lightweight.

Cartons : Major packaging format for still drinks & fruit juices. They protect the freshness, flavors and nutritional qualities of both fresh & long-life drink products, enabling distribution at ambient temperatures or under refrigerated conditions.

Tetra Packaging :

Tetra packaging material is a six-layers material as follows.

1. First layer – which seals in the liquid
2. Second layer is adhesion layer of polyethylene
3. Third layer is aluminium foils, which acts as barrier for oxygen, flavor & Light.
4. Fourth layer is adhesion layer again of polyethylene same as second.
5. Fifth layer is of paper board for stability.
6. Top layer is again of polyethylene for protection against outside moisture.

Aseptic Packages... :

- Aseptic packages are made by combining thermoplastic with paperboard and aluminium foil.
- Aluminium foil layer is strong barrier for O₂ and light.
- Inner plastic layer is made of polyethylene makes it possible to seal through the liquid.
- The outer paper layer provides the stiffness thus, enabling maximum utilization of available storage and transportation space. Excellent graphics are possible leading to good display and shelf appeal.

Packaging Materials used for Crush.

A variety of packaging materials are available, the ultimate choice of the packing depends upon the required shelf-life, performance on the filling machine and the cost which is purely based on the segment of the market targeted by the manufacturer. The most common choice of packaging medium is plastic (generally flexible) as it provides the required protection and preservation, grease resistance, physical strength, machinability and printability. Plastics being lighter in weight are, therefore, the most preferred material for packaging of crushes.

3.3 Future Trends

The candies market is one of the most competitive in the FMCG area. Major companies continuously battle to entice sweet-toothed consumers from competing brands. A strong brand The developing trends in candy packaging are:

- Widespread and increasing use of cold seal
- Use of laminated structures and cold seals for premium products
- Increasing use of opaque multi-packs for grocery outlets
- Switch over to higher yield opaque films for cost reduction
- Replacement of Al foil / paper wraps by OPP laminates
- Developments in low temperature heat seal packs

CHAPTER 4

FOOD SAFETY REGULATIONS AND STANDARDS OF STRAWBERRY CRUSH

4.1 Food Standards

4.1.2 Processed fruits

Includes all forms of processing other than peeling, cutting and surface treating fresh fruits.

4.1.2.1 Strawberry Crush

Includes all fruit pulp cooked with addition of sugar, water, suitable colors and preservatives.

FSSAI category:- it has been covered in category 4.1.2.4

Canned or bottled (pasteurized) fruit: Fully preserved product in which fresh fruit is cleaned and placed in cans or jars with natural juice or sugar syrup (including artificially sweetened syrup) and heat-sterilized or pasteurized.

1. Color Ponceu 4R is permitted as maximum 200 ppm.
2. Preservative sodium benzoate is permitted as maximum 120 ppm.

4.2 Food Safety

Part I - General Hygienic and Sanitary practices to be followed by Petty Food Business Operators applying for Registration (See Regulation 2.1.1(2))

SANITARY AND HYGIENIC REQUIREMENTS FOR FOOD MANUFACTURER/ PROCESSOR/HANDLER

The place where food is manufactured, processed or handled shall comply with the following requirements:

1. The premises shall be located in a sanitary place and free from filthy surroundings and shall maintain overall hygienic environment. All new units shall set up away from environmentally polluted areas.
2. The premises to conduct food business for manufacturing should have adequate space for manufacturing and storage to maintain overall hygienic environment.
3. The premises shall be clean, adequately lighted and ventilated and sufficient free space for movement.
4. Floors, Ceilings and walls must be maintained in a sound condition. They should be smooth and easy to clean with no flaking paint or plaster.
5. The floor and skirted walls shall be washed as per requirement with an effective disinfectant the premises shall be kept free from all insects. No spraying shall be done during the conduct of business, but instead fly swats/ flaps should be used to kill spray flies getting into the premises. Windows, doors and other openings shall be fitted with net or screen, as appropriate to make the premise insect free The water used in the

manufacturing shall be potable and if required chemical and bacteriological examination of the water shall be done at regular intervals at any recognized laboratory.

6. Continuous supply of potable water shall be ensured in the premises. In case of intermittent water supply, adequate storage arrangement for water used in food or washing shall be made.
7. Equipment and machinery when employed shall be of such design which will permit easy cleaning. Arrangements for cleaning of containers, tables, working parts of machinery, etc. shall be provided.
8. No vessel, container or other equipment, the use of which is likely to cause metallic contamination injurious to health shall be employed in the preparation, packing or storage of food. (Copper or brass vessels shall have proper lining).
9. All equipments shall be kept clean, washed, dried and stacked at the close of business to ensure freedom from growth of mould/ fungi and infestation.
10. All equipments shall be placed well away from the walls to allow proper inspection.
11. There should be efficient drainage system and there shall be adequate provisions for disposal of refuse.
12. The workers working in processing and preparation shall use clean aprons, hand gloves, and head wears.
13. Persons suffering from infectious diseases shall not be permitted to work. Any cuts or wounds shall remain covered at all time and the person should not be allowed to come in direct contact with food.
14. All food handlers shall keep their finger nails trimmed, clean and wash their hands with soap, or detergent and water before commencing work and every time after using toilet. Scratching of body parts, hair shall be avoided during food handling processes.

15. All food handlers should avoid wearing, false nails or other items or loose jewellery that might fall into food and also avoid touching their face or hair.
16. Eating, chewing, smoking, spitting and nose blowing shall be prohibited within the premises especially while handling food.
17. All articles that are stored or are intended for sale shall be fit for consumption and have proper cover to avoid contamination.
18. The vehicles used to transport foods must be maintained in good repair and kept clean.
19. Foods while in transport in packaged form or in containers shall maintain the required temperature.
20. Insecticides / disinfectants shall be kept and stored separately and away from food manufacturing / storing/ handling areas.

4.3 Labelling Standards

Labeling requirements for packaged food products as laid down in the Part VII of the Prevention of Food Adulteration (PFA) Rules, 1955, and the Standards of Weights and Measures (Packaged Commodities) Rules of 1977, require that the labels contain the following information:

1. Name, trade name or description
2. Name of ingredients used in the product in descending order of their composition by weight or volume
3. Name and complete address of manufacturer/packer, importer, country of origin of the imported food (if the food article is manufactured outside India, but packed in India)
4. Nutritional Information
5. Information Relating to Food Additives, Colours and Flavours
6. Instructions for Use
7. Veg or Non-Veg Symbol
8. Net weight, number or volume of contents

9. Distinctive batch, lot or code number
10. Month and year of manufacture and packaging
11. Month and year by which the product is best consumed
12. Maximum retail price

4.3.1 Wherever applicable, the product label also must contain the following

The purpose of irradiation and license number in case of irradiated food. Extraneous addition of coloring material. Non-vegetarian food – any food which contains whole or part of any animal including birds, fresh water or marine animals, eggs or product of any animal origin as an ingredient, not including milk or milk products – must have a symbol of a brown color-filled circle inside a brown square outline prominently displayed on the package, contrasting against the background on the display label in close proximity to the name or brand name of the food. Vegetarian food must have a similar symbol of green color-filled circle inside a square with a green outline prominently displayed.

All declarations may be: Printed in English or Hindi on a label securely affixed to the package, or Made on an additional wrapper containing the imported package, or Printed on the package itself, or May be made on a card or tape affixed firmly to the package and bearing the required information prior to customs clearance.

Exporters should review the Chapter 2 of the “FSS (Packaging and Labeling) Regulation 2011” and the Compendium of Food Safety and Standards (Packaging and Labeling) Regulation before designing labels for products to be exported to India. FSSAI revised the labeling Regulation and a draft notification to that effect was published on April 11, 2018, inviting comments from WTO

member countries and the comments received are under review and the publication date remains unknown.

According to the FSS Packaging and Labeling Regulation 2011, “prepackaged” or “pre packed food” including multi-piece packages, should carry mandatory information on the label.



Contact Us

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