

BARI Vacuum Fried Banana Chips Processing

Introduction

Banana is a popular and nutritious fruit in the world. It gives energy to the body. The fruit is rich in sugars, vitamins A,B,C, calcium and iron. It is cheaper than other fruits and are available almost all year round. Lack of improved processing and handling technology leads to quantitative and qualitative loss of banana fruits. Processing of banana into fried chips is a simple preparing technique through which a significant amount of postharvest loss of banana should be minimized and the entrepreneur can earn money by preparing fried banana chips product. Vacuum frying (VF) method has incorporated a new dimension in the Snacks Processing Industry to provide healthy and safe fried chips. Generally, fruits/vegetables having higher sugar content are browned when chips fried into oil at a temperature between 150-160°C or higher. Research findings has shown that uncontrolled oil temperatures produce excessive carcinogenic substance 'acrylamide' in fried chips products, which lead to cancer in the human body. In developed countries, vacuum fryer is used to prepare chips products from different fruits and vegetables commercially, which helps in preparing quality fried chips while reducing the health risks. VF is an advanced method where the quality of the fried chips is maintained at lower temperature with pressure. Quality banana chips should be prepared to create vacuum at certain temperature and pressure by controlling temperature of the cooking oil. Although this technology is new in our country but it is widely used in producing fried chips from various fruits and vegetables commercially.

Key Features/Objectives of the Technology

- To prepare quality banana chips using vacuum frying technique.
- Value addition of green banana through processing and reduction of post-harvest loss.
- To create new entrepreneurs by connecting family employment and accelerating income.

Required Materials and Equipments

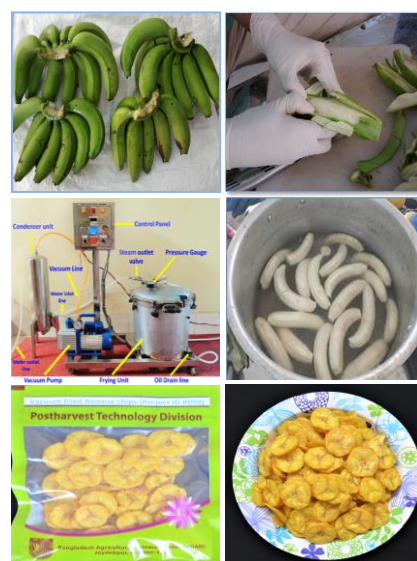
- BARI Kola-1 /Meher Sagar/Nepali Sagar raw banana
- Boti or stainless steel (SS) knife
- Hand slicer
- Measuring jars/containers
- Net/strainer/chalni
- Large bowl/saucepan
- Lemon juice /citric acid
- Soybean oil
- Sugar, bit salt and mixed spices (turmeric powder, garlic powder, chili powder etc.)

Processing Method

- Matured and uniform size of raw banana of BARI Khola-1/Meher sagar/Nepali sagar will be selected and then peeled with a slicer or SS knife.
- Now peeled bananas should be soaked into citric acid (1 gm/L water) or lemon juice (1/4 part of 1 pc lemon/L water) mixed water.
- Bananas should be sliced into round pieces with a hand slicer (3-4 mm thick) and will be soaked into 5% turmeric powder mixed water for 30 minutes. Bananas should also be sliced longitudinally.
- Then soaked banana slices will be kept in a net/strainer to remove water from the surface of the raw chips.
- Now the vacuum pump will be switched on and should be kept raw chips (500-600 gram/batch) in the frying chamber and then covered the lid and will be fried for 8-10 minutes.
- Before starting frying, the oil temperature should be set at thermostat system between 110-130°C.
- In order to separate the excess oil from fried chips product, immediately the chips with basket will be placed in the de-oiling machine for 1-2 minutes.
- After de-oiling completed, the banana chips should be mixed with salt and spices to serve where the chips will be attractive in color, healthy and safe products.
- The fried chips should be packed in polypropylene packet or foil pack and then flushed with N₂ gas and sealed the packet well that will be used commercially.

Precautions

- It is required to select the appropriate maturity of green banana into fried chips products.
- Raw sliced chips will be fried properly according to the set temperature with frying time.
- The fried chips in suitable packet should be sealed properly for long time storage.



Steps for Preparing Banana Chips



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