

Research Paper :

Study of effect of different packaging material on quality of coconut chips

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ABSTRACT

An experiment was carried out at Department of Agriculture Process Engineering, College of Agricultural Engineering and Technology, Dr. B.S.K.K.V., Dapoli to study preparation and quality of coconut chips. Coconuts of *Banawali* variety were selected for preparation of chips. Firstly sweetened coconut chips were prepared for the study. By using sugar syrup sweetened coconut chips were prepared. Bags of different packaging materials like Polyethylene, low density polyethylene and aluminium foil were used and by using hand sealing machine every packaging material was packed with different number of sealing strips after filling with coconut chips. 20 g quantity was used for filling each bag. Some of the samples of coconut chips were kept open to the atmosphere as control samples. After every 10 days interval observations for moisture content and peroxide value were taken. After three months of storage these samples were kept for the organoleptic. It was found that irrespective of the packaging material moisture content and peroxide value of coconut were increased in case of every treatment of packaging. Sensory evaluation showed that the coconut chips stored in the aluminium foil having polyethylene bag inside with four sealing strips were having more average overall acceptability score and lowest increase in the moisture content and peroxide value.

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The coconut palm (*cocos nucifera* L.) is widely known as the "Tree of Heaven or Kalpavriksha". The bounded relationship between a common man and the coconut palm can be perceived from the use of the coconut and its products in his social and cultural life. The area under coconut cultivation is 1.93 million hectares with the production of 15840 million nuts. As coconut is not grown in all places, it is transported to such regions either as whole coconut or in partially dehusked form.

The dehydrated coconut chips are ready to eat and can be used as snacks. Osmotic medium for preparation of chips may be salt or sugar (Vennila and Pappiah, 1998). By using sugar syrup sweetened coconut chips are prepared. There are different flavour can be used with sweetened coconut chips such as vanilla, pineapple, lemon etc. By using salt solution salty coconut chips can be prepared. Packaging is one of the most important unit operations in the processing to increase the shelf life of the commodity or the processed product (Roopa *et al.*, 2006). The main function of a package is to contain the product and protect it against a variety of hazards which might adversely affect its quality during handling, distribution and storage. In the packaging process packaging materials plays very important roll. Use of improper packaging material may cause the effect on the nutritive value of the food product, cash value of the product and also the storage life of the food product. The

good packaging material must be inert it should not have any reaction with the packed food because it may contaminate the food.

METHODOLOGY

An investigation was carried out to study effect of different packaging materials on quality of coconut chips. Coconuts of *banawali* variety were selected for the study. The details of materials used and methods adopted in course of investigation are given below.

'*Banawali*' variety of coconut was used for preparation of coconut chips. potassium metabisulphate was used for blanching of coconut chips while its preparation. The sugar was also used for the experiment and it was purchased from local market. The packaging materials like polyethylene bags, low density polyethylene bags, aluminium foil bags and aluminium foil bags having Polyethylene bag inside were selected for packaging of coconut chips.

Instruments:

Tray dryer available in the Grain Processing Laboratory was used for drying of coconut chips. Refractometer was used for measurement of total soluble solids of the sugar solution. Coconut chips were sealed by the sealing machine. Weighing machine was also used for experiment. A precision balance was used to measure