

ISSN : 0976-4550 Received: 16th August-2012 ISSN : 0976-4550 Revised: 19th August-2012 Accepted: 23rd August-2012 Short Communication EXPLORING INDIGENOUS METHOD OF PRESERVING THE CUT FRUITS USING DIFFERENT LEAVES

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ABSTRACT: Phenolic compounds occur in all fruits as a diverse group of secondary metabolites. When cut fruits are exposed to oxidation leads to browning reactions. Browning of fruits and fruit products is one of the major problems in the fruit industry and is believed to be probably the first cause of quality loss during postharvest handling, processing and storage. Browning can also adversely affect flavor and nutritional value. Hence the present study has been undertaken to explore the indigenous method of preserving cut fruits in the refrigeration. The cut fruits of apple is rapped in 7 types of leaves such as Badam leaf, Banana leaf, Lotus leaf, Mandarai leaf, Papaya leaf, Pumpkin leaf and Teak leaf and kept inside the fridge, simultaneously a control of cut fruits were also maintained .The results were quite interesting to note that cut fruits of apple wrapped in lotus leaf and banana leaf delayed the browning process till 7 days the browning started only from 8th day of preservation. Indicates that theses two leaves can be used for preservation of cut fruits .whereas fruits wrapped in other leaves showed browning from the second day it self. This type of study can be further extended to explore the active ingredient present in the aforesaid leaves will help us to a most viable indigenous method to preserve the cut fruits in large scale. **Key words**: Indigenous, Cut fruits, leaves

INTRODUCTION

The dream of many producers is to obtain naturally long lasting fruits. Until that dream becomes reality, they will fill the fruits with all kinds of additives to look healthy and fresh, even if they stay on the shelf for months. The moment when the cut fruits are exposed to oxygen ,poly phenol oxidase enzyme in the chloroplast rapidly oxidize phenolic compounds to form browning polymers. The reaction takes place between amino acids and reducing sugars present in the juice, decreasing the alpha-amino nitrogen content followed by undesirable color, odor, and flavor changes (Pribella and Betusova, 1978; Toribio and Lozano, 1984). The same behavior was found in pear juice concentrate (Cornwell and Wrolstad, 1981), citrus juices (Kanner et al., 1982; Cornwell and Wrolstad, 1981), and intermediate moisture foods (Resnik and Chirife,

1979; Waletzko and Labuza, 1976).Color deterioration was reported for many fruit products, such as citrus juices (Reynolds,1965; Kanner et al., 1982; Cornwell and Wrolstad, 1981), intermediate moisture foods (Waletzko and Labuza, 1976; Johnson et al., 1969; Czapski, 1975), and apple juice (Toribio and Lozano, 1984, 1986).Although there are other chemical methods are in practice in controlling the browning raction in apples the natural methods are not much explored.Hence the present work has been designed to explore the efficacy of locally available leaves in preserving the cut fruits by inhibiting the browning reaction.

MATERIALS AND METHOD

Leaves such as Badam leaf, Banana leaf, Lotus leaf, Mandarai leaf, Papaya leaf, Pumpkin leaf and Teak leaf were collected from the local source to explore its efficacy in storing the cut fruits. Clean leaves were used to cover the cut fruits of apple and kept inside the refrigerator. Simultaneously cut fruits were kept in a bowl uncovered inside the refrigerator. Thr fruit package is observed on every alternative day to see the browning due to the oxidation of phenolic compounds present in the fruits. The results were tabulated for further discussion.

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RESULTS

The results were quite interesting to note that uncovered control fruits started showing browning within 8 hrs of preservation inside the refrigerator. Whereas fruits covered with leaves showed browning only after second day till 8^{th} day of preservation.Out of seven leaves selected for the study ,lotus and banana leaf showed maximum preservation capacity because browning started appearing only on 8th day of preservation indicates its high efficacy in preservation. Regarding other leaves it has not shown any significant results because the browning started appearing from the second day of preservation.[Table 1 Fig 1-7].

Table No 1									
Sl No	Types of leaves	0^{th}	2 nd	4^{th}	6^{th}	8 th	10 th	12^{th}	14^{th}
1	Badam leaf	-	-	+	+	+	+	+	+
2	Banan leaf	-	-	-	-	+	+	+	+
3	Lotus leaf	-	-	-		+	+	+	+
4	Mandarai leaf	-	-	+	+	+	+	+	+
5	Papaya leaf	-	-	-	+	+	+	+	+
6	Pumpkin leaf			+	+	+	+	+	+
7	Teak leaf		+	+	+	+	+	+	+



Fig No 1



Fig 3



Cut fruits on 2nd day 4th day 7th day respectively

Lotus leaf [Fig 4-7]



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Appearance of cut fruit on 4th, 6th and 8th day respectively

DISCUSSION

Browning is the major problem in preservation industry and fruit juice extraction units because mask the natural flavour and colour of the fruit .Although there are many methods are in practice it is necessary to identify a natural method to preserve the cut fruits to preserve their natural flavour and colour.It is evident from the study that banana leaf and lotus leaf has high preservative effect in preserving cut fruits. The efficacy in preservation is well advocated in the tabular column and photographs. This type of study form a base to the biotechnologist to find out a natural way of preservation of cut fruits and full fruits. This type of natural preservation will certainly fetch good revenue to the industrialist because the natural flavour and colour of the fruit is maintained for a long time with out the interference of browning reaction.

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