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# STUDIES ON THE STORAGE OF TENDER COCONUTS

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Out of the 6000 million coconuts produced annually in India more than 3% are consumed in the form of tender nuts. In West Bengal about 60% of the production of nuts is consumed as tender nuts. They are valued for their milky fluid, which makes refreshing drink and the gelatinous kernel also is a delicious edible substance. The tender kernel is eaten with sugar or jaggery and beaten rice. The tender nut water is reported to have laxative and diuretic properties and claimed to destroy internal worms.

It is reported that water from fresh tender coconuts can be used for intravenous injections or drips to children suffering from gastro-enteritis. It contains most of the essential minerals like sodium, potassium, calcium, magnesium, iron, copper and certain essential aminoacids. The kernel is a source of proteins, minerals, carbohydrates, vitamins, aminoacids and fat.

The tender nuts are in much demand during the dry months of the year namely January-May. In big cities like Bombay and Calcutta there is great demand and sale for tender coconuts. They are very often used only for their water and the valuable kernel is thrown away. So far there are no data as to how long the tender nuts could be stored without spoilage. Some people keep them in the open and some in water.

Since a large number of tender nuts are consumed for their water content a study was undertaken to find out as to how long the tender nuts can be kept without the water and kernel getting spoiled.

Four bunches of tender nuts from four trees containing more than 8 nuts and more or less alike in point of maturity, shape and colour were harvested and stored by different methods as given below:

1. *Open*: Tender nuts were kept on a dealwood box and exposed to the atmosphere.

2. *Water*: Nuts were kept in water—Nuts were immersed only partially. The water was changed every day.

3. *Sand*: The nuts were kept vertically in 8 cm layer of sand in a dealwood box and the box was filled with sand so that there was a 15 cm layer of sand above the nuts.

4. *Buried*: Nuts were kept in a pit of 45 cm depth and of 60 cm length and width in the field. The pit was covered with platted coconut leaves and a 3 cm layer of loose sand added leaving a 3 cm square hole for aeration of the nuts. Two stored nuts were examined from each treatment at a time. The different methods of storage of tender nuts were repeated three times.

## Observations

The data of the observations are given in Table 1. The volume of nut water and weight of kernel portion varies from nut to nut in the same bunch and between different bunches of different trees. The water of the tender nuts kept in the open was good to taste only upto 88 hrs (3-4 days) and thereafter it became sour. The water of the nuts kept in the water was found to be sour when tasted after 40 hrs. Nuts stored in sand remained good for 112 hrs (4-5 days). The water of the nuts stored in pits was good only upto 40 hrs.

So from the studies it can be seen that tender coconuts kept in sand remain good for 4-5 days and the nuts kept in the open for 3-4 days and more are not found to be good for consumption.

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**Table 1** — *Tender nut characters*

	After 40 hours					After 64 hours					After 88 hours				
	Nut water			Kernel		Nut water			Kernel		Nut water			Kernel	
	Volu- me cc	Acidi- ty @	Taste & condi- tion	Wt. gm.	Taste & condi- tion	Volu- me cc	Acidi- ty @	Taste & condi- tion	Wt. gm.	Taste & condi- tion	Volu- me cc	Acidi- ty @	Taste & condi- tion	Wt. gm.	Taste condi- tion
Open	294	5.3	Sweet	79.5	Good	282	4.8	Sweet	75.5	Good	346	5.8	Sweet	77.2	Good
Water	296	7.1	Sour	108.0	Good	336	8.0	Sour	105.9	Spoiled	278	5.0	Sour	95.0	Spoiled
Sand	372	7.2	Sweet	83.6	Good	222	8.3	Sweet	134.2	Good	234	4.6	Sweet	150.7	Good
Buried	388	5.5	Sweet	57.4	Good	448	5.5	Sour	54.1	Good	398	5.5	Slightly sour	65.2	Good

@N/10 potassium hydroxide (CC) required to neutralise 50 cc of nut water.

**Table 1** *Tender nut characters—(Contd.)*

	After 112 hours					After 160 hours					After 184 hours				
	Nut water			Kernel		Nut water			Kernel		Nut water			Kernel	
	Volu- me cc	Acidi- ty*	Taste & condi- tion	Wt. gm.	Taste & condi- tion	Volu- me cc	Acidi- ty*	Taste & condi- tion	Wt. gm.	Taste & condi- tion	Volu- me cc	Acidi- ty*	Taste & condi- tion	Wt. gm.	Taste & condi- tion
Open	230	5.2	Slightl sour	109.3	Good	350	4.7	Slightly sour	90.0	Good	282	4.3	Sour	91.8	Good
Water	318	6.4	Ferment- ed	167.8	Spoiled	212	8.3	Putre- fied	113.6	Spoiled	306	4.8	Putre- fied	204.2	Spoiled
Sand	230	8.5	Sweet	198.2	Good	234	5.4	Sour	136.6	Good	224	4.0	Sour	156.4	Good
Buried	456	6.0	Sour	151.5	Spoiled	426	5.4	Fer- mented	125.0	Spoiled	426	5.7	Fer- mented	82.4	Spoiled

\*N/10 potassium hydroxide (cc) required to neutralise 50 cc of nut water.

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*Editor*