

Technology Description

Sequential toddy & nut production (SCTNP) technology which produces toddy and nuts from the same spathe of the palms has provided the farmers to increase farm income without sacrificing the copra products and fully maximize the economic potential of the palms with the addition of another product which is the coconut sap or toddy. It has high total sugar, ascorbic acid, phosphorus, and rich in amino acids, vitamins and minerals. It can be an alternative source of sugar and other products like sap drink (fresh cooled beverage), coco nectar (syrup) and sap vinegar which are high value food products.

Tapping & harvesting of toddy

Tapping is done twice a day. Harvesting of toddy can be done in morning (taken before 8 am) for the production of 'tuba' or vinegar while for the production of fresh sap drink, nectar and sugar, it is best to used the afternoon harvest (taken not later than 3 pm) which is sweeter than the morning harvest. To produce sweet toddy, it is necessary that all tools and containers to be used should be clean at all times. Adding of lime to the receptacle prevents the sap from fermentation.

Toddy processing

The conversion of toddy into sap drink, coco nectar and sugar involves a simple operation. As the coconut sap is highly perishable due to the yeast microflora, the harvested sap should be immediately processed by boiling for 1/2 hour in a large cast iron pan. This process prevents the sap from fermentation.

Sap Drink

This can be simply done immediately by pasteurizing (heating at 60°C) the toddy.



The toddy is then poured separately in the desired container tightly sealed and placed in the refrigerator. If hygienically

prepared, the sap drink can be stored until 3 days without deterioration.

Coco Nectar/Syrup

Further boiling of toddy until it reaches 110°C temperature or sticky under a moderate to very low heat. The sticky liquid shall be allowed to cool then poured into a desired container.



Coco Sugar

Boil coco sap to evaporate the water under moderate heat with occasional stirring until liquid thickens at 115°C. Remove it from the flame when it begins to become very sticky. Continue mixing until it becomes granular. Air dry the brown sugar before placing them in a packaging material.



Sap Natural/Organic Vinegar

Pour toddy in a wide large container with a clean netted cover to allow aeration and prevent entrance of dirt and foreign objects. After 5-10 days fermentation period in a well ventilated room., the sap can be harvested as vinegar. To maintain the desired quality of the matured vinegar (with at least 4% acidity), pasteurize it by boiling for 5-10 minutes at 60-65 °C, allow the vinegar to cool before placing in very clean bottles and then cover tightly and sealed.



EXPECTED INITIAL INCOME OF COCO SAP PRODUCTS (PhP)

Per 30 trees per month production

Particulars	Coconut sap products (Options)				
	Fresh sap	Vinegar	Syrup	Sap Drink	Granulated Brown Sugar
Est. harvest(30 trees)	60 li	60 li	60 li	60 li	60 li
% Recovery	100	80	17	70	15
Production – 30 trees	1,800 li	1,440	306	1,260	270 kg
Suggested Selling Price	5/li	10/li	10/200 ml	5/350 ml	P30/kilo
Gross Income	9,000	11,520	15,300	18,000	8,100
Material Cost	2,100	2,020	1,830	2,410	455
Processing Cost	-	337.5	1,350	775	1,687.5
Total Cost	2,100	2,357.5	3,180	3,185	2,142.5
Net Income	6,900	9,162.5	12,120	14,815	5,957.5
Return on Invest.(%)	328	388	380	465	278

- **S**imple, practical, feasible and economically viable
- **C**ompensating income can be derived due to diverse products
- **T**oddy products are organic and healthy foods
- **N**ew products that are less costly
- **P**romotes family labor

FOR ADDITIONAL REFERENCES:

- Sequential Coconut Toddy and Nut Production (SCTNP) Technology, TechnoGuide Sheet No. 1, PCA, Agric. R&D Branch, Davao Research Center
- Naka, Peyanoot. 1996. Potential of producing sugar from Coconut. In *Promoting Multi-Purpose uses & Competitiveness of the coconut. Proceedings 26-29 Sept 1996 IPGRI*
- Ticson, S.G., Sancha, L.V., Magat S.S. Sugar from Coconut Sap in Relation to Nut Production: A Review. Diliman, Quezon City: ARDB, 1997. 53p. (R&D Tech.1 Report No.4)

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*Producing High Value
"Organic and Green" Foods from*
Coconut Sap
at Village Level



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