

# Diabetic friendly Neera Cookies

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**S**nacks can be part of a healthy meal plan and a great source of quick energy. They help prevent hunger between meals and overeating at meal times.

India, the world's second most populous country, now has more people with type 2 diabetes (more than 50 million) than any other nation. With India having the highest number of diabetic patients in the world, the sugar disease is posing an enormous health problem in the country. Calling India the diabetes capital of the world, the International Journal of Diabetes in developing countries says that there is alarming rise in diabetic patients in India. According to a WHO fact sheet on diabetes, 2004 recorded an estimated 3.4 million deaths due to consequences of high blood sugar. WHO also estimates that 80 per

cent of diabetes deaths occur in low and middle income countries and projects that such deaths will double between 2005 and 2030.

It is known that having healthy snacks between main meals will help maintain the glucose levels in diabetic patients. Cookies made with Neera jaggery is fit for this purpose since its GI is very low. Diabetic friendly cookies are made with whole wheat, desiccated coconut or grated coconut and neera jaggery. Different types of cookies with oats and multigrain are also possible as a main content.

Neera Jaggery is derived from the sap of coconut inflorescence. It has been used as a traditional sweetener for centuries in regions where coconut trees flourish, such as Southeast Asia and is superior to cane jaggery. Coconut jaggery is

also rich in amino acids, B vitamin complex and minerals.

One of the biggest attraction of Neera and it's value added products are its low glycemic index score of 35, which is comparable to most fruits and vegetables. Consequently, these products have little impact on blood sugar levels, making it suitable for diabetics, pre-diabetics and anyone else who wants to avoid blood sugar spikes. Most other sugar substitutes, including maple syrup and honey, have a high GI score of 69 or more, while refined sugar itself can often reach 90s!

## Recipe (for 15kg or 1000 cookies)

### Ingredients:

- |                              |   |        |
|------------------------------|---|--------|
| 1. Wheat flour               | - | 5.00kg |
| 2. Butter                    | - | 3.25kg |
| 3. Jaggery (Powdered)-       |   | 5.00kg |
| 4. Grated coconut/Desiccated |   |        |

Nutritional Information		
Sl.No	Parameters	Per 100g (%)
1	Carbohydrate	38.85
2	Protein	6.86
3	Fat	40.90
4	Minerals	0.28
5	Fibre	2.51

### Draft plan to set up a plant for Neera Cookies

#### Basic assumptions:

1. Capacity of plant = 40 kg of cookies (2700 cookies) per shift
2. Cost of ingredients/ cookie = Rs. 3.55/-
3. Selling price of cookies = Rs. 85/ 100 g cookies

No	Item	Amount (Rs. in Lakhs)
1	Land (10 cents)	Leased
2	Building (2000 sq. feet @ Rs. 1000/sq. feet)	20
3	Other civil works (internal roads, compound wall, water tanks+ neera jaggery making unit)	2
4	Machinery and Equipment	13.49
5	Electrification	0.50
6	Preliminary & Pre-op Expenses	1.11
7	Working Capital margin	0.90
	<b>Total</b>	<b>38</b>

- coconut powder -1.87kg  
 5. Baking powder - 0.200kg  
 6. Vanilla essence - 0.100kg  
 7. Salt - Adequate

#### Process:

Grated coconuts are dried in an oven for 30 minutes and then is grinded with the help of a mixer. Otherwise desiccated coconut powder can be used directly.

Wheat flour is sieved. Adequate salt is added. This mixture is blended evenly in a dough mixer. There are two types of mixers available; planetary mixer and spiral mixer.

Creaming of butter is done with the help of a hand mixer or beating machine. Essences are added into this cream of butter and is mixed well.

Flour, grated coconut and jaggery powder are added and knead softly to make dough with the help of planetary/spiral mixer.

The dough is rolled to 1 cm thickness and cut into desired shape preferably with a cookie cutter in case of small scale production. If the production is on a large scale, Cookies wire cut machine/ cookies drop machine can be used.

The cut pieces are kept in a greased tray and baked in preheated oven (180°C for 15-20 minutes) until pale brown color is obtained. Cookies are cooled and packed in suitable packing material. ■

- Courtesy CIT, Vazhakulam, Kerala

Plant and Machinery				
No.	Item	Qty	Unit Cost (Rs.)	Amount (in Lakhs)
1	Planetary mixer	1	2.5	2.5
2	Cookie wire cut machine/ Cookie drop machine	1	5	5
3	Baking trays	1	0.05	0.05
4	Hot air oven	1	2.5	2.5
5	Packing unit	1	2.5	2.5
6	SS working table	2	0.12	0.24
7	Trolleys	2	0.25	0.5
8	Miscellaneous			0.2
	<b>Total</b>			<b>3.49</b>

Income-expediture details/ 100g cookies	
Particular	Rs.
Operating expenses	40.80
Administrative expenses	0.11
Sales & distribution expenses	21.25
Total cost of good sold	62.14
Selling price	85
<b>Margin</b>	<b>22.86</b>

Project at a glance		
No.	Item	At 80 % capacity utilization
1	Sales Realisation	Rs 78.69 lakhs
2	Net Profit after tax	Rs. 13.53 lakhs
3	Long Term Debt	Rs. 9.12 lakhs
4	Profit margin (Net Profit after tax on Sales)	17.20 %
5	Debt Service Coverage Ratio(DSCR)	2.89
6	Pay Back Period	3 years 10 months
7	Internal Rate of Return (IRR)	19%
8	Break Even Point (sales)	60.96%