

Development of value added food products

Department of Biotechnology & Bioinformatics

Sambalpur University

BACKGROUND

- Forests are the main source of non-timber forest products for well-being, domestic consumption and earning for the people living in the rural areas.
- *Madhuca indica*, a well known tree which is used for the collection of fruits, seeds, flowers etc. by the tribes for self consumption and for sale to raise money to maintain their livelihoods.
- Ignoring its nutritional values, from ages *mahua* is used for the production of country liquor.
- Mahua is a rich source of alcoholic sugars, protein, vitamins, minerals, antioxidants etc. So, it can be used a substitute of sugar for the development of value added food products.
- *Moringa oleifera* is considered as one of the World's most useful trees used for food, medication and industrial purposes.
- This tree has the potential to improve nutrition, boost food security and foster rural development.
- It has prominent bioactive ingredients, nutraceutical, therapeutic uses and deals with agricultural, veterinarian, biosorbent, coagulation, biodiesel etc.
- It is rich in protein, polyphenols, aminoacids, minerals etc.
- Due to its several therapeutics uses and nutritional values it can be used for the development of different value added food products.



Mahua Tree



Mahua Fruits



Moringa Tree



Collection of fresh mahua flowers



Drumsticks



Fresh moringa leaves



Dry mahua flowers

NUTRITIONAL ANALYSIS

Nutritional analysis of Mahua

Per 100g	Apple	Mahua flower (Ripe)	Banana (Ripe)	Mango	Mahua flower ♦ (Dry)	Raisins
Moisture*	84.6	73.6	70.1	81	11.61	20.2
Protein*	0.2	1.4	1.2	0.6	6.67	1.8
Fat*	0.5	1.6	0.3	0.4	0.09	0.3
Minerals*	0.3	0.7	0.8	0.4	-	2
Fibre*	1	-	0.4	0.7	1.9	1.1
Carbohydrates*	13.4	22.7	27.2	16.9	68	74.6
Energy (Kcal)	59	111	116	74	-	308
Calcium**	10	45	17	14	139	87
Phosphorus**	14	22	36	16	137	80
Iron**	0.66	0.23	0.36	1.3	-	7.7
Carotene (µg)	0	307	78	2743	-	2.4
Thiamine**	-	-	0.05	0.08	0.028	0.07
Riboflavin**	-	-	0.08	0.09	0.87	0.19
Niacin**	0	-	0.5	0.9	4.8	0.7
Vitamin C**	1	40	7	16	-	-
Choline**	321	-	-	-	-	-

* -g/100g, ** - mg/100g

Source: Nutritive value of Indian foods, National Institute of Nutrition, Hyderabad⁶

♦ Source: Jayasree *et al*¹⁰

Nutritional analysis of Moringa

Nutrient	Fresh leaves	Oven dried
Moisture (%)	75.9	6
Energy (Kcal)	92	271.54
Protein (g)	6.7	23.78
Carbohydrates(g)	12.5	28.32
Fat (g)	1.7	7.014
Fibre (g)	0.9	11.8
Vitamin C (mg)	220	56
Beta – carotene (µg)	6780	37800
Iron (mg)	0.85	19
Calcium (mg)	440	3467
Phosphorus (mg)	70	215
Beta carotene (µg)	6780	37800



Training Given to various SHGs group

VALUE ADDED FOOD PRODUCTS FROM MAHUA



Mahua Cake

Mahua Cake: It is a sweet, delicious and healthy desert. The cake is made up of Maida, ghee, dry fruits along with the addition of mahua flower concentrate which make it even more delicious.



Mahua cookies

Mahua Cookies: It is a delicious and healthy snacks. The cookies are made up of maida, ghee, dry fruits along with the addition of mahua flower concentrate and baked at appropriate temperature which makes it even more crispy and enjoyable.



Mahua mixed fruit jam

Mahua mixed fruit jam: It is mostly used as bread spreader and liked by children. The mahua mixed fruit jam is a combination of different healthy fruits along with mahua concentrate. As compared to marketed jam, it is more healthy, tasty and nutritious.



Mahua ladoo

Mahua Ladoo: After the preparation of mahua flower concentrate, the residue of the flower is used to make mahua ladoos. The residue is also rich in sugar and other vital components. It is made up of semolina, dry fruits and residue of the mahua flower concentrate.



Mahua pachak goli

Mahua Pachak Goli: It helps to improve digestion and alleviate problems like hyperacidity, indigestion and improper digestion. It is made up of mahua flower concentrate, cumin, ajwain, asafoeidita, dry mango powder etc. It is more affordable than the marketed pachak goli.



Mahua mango RTS

Mahua Mango RTS: It is non-fermented beverage and a convenient option for busy individuals who do not have time to juice fruits. Here, mahua juice concentrate is used to used as a substitute for sugar. It boosts nutrients and immunity and improves the digestion capacity.

VALUE ADDED FOOD PRODUCTS FROM MORINGA



Moringa leaf powder

Moringa Leaf Powder: The powder is made by debittering of moringa powder. It is rich in antioxidants and protects cells against free radicals. It is a rich source of iron and prevents cancer, stomach upset, bacterial infections, rheumatoid arthritis etc.



Moringa tea

Moringa tea bag: The moringa tea bag is made up by the mixture of tea dust, moringa powder, jiggery powder, cardamom powder, cinnamon powder and other spices according to the taste. Daily consumption of moringa tea helps to prevent damages in the liver, kidney, heart, lungs and reduce pain and inflammation.



Moringa pickle

Moringa Pickel: The moringa pickle is consumed all over India. The pickle is a rich source of vitamin C, which helps in boosting the immune level and eliminates the harmful free radicals from the body. The major ingredient is moringa and some spices which makes it more tasty.



Moringa chutney powder

Moringa Chutney Powder: The moringa chutney powder is proven to be delicious and tasty. The chutney powder is made by the addition of moringa powder and dried some spices. Daily consumption of the chutney powder reduce some diabetes symptoms and protects the cardiovascular system. It also supports brain health.



Moringa Chikki

Moringa Chikki: The chikki is a traditional Indian sweet recipe. Addition of moringa powder in the chikki makes it more healthy. It is rich in iron. Daily consumption of chikki specially by the school going children, helps them to fight against anemia. It can also be given to the pregnant ladies to reduce iron deficiency.