

HEALTHY MORINGA LEAVES AND ITS FOOD PRODUCTS

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INTRODUCTION

The scientific name of Moringa is *Moringa oleifera*. Moringa is cultivated in most of the hot, humid climates of India. *Moringa oleifera* is believed to have originated in the southern foothills of the Himalayas in northwestern India, Moringa is commonly grown in countries such as India, the Philippines, Kenya, and other parts of Asia, Africa, and Latin America. This tree is growing about 10 m tall. It is an edible vegetable. It's leaves, flowers, fruits, seeds, bark and roots are all used in Ayurvedic medicine and in the diet as a food.

Per 100 grams of green and dried Moringa leaves contain more nutrients. More vitamin C than oranges, more calcium and protein than cow and buffalo milk, more vitamin A than carrots, more iron than spinach in dried fenugreek leaves and more potassium than bananas. Most of the nutrients required for physical health are obtained from Moringa leaves, so it is necessary to include Moringa Leaves in the daily diet.



Nutritive value for per 100 grams each of Moringa Fresh leaves, Dried leaves, Dried leaf powder

Nutrients	Fresh leaves	Driedleaves	Dried leaf powder
Energy (calories)	92	329	20 . 5
Carbohydrates (grams)	12.5	41.2	38.2
Protein(grams)	6 . 7	29 . 4	27 . 1
Fat (grams)	1 . 7	5 . 2	2 . 3
Fiber (grams)	0.9	12.5	19.2
Vitamin B1 (mg)	0 . 06	2 . 02	2 . 64
Vitamin B2 (mg)	0 . 05	21 . 3	20 . 5
Vitamin K (mg)	220	15 . 8	17 . 3
Vitamin E (mg)	448	10 . 8	113
Calcium (mg)	440	2185	2003
Magnesium (mg)	42	448	368
Phosphorus (mg)	70	252	204
Potassium (mg)	259	1236	1324
Iron (mg)	0 . 85	25 . 6	28 . 2

HEALTH BENEFITS

- 1. Rich Source of Antioxidants:** Drumstick is packed with antioxidants such as vitamin C, beta-carotene, and flavonoids, which help neutralize free radicals and reduce oxidative stress in the body, thereby lowering the risk of chronic diseases such as cancer and cardiovascular disorders.
- 2. Supports Immune Function:** The high vitamin C content in drumstick enhances immune function, helping the body fight off infections and illnesses.
- 3. Improves Digestive Health:** Drumstick is a good source of dietary fiber, which promotes digestive regularity, prevents constipation, and supports a healthy gut microbiome.
- 4. Regulates Blood Sugar Levels:** Studies have shown that drumstick may help regulate blood sugar levels, making it beneficial for individuals with diabetes or those at risk of developing the condition.
- 5. Boosts Bone Health:** Drumstick is rich in calcium and phosphorus, essential minerals for maintaining strong and healthy bones, reducing the risk of osteoporosis and bone fractures.
- 6. Aids Weight Management:** The low-calorie and high-nutrient content of drumstick make it a great addition to weight loss diets, promoting satiety and reducing calorie intake.

APPLICATIONS IN MALNUTRITION AND HEALTH INTERVENTIONS:

Moringa holds great potential in addressing malnutrition, particularly in developing countries where access to diverse and nutrient-rich foods is limited. The leaves, pods, and seeds of moringa are rich sources of vitamins, minerals, and protein, making them valuable supplements for combating micronutrient deficiencies. Various organizations and initiatives have recognized the nutritional benefits of drumstick and have incorporated it into nutrition programs aimed at improving maternal and child health.

RECIPES OF MORINGA LEAVES

1) Moringa leaves Thalipeeth

Ingredients:

- 1/2 cup Sorghum flour
- 1/2 cup Besan flour
- 2 cups Moringa leaves
- salt to taste
- 1 small Finely chopped onion
- 1 small Finely chopped tomato
- 3-4 Finely chopped green chillies
- Warm water to knead the dough
- Oil as needed to cook
- 1 tsp Mustard seeds



Procedure:

- Wash the moringa leaves, keep aside
- In a pan, take oil and splutter mustard seeds
- Add the onions and green chillies and saute till the raw smell goes away
- Add the tomatoes and saute until it becomes mushy
- Add the leaves and saute till the leaves become shrivelled
- Take the sorghum flour and besan flour in a wide pan, add the sauteed mixture, salt and mix well
- Add warm water and make a smooth firm dough
- In a baking paper, take a large tennis ball size dough, pat it with the hand and make a hole in the centre
- Carefully place this in a hot pan, drizzle oil all around and in the hole and cook both sides till it gets cooked well
- Serve this hot with white butter or curd or sauce for breakfast

2) Moringa Leaves Tikki / Cutlet

Ingredients:

- 1 cup millet flour
- 1/2 cup wheat flour
- 1/2 cup gram flour
- 1 cup boiled rice
- 1 cup moringa leaves
- 1/2 cup fenugreek leaves
- 1/2 cup Coriander leaves
- 2 tablespoons Sesame seeds
- 2 teaspoons chilli garlic paste
- 1 teaspoon cumin coriander powder
- As required Salt
- 1/2 teaspoon turmeric powder
- 1 teaspoon red chilli powder
- As per taste Salt
- 2 tablespoons curd



Procedure:

- Washed all vegetables are & chopped.
- Grab a large bowl. Add all dry ingredients and well combine. Add the curd, a little water, and the two tablespoons of oil. Thoroughly combine and work the tender, non-sticky dough.
- Divide the dough into 12 portions. Dough

balls dip in the flour. Sprinkle coriander leaves and sesame seeds on each ball. Then light rolling thick and thin.

- Turn the nonstick frying pan to medium heat. Once heated through, carefully place tikka on tawa. When the bubble appears, push it with a fork and flap another side. Next, brush the tikki with oil and fry till golden brown on all sides.
- Ready crispy, spicy tikka for serve.
- Serve with green Garlic Chutney & sweet pickle

3) Moringa Leaves Paratha

Ingredients:

- Moringa leaves – 1 ½ cup finely chopped
- Finely chopped coriander leaves – ½ cup
- Wheat flour – 3cup
- Curd – ¼ cup
- One tablespoon of ginger garlic green chili paste
- Jeera powder – ½ tsp
- Garam masala – ¼ tsp
- Chilli powder – ½ tsp
- Coriander powder – 1 tsp
- Chaat masala – ½ tsp
- Turmeric powder – ¼ tsp
- Ajwain – ½ tsp
- Water to knead
- Oil – 2 tsp to knead
- Ghee or oil to roast the paratha

Procedure:

- Take all the ingredients one by one and mix well.
- Knead it into a soft dough using required water.
- Cover and keep aside for minimum 20 minutes.
- Again, knead the dough till smooth and divide it into equal portions.
- Roll each portion into smooth balls
- Heat a tava.
- Flatten the ball and roll it into thin circles using a rolling pin and dusting with dry flour.
- Place the rolled parathas on the hot tava



and cook.

- Once bubbles appear, flip and cook on the other side.
- Press gently on all sides using a spatula for even cooking.
- Drizzle oil / ghee and fry on both the sides till light brown spots appear all over.
- Remove and keep in hot box.

4) Moringa Leaves Pakode

Ingredients:

- Drumstick leaves – 1 cup
- Gram flour – 1 to 1 1/4 cups
- Rice flour – 1/4 cup
- Corn flour – 1 tbsp
- salt
- fennel seeds – 1 /2 tbsp
- cumin seeds – 1/2 tbsp
- chilli powder – 1/2 tbsp or adjust as per your spice level
- turmeric powder – 1/4 tsp
- green chillies – 2 finely chopped
- ginger garlic paste – 1/2 tbsp
- curry leaves – handful
- coriander leaves – handful
- hot oil or ghee – 2 tbsp
- water – enough to make a dough
- oil – for frying

Procedure:

- Prepare the mixture
- In a big bowl add the moringa leaves.
- Add the gram flour and the rice flour.
- include the cornflour, salt, cumin and fennel seeds. Fennel seeds are optional, but gives a nice taste.
- now add the powders – chilli powder, turmeric powder and the finely chopped green chillies.
- also add the handful of fresh coriander leaves and handful of curry leaves.
- In order to get the perfect crispiness, add the hot oil or the ghee. Adding ghee gives a nice flavour too. Also includes the ginger garlic paste at this stage. You can



- also add the crushed ginger and garlic.
- Mix everything well adding water little by little.
- try to make a smooth dough as shown below.
- Fry the pakodas
- Heat enough oil in a wok in medium flame. Once the oil is hot enough, take small portion from the dough and drop it in the hot oil.
- Likewise, add the whole dough in batches. Fry them in medium flame alone and while frying, keep rotating them for even frying. Filter the excess oil using a kitchen tissue.
- tasty and super crispy pakoda are ready.

5) Moringa Leaves Tea

Ingredients:

- Three to four fresh moringa stalks or one teaspoon dried moringa leaves and stems
- 1 cup Hot water
- Honey as per taste
- Lemon optional

Procedure:

- Gather three to four moringa stalks, and since the mature leaves are supposed to dry rapidly, use them to create tea.

- Let the leaves and stalks air dry until they are crisp. Because of their high fiber content, most people enjoy to incorporate them in the tea-making process, so you don't really need to separate them.
- Scoop the dried moringa leaves into a blender and grind.
- Add hot water and allow the leaves to steep for 3-5 minutes (or until the colour changes).
- Mix in honey to taste. You can also use lemon if you want.

6) Moringa Leaves Soup

Ingredients:

- 3 cups water
- 3 tbsp Moringa powder
- 6 cloves garlic small
- 1 medium onion chopped roughly
- 1 tomato chopped roughly
- 1 tsp cumin powder optional
- a pinch ground turmeric optional
- 1/2 tbsp arrowroot powder or cornstarch
- 1/4 cup water

Procedure:

- Bring water to boil, add garlic, onion, and tomatoes. Cook for 5 minutes.
- Add Moringa powder and boil for 2 more



minutes and switch it off. Let the powder steep in the water for five minutes with the lid closed.

- Add them to the blender and puree them. To get rid of any leftovers, transfer to a sieve with fine mesh.
- Bring to heat. Add the ground turmeric, cumin powder, pepper, and salt to taste.
- Make a slurry with arrowroot powder and water to form a paste. After adding the slurry mixture, give the soup a few minutes to heat.
- Adjust salt and pepper and serve warm.



7) Moringa Ladoo

Ingredients:

- ½ cup Ragi Flour
- ⅓ cup Moringa Powder
- 5-6 no's Dry Figs
- 10-12 no's Dates - de seeded
- ¼ cup Raisins
- ¼ cup Cashews
- ¼ cup Almonds
- ¼ cup Pistachios
- ¼ cup Dry Coconut
- ¼ cup Jaggery or as required
- 1 teaspoon Cardamom Powder
- 3 tablespoon Ghee / Clarified Butter
- 2 tablespoon Desiccated Coconut Powder

Procedure:

- Soak dry figs and dates in warm water for 15 to 20 minutes.
- Heat 1 tablespoon of Ghee/ Clarified Butter in a pan, add ¼ cup of ragi flour (finger millet flour) and roast till fragrant.

- Stir in ⅓ cup moringa powder, stir thoroughly, and roast for a further 3–4 minutes over low heat. The scent of moringa is strongly henna/matcha-like. Move to a mixing dish and reserve for later use.
- In the same pan, add all dry nuts and roast till fragrant.
- Lastly add, dry coconut and roast, when it turns aromatic, turn off the stove. Let this cool down
- Transfer to a blender/ mixer jar and blend to a coarse powder.
- Now remove soaked dry figs and dates from water, add to blender. Add the raisins and process until a smooth paste is achieved.
- To the same pan, add 1 tablespoon of Ghee/ clarified butter.
- Now tip ground dry fruits paste, stir and cook well on medium heat till water dries up. When the paste made of dry fruits solidifies and becomes difficult to stir, reduce the heat so that it simmers.
- Add in dry nut powder, roasted ragi / finger millet flour and cardamom powder.
- Mix well everything, add 1 tablespoon of ghee/ clarified butter and mix.
- Now taste the mixture and adjust the sweetener. This is dependent upon how sweet the dates, raisins, and figs are. Therefore, the quantity of jaggery used will vary based on how sweet the dry fruits are. I utilized ⅓ cup of powdered jaggery.
- On simmer mix well everything, till jaggery melts completely. Turn off the stove
- When the mixture is still warm, bind into small balls and roll in desiccated coconut. Although it's entirely optional, I would advise rolling in desiccated coconut because the flavours of the moringa may overshadow the ladoo when you take the first bite.
- Store in an air tight container and eat as and when required.