

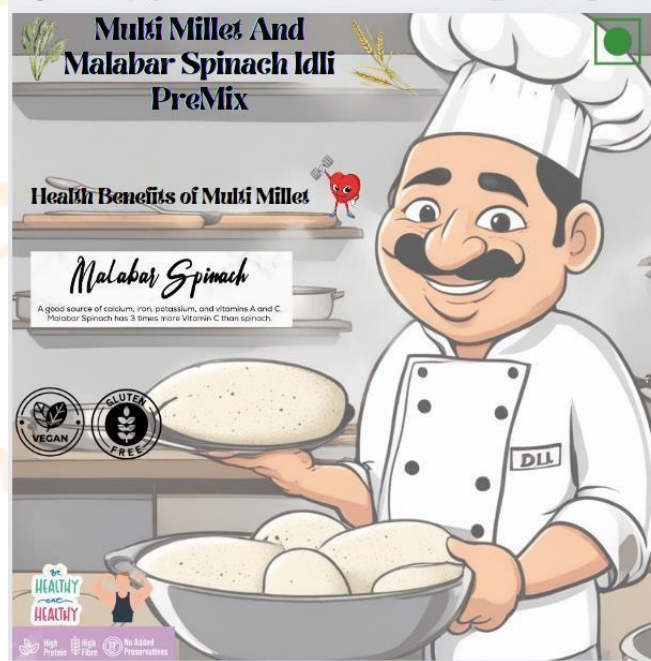


New Product Development –Malabar Spinach and Multi Millet Idli.

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Malabar Spinach and Multi-Millet Idli Pre mix



Introduction:

The Malabar Spinach and Multi-Millet Idli Premix is a unique and nutritious product designed to cater to the health-conscious consumer market. This premix combines the goodness of various millets and the nutrient-rich Malabar Spinach with a blend of spices to create a versatile and convenient food product.

Abstract:

The Malabar Spinach and Multi-Millet Idli .This innovative premix is a blend of diverse millets, nutrient-packed Malabar Spinach, and a carefully curated spice mix. Presented in convenient 100g packaging, it offers consumers a quick and wholesome meal option that supports overall well-being.

Product Description:

- Name: Malabar Spinach and Multi-Millet Idli Premix
- Packaging: 100g

Importance of Malabar Spinach



- Malabar Spinach is rich in essential nutrients like vitamins (A, C, and K), minerals (iron, calcium, and magnesium), and dietary fiber, which are important for your overall health.

Health Benefits of Malabar Spinach and Multi Millet Premix:

- Rich source of dietary fiber, essential for digestion.
- Provides a wide range of essential nutrients and vitamins.
- Low in saturated fat and cholesterol, promoting heart health.
- Gluten-free and suitable for individuals with dietary restrictions.
- The inclusion of Malabar Spinach adds valuable antioxidants and vitamins to the mix.

Methodology:

Formulation:

The formulation of the Malabar Spinach and Multi-Millet Idli Premix was carefully crafted to balance taste and nutrition. The ingredients were sourced from reputable suppliers, and the millets were cleaned, roasted, and ground to create a fine flour.

Production Process:

Ingredients:

- Rice flour: 40g
- Urad Dal (Black Gram Lentils): 20g
- Ragi (Finger Millet): 10g
- Kodo Millet: 5g
- Barnyard Millet: 5g

- Bajra (Pearl Millet): 1g
- Malabar Spinach: 5g
- Foxtail Millet: 5g
- Buckwheat: 2g
- Salt: 2g
- Spice Mix: 3g
- Baking Powder: 2g

Flowchart of the Malabar Spinach and Multi Millet Idli Premix Preparation Process:

Preparation of Millet Flours ,rice and urad dal: Clean and dry roast each millet ,rice and urad dalseparately until they turn slightly golden and emit a nutty aroma. Allow them to cool, then grind them individually to a fine flour consistency

Tray Drying: To convert the Malabar Spinach into powder, you can use a tray drying method.

Mixing Dry Ingredients: In a large mixing bowl, combine the millet flours, rice flour, urad dal flour, ragi flour, kodo millet flour, barnyard millet flour, bajra flour, foxtail millet flour, buckwheat flour, salt, spice mix, and baking powder. Mix these dry ingredients thoroughly.

Packaging: Fill the premix into an airtight container or individual 100g portions, ensuring they are sealed tightly. Label the container with the name, date of preparation, and instructions for use.

How to make Malabar Spinach and Multi Millet Idli

Take the desired amount of your Malabar Spinach and Multi-Millet Idli Premix 100g and transfer it to a mixing bowl.

Add water 120ml to the premix to form a thick batter. Allow it to rest for a 15 min.

Grease idli molds and pour the batter into them.

Steam the idlis in an idli steamer or any steamer for about 12-15 minutes or until they are cooked through. You can check for doneness by inserting a toothpick or knife into the idlis; it should come out clean.

Once done, let the idlis cool for a couple of minutes, then remove them from the molds.

Serve your Malabar Spinach and Multi-Millet Idlis with chutney, sambar,



Nutrition Information Per 100 g)

Energy	315.09 kcal
Carbohydrate	61.07 g
Protein	14.17 g
Fat	1.57 g
Fiber	8.5g
Mineral	3.29 g
Moisture	11.4 g
Vitamin C	4.48 mg

Technical Detail

Flour Production:

1. **Cleaning:** Ensure that all the grains are free from impurities and contaminants.

2. **Roasting:**

Preheat an oven to 120-150°C.

Spread the grains individually on a clean, dry tray.

Roast the grains for 20-30 minutes, or until they acquire a slightly golden color and release a nutty aroma.

Stir the grains occasionally to ensure even roasting.

3. **Cooling:** Allow the roasted grains to cool to room temperature.

4. **Grinding:**

Use a suitable mill or grinder to grind the roasted grains into a fine powder.

Ensure that the grinding equipment is clean and dry.

Grind each grain separately to maintain uniform texture and consistency.

5. **Sifting (Optional):** Pass the ground flours through a fine sieve to remove any coarse particles.

6. **Packaging:** Package the individual flours separately in airtight containers to maintain freshness.

Processing Malabar Spinach for powder:

1. **Harvest and Clean:** Harvest fresh Malabar Spinach leaves and clean them thoroughly to remove any dirt or impurities.
2. **Tray Drying:** To convert the Malabar Spinach into powder, you can use a tray drying method. Follow these steps:
 - Spread the cleaned Malabar Spinach leaves evenly on clean, food-grade trays.
 - Place the trays in a drying chamber with controlled temperature and humidity settings.
 - Dry the Malabar Spinach leaves at a temperature range of 50-80°C for approximately 5 hours or until they become brittle and moisture content is reduced significantly.
3. **Grinding:** After drying, grind the dried Malabar Spinach leaves into a fine powder. You can use a food processor or grinder for this purpose.



Shelf Life Analysis (Microbiological):

AOAC Analysis: Conduct microbiological analysis for shelf life determination using appropriate AOAC (Association of Official Analytical Chemists) methods. Some common microbiological tests include:

- Total Plate Count (AOAC 966.23): To determine the total bacterial count.
- Yeast and Mold Count (AOAC 997.02): To determine the presence of yeast and molds.

Approximate Nutritional Analysis (AOAC Methods):

1. Protein Content (AOAC 990.03):

- Use the Kjeldahl method to determine the protein content. It involves digestion of the sample followed by distillation and titration.



2. Fat Content (AOAC 954.02):

- Use the Soxhlet method for fat extraction, where the sample is repeatedly extracted with a solvent.



3. Curde Fiber Content (AOAC 991.43):

- Determine the total crude fiber content using Fibroplus machine



4. Ash Content (AOAC 923.03):

- Determine the ash content by incinerating the sample in a muffle furnace.



5. Moisture Content (AOAC 925.10):

- Determine the moisture content by oven-drying the sample at a specific temperature.



6. Vitamin C Content:

- Use an appropriate method for ascorbic acid determination, such as titration with 2,6-dichlorophenolindophenol (DCPIP).



. Conclusion:

The Malabar Spinach and Multi-Millet Idli Premix is a result of a meticulous development process that combines the nutritional benefits of various millets and the health-boosting qualities of Malabar Spinach. This versatile premix is a valuable addition to a healthy diet and aligns with the growing demand for nutritious and convenient food products.