

DEVELOPMENT OF SPICE MIX BY USING CILANTRO ROOT AND STEM POWDER

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ABSTRACT- Cilantro is a versatile herb commonly used in various cuisines around the world for its distinct flavour and aroma. While the seeds of the cilantro plant are widely utilized in spice blends such as sambar powder and garam masala, the stems and roots are often overlooked and discarded. This study aims to explore the potential of adding cilantro stem and root powder as a substitute for cilantro seeds in the development of sambar powder and garam masala. The research will begin by obtaining fresh cilantro stems and roots, which will be thoroughly cleaned, dried, and ground into a fine powder. Different formulations will be tested to determine the optimal ratio of cilantro stem and root powder to other spices in the mix. Sensory evaluation panels will be conducted to assess the overall taste and aroma of the spice blends containing cilantro stem and root powder. The overall acceptability of cilantro root and stem powder spice mix was highly acceptable by the panel members.

This research aims to offer a sustainable and innovative approach to spice production by utilizing cilantro stem and root powder in place of cilantro seeds. The results of this research have the potential to not only reduce food waste but also enhance the nutritional value and flavour of traditional spice blends.

Keywords: cilantro root and stem, sambar powder, garam masala, spice mix, flavour profile, aroma, nutritional benefits.

INTRODUCTION

Cilantro (*Coriandrum sativum* L., family Apiaceae) is an annual herb. It is a member of the carrot family (Umbelliferae) and often used in flavouring substances. The root, stem, leaves and fruits all have an aromatic odor that most considered pleasant. In addition to India, cilantro is cultivated commercially in Morocco, Romania, France, Spain, Italy, the Netherlands, Myanmar, Pakistan, Turkey, Mexico, Argentina, South and Western Australia and to some extent in the UK and USA. Cilantro seeds are also known for their medicinal properties. As such, cilantro is a popular ingredient in the preparation of Ayurvedic medicines. The new value-

added products, volatile oil and oleoresins, obtained from cilantro seeds are also in high demand on the international markets (M.M. Sharma et.al, 2012). It has been utilized as a seasoning and therapeutic agent since ancient times (Khan et al., 2014).

Cilantro roots are the roots of the cilantro herb, an entirely edible plant, and have a white central tap root covered in small, dark-brown, hair-like rootlets. The roots of younger plants are thin, moist, and tender, while larger roots from older plants can become tough and somewhat bitter. Cilantro roots offer a pungent, peppery-spiced aroma and flavour, stronger than the leaves, with citrus notes and deep, earthy undertones similar to celery root. Cilantro roots are available year-round. Cilantro roots are rich in antioxidants and anti-inflammatory properties. They are a good source of vitamins A, C, and K and offer trace amounts of folate, potassium, and manganese. Thanks to its nutritional makeup, it has been studied for its ability to promote heart health, energy, and healthy hair and skin. Cilantro roots are best used in cooked applications, although the young, tender roots can be finely chopped and used to garnish dips, soups, or salads. Young Cilantro roots may also be stir-fried with minimal cooking, while older, larger coarse roots are best suited for longer cooking applications, such as in broths and stocks. Larger roots stand up to long-simmering times and high temperatures, unlike the leaves, and will also soften and become more palatable over time.

OBJECTIVES

- To develop the spice mix using cilantro stem and root powder.
- To use cilantro stem and root powder in the spice mix instead of cilantro seeds.
- To find out the nutritional value of the cilantro root powder.
- To find out the shelf life of cilantro base spice mix.

METHODOLOGY

PREPARATION OF CILANTRO ROOT AND STEM POWDER

1. Collect fresh cilantro roots and stems and wash them thoroughly to remove any dirt or debris.
2. Allow the cilantro roots to dry completely, either by sun drying them or using a solar drying.

3. Once the cilantro roots are dry, grind them into a fine powder using a spice grinder or mixer.
4. Store the cilantro root powder in an airtight container in a cool, dry place away from direct sunlight.




FRESH CLANTRO ROOT AND STEM	DRIED CILANTRO ROOT AND STEM	CILANTRO ROOT AND STEM POWDER
		
FIG - 1	FIG -2	FIG -3

FIGURE 1,2,3- shows that, FRESH CILANTRO ROOT AND STEM WEIGHT – 400g, DRIED ROOT AND STEM WEIGHT – 50g, CILANTRO STEM AND ROOT POWDER WEIGHT- 30g

PREPARATION OF SAMBAR POWDER BY USING CILANTRO ROOT AND STEM POWDER

1. Roasted the ingredients and combine all the raw ingredients such as 25g of red dry chilli, 10g of Bengal gram, 10g of toor dhal, 10g of fennel seeds, 10g of cumin seeds, 7g of pepper, 3g of turmeric, 1g of asafoetida.
2. Ground all the raw ingredients and sieved thoroughly.
3. Add 15gm cilantro root and stem powder and mix them thoroughly. Mix all the spices well to ensure they are evenly distributed throughout the spice mix.
3. Store the sambar mix in an airtight container in a cool, dry place away from direct sunlight.

PREPARATION OF GARAM MASALA BY USING CILANTRO ROOT AND STEM POWDER

- Roasted the ingredients and combine all the raw ingredients such as 16g of dried chilli, 10g of Bengal gram, 10g of urad dhal, 10g of cumin seeds, 5g of pepper, 1g of cinnamon, 1g of cloves, 1g of bay leaves, 1g of mace, 1g of star anise, 1g of cardamom.
2. Ground all the raw ingredients and sieved thoroughly.
3. Add 15gm cilantro root and stem powder and mix them thoroughly. Mix all the spices well to ensure they are evenly distributed throughout the spice mix.
3. Store the garam masala in an airtight container in a cool, dry place away from direct sunlight.



FIG 4



FIG 5

FIG 4,5 DEVELOPED SAMBAR POWDER AND GARAM MASALA BY USING CILANTRO ROOT AND STEM POWDER INSTEAD OF CORIANDER SEEDS

RESULT AND DISCUSSION

NUTRITIVE VALUE OF THE CILANTRO ROOT AND STEM POWDER

Ingredient	Quantity	Moisture	Ash	Energy	Carbs	Protein	Fat	Fibre	Iron
Cilantro root and stem powder	100 gm	8.5 (%)	15.7 (%)	367 Kcal	68.5 gm	18.5 gm	2.1 gm	12.6 gm	16.7 Mg

SHELF-LIFE OF DEVELOPED SPICE MIX (SAMBAR POWDER AND GARAM MASALA)

The developed spice mix (sambar powder) is stored in air tight container at a room temperature of 35 degree C. sample of developed spice mix (sambar powder) was taken and tested in an interval of 10 days once. The texture also was not altered.

Shelf life of developed spice mix (sambar powder and garam masala)

S.NO	PRODUCT	STORAGE AT AIR TIGHT CONTAINER	SHELF LIFE OF THE PRODUCT AT AIRTIGHT CONTAINER
1.	Developed spice mix (sambar powder and garam masala)	10 days	No change
2.	Developed spice mix (sambar powder and garam masala)	20 days	No change
3.	Developed spice mix (sambar powder and garam masala)	30 days	No change
4.	Developed spice mix (sambar powder and garam masala)	40 days	No change

CONCLUSION

In conclusion, the development of sambar powder and garam masala using coriander stem and root powder instead of coriander seeds has proven to be a innovative project. This project highlights the potential for creativity and resourcefulness in culinary endeavors.

By utilizing parts of the coriander plant that are typically discarded, we have not only created flavourful spice blends but also promoted sustainability by reducing food waste. The unique flavour profile and aromatic qualities of the coriander stem and root powder have added a new dimension to these traditional spice mixes, making them stand out in terms of taste and quality. The development of spice mix by using cilantro root and stem' was highly acceptable by the panellist. It was concluded that the product has better acceptability, more health benefits, suitable for all category people and the sensory was too good.

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