



Phytochemical and nutritional properties of moringa herbal powder

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Abstract

Moringa oleifera known as munga, drumstick tree, or horse-radish tree. This plant is extensively used as a nutritional herb and it contain valuable pharmacological benefits like anti- hypertensive, antidiabetic, anti-inflammatory, antioxidant and cardiovascular activity. To make Moringa leaves, it can be extracted by the plant and dried to make a powder. The leaves contain rich in vitamin C, beta-carotene, potassium etc., In the present study of investigation the Moringa powder in phytochemical analysis results in the presence of alkaloids, flavonoids, tannins, saponins, and steroids. The presence of phytochemical in the Moringa suggests of possible preventive and curative property of the Moringa leaves. The main aim of this study is to cure blood pressure, hence people should have to using natural herbal powder.

Keywords: *Moringa oleifera*, pharmacological actions, anti-hypertensive, alkaloids, steroids

Introduction

Moringa are important part of our daily diet. They naturally contain vitamins and minerals and helps to reduce high blood pressure, preventing and treating cancer, treating diabetes and protects the cardiovascular. It also have high in vitamin C and antioxidant property. Then, Flax seeds are a good source of dietary fiber and omega-3 fatty acids. It also contains phytoestrogen called lignans, which are similar to the hormone oestrogen. It also used for diabetes, high cholesterol, high blood pressure and swelling. These seeds have antioxidant and other beneficial effects on the cardiovascular system. Then, black pepper is a good source of iron and dietary fiber. It also has an excellent source of vitamin K and potent antioxidant. It is used for hypertension, lower the level of oxidative stress, and kills the cancer causing cells and protects the healthy cells. Then, dried ginger is one of the best medicine in Ayurveda and Siddha. It helps to lower blood sugar, cholesterol and fever. It is widely analgesic pain killer and anti-inflammatory drug. Then cumin is a medicinal and health potential and it is mainly attributed to its antioxidant, antihypertensive and immuno modulatory properties. It helps to control blood sugar, high blood pressure and cholesterol. Then Anise seed is rich in nutrients and a wide array of health benefits. It can reduce inflammation and destroy the growth of fungi and bacteria. Then Indian Sarsaparilla (nannari root) it is a best medicine for drowsiness. It might also improve the metabolism of the body and helps in digestion. It is used for blood pressure, cancer and arthritis and syphilis. Then, Iam taking this rose petal as a flavor and good odour. It is used for reducing anxiety and reducing inflammation.

Materials and Methods

Materials

Sample collection

An attempt has been made to preparation of moringa herbal powder and analysis their phytochemical constituents by using moringa leaves, flax seed, black pepper, dried ginger, cumin, anise, sarsaparilla (nannari), and rose powder. These things are procured from Villupuram, Tamil Nādu.

Moringa powder preparation

A Moringa leaf was finely grained and added equal amount of flax seed powder and a pinch of black pepper powder mixed thoroughly. Then, added a few spoons of dried ginger, cumin, anise, and adding extract of sarsaparilla root powder and rose petals for flavoring mixed thoroughly until it becomes a powder consistency. Then it can be stored in a room temperature.

Test for Carbohydrate

The confirmation test for carbohydrates are Molish's test, Fehling's test, Benedict's test.

Test for Proteins and Amino Acids

The confirmation test for proteins and amino acids is Biuret test, Millon's test, Xanthoproteic test.

Test for Secondary Metabolites

The confirmation test for secondary metabolites is Test for Alkaloids (Wagner's test), Test for Flavonoids, Test for Saponins (Froth's test), Test for Terpenoids(Salkowski test), Test for Steroids (Liebermann burchard test), Test for Glycosides.

Mean and standard deviation of protein

Table 1

Protein assay	Raw extract	Moringa herbal powder
	23±19.5	36±20.19

Mean and standard deviation of vitamin C

Table 2

Vitamin C	Raw extract	Moringa herbal powder
	66±7.7	75±8.0

Results and Discussion

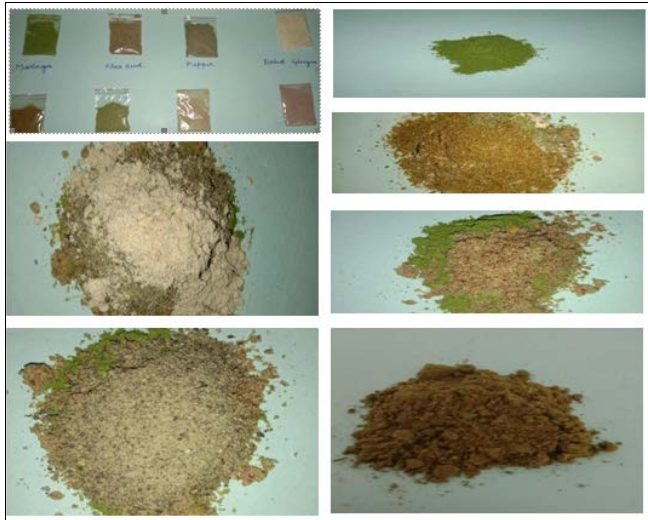


Fig 1

Table 3: Phytochemical analysis of moringa herbal powder

Phytochemical constituent	Moringa herbal powder in aqueous extract
Alkaloids	+
Tannin	+
Terpenoids	+
Flavonoids	+
Reducing sugar	+
Glycosides	+
Phenol	+
Protein	+

+ - Positive, - negative

This revealed the primary and secondary metabolites of natural herbal powder. In that, the natural herbal powder is indicate the presence of alkaloids, tannins, terpenoids, flavonoids, reducing sugar, glycosides, steroids, protein and phenol.

They are primarily used for blood pressure and it has high antioxidant property. The popularity of these products is increasing in many countries across the globe. Many patients these days are concerned about using this as either capsule or powder for high blood pressure and other benefits.

Estimation of protein by lowry method

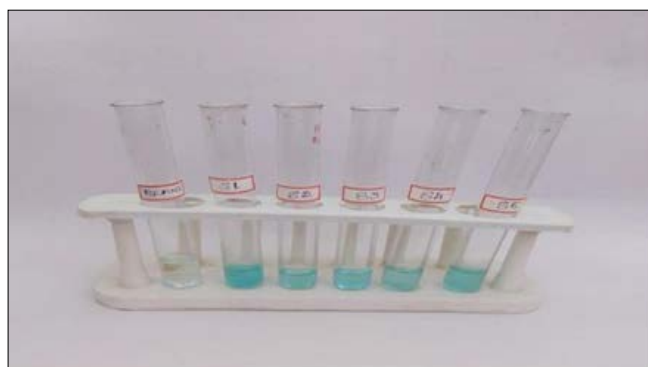


Fig 2

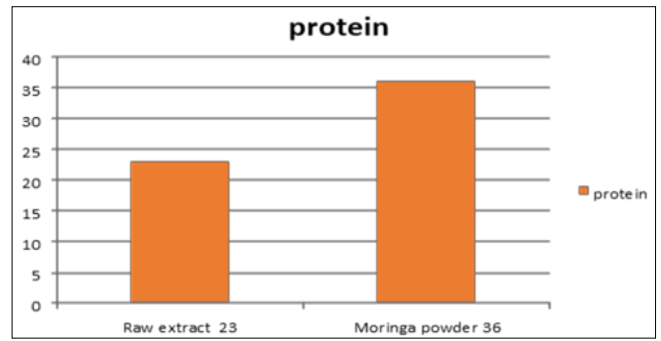


Fig 3

This indicates the presence of protein. After adding Lowry reagent and olin reagent the white colour is converted into bluish colour. And the graph indicates the Moringa powder is high in vitaminC than the original extract.

Estimation of vitamin c (ascorbic acid)

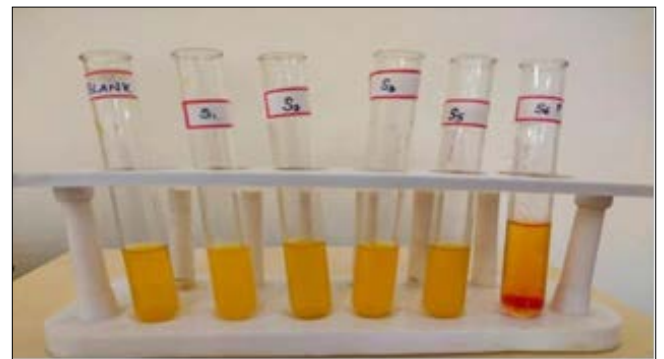


Fig 4

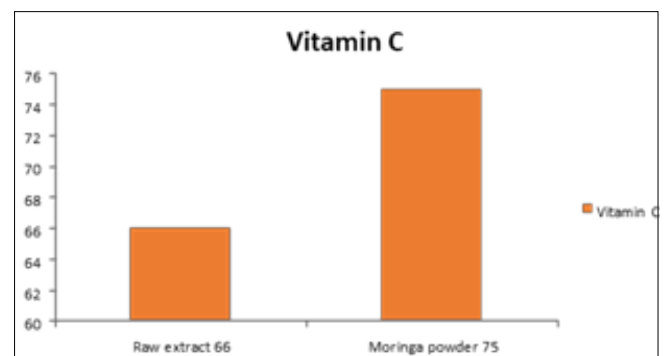


Fig 5

This indicates the presence of vitamin C. After adding thiourea the white colour is converted and the orange red osazone crystal was formed. And the graph indicates the Moringa powder is high in vitamin C than the original extract.

Summary and Conclusion

- Moringa herbal powder is safer for adults when used short term for the purpose using blood pressure, blood sugar and cholesterol. It may also have antioxidant and anti-inflammatory effects and protect against arsenic activity.
- Hence concluded, people should have to using this natural herbal powder to avoid more diseases like blood pressure, diabetes, cardiovascular diseases etc.

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