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A Study on Use of Moringa Leaves in South Indian Cuisine and its Health Benefits

Aditi K Desai
Anjuman-I-Islam's Institute of Hospitality Management, Mumbai, India

Abstract: *Moringa Oleifera is a multipurpose and exceptionally nutritious vegetable tree with a variety of potential uses. It is a sub-tropical species that is known by different regional names as benzolive, drumstick tree, kelor, marango, mulangay, nébéday, saijhan, mooringai and sajna. It has very high nutritional properties that would be useful as a food supplement, especially in those relegated communities. Besides its nutritional and medicinal applications, Moringa oleifera is very useful as an alley crop in the agro-forestry industry.*

Keywords: Moringa Oleifera.

I. INTRODUCTION

Moringa Oleifera is a multipurpose and exceptionally nutritious vegetable tree with a variety of potential uses. It is a sub-tropical species that is known by different regional names as benzolive, drumstick tree, kelor, marango, mulangay, nébéday, saijhan, mooringai and sajna. It has very high nutritional properties that would be useful as a food supplement, especially in those relegated communities. Besides its nutritional and medicinal applications, Moringa oleifera is very useful as an alley crop in the agro-forestry industry. It is useful not only for human beings but also for animals and also in various industrial applications. Besides Moringa oleifera being processed into a medicine, it contains acetone which can be prepared into herbal formulation which is an effective anti-malaria bio agent. Such trees have the potential to be a source of new drugs. The leaves, fruit, flowers and immature pods of this tree are used as a highly nutritive vegetable in many countries, particularly in India, Pakistan, Philippines, Hawaii and many parts of Africa. It is originated initially in the Northern part of India some 5000 years back and soon moved into the Southern parts as well, where it was known as 'Murungaikeerai' (Moringa leaves) and 'Murungaikaai' (Moringa vegetable). Traditionally, besides being a daily used vegetable among people of these regions, the Moringa is also widely known and used for its health benefits. Among commoners, it has earned its name as 'the miracle tree' due to its amazing healing abilities for various ailments and even some chronic diseases. Several investigations were carried out to isolate bioactive compounds from various parts of the plant due to its various applications. Therefore, herbal plants in medicine or known as phytomedicine are still trustworthy and widely applied as one of the alternative way in medicine field due to affordable cost. The Moringa tree had spread to most part of Asia, nearly the whole of Africa, South America, southern part of North America and some pockets in Europe. Moringa has been used as a traditional medicine around the world, for anemia, skin infections, blackheads, anxiety, bronchitis, catarrh, chest congestion, asthma, blood impurities, cholera, glandular, swelling, headaches, conjunctivitis, cough, diarrhea, eye and ear infections, fever, abnormal blood pressure, hysteria, pain in joints, pimples, psoriasis, respiratory disorders, scurvy, semen deficiency, sore throat, sprain, tuberculosis, for intestinal worms, lactation, diabetes and pregnancy. The healing properties of Moringa oil have been documented by ancient cultures. Moringa oil has tremendous cosmetic value and is used in body and hair care as a moisturizer and skin conditioner. Moringa oil has been used in skin preparations and ointments since Egyptian times. The leaves possess remarkable nutritional and medicinal qualities. They contain high amount of vitamin C, which fights a host of illnesses including colds and flu; vitamin A, which acts as a shield against eye disease, skin disease, heart ailments, diarrhea, and many other diseases; Calcium, which builds strong bones and teeth and helps prevent osteoporosis; Potassium, which is essential for the functioning of the brain and nerves, and Proteins, the basic building blocks of all our body cells. Another important point is that Moringa leaves contain all of the essential amino acids in a good proportion, which are the building blocks of proteins. These leaves could be a great boon to people who do not get protein from meat. Moringa even contains argenine and histidine two amino acids especially important for infants, who are unable to make

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enough protein for their growth requirements. The micro-nutrient content is even more in dried leaves; (ten times the vitamin A of carrots), (17 times the calcium of milk), (15 times the potassium of bananas), (25 times the iron of spinach) and (nine times the protein of yogurt). Therefore it is necessary to increase the utilization of Moringa leaves consumption by the different communities. It should be consumed either fresh or dry.

II. REVIEW OF LITERATURE

Introduction

A literature review is an overview of the previously published works on a specific topic. The term can refer to a full scholarly paper or a section of a scholarly work such as a book, or an article. Either way, a literature review is supposed to provide the researcher/author and the audiences with a general image of the existing knowledge on the topic under question. A good literature review can ensure that a proper research question has been asked and a proper theoretical framework and/or research methodology have been chosen. To be precise, a literature review serves to situate the current study within the body of the relevant literature and to provide context for the reader. In such case, the review usually precedes the methodology and results sections of the work.

Reviews

ABDUL RAZIS, ET AL (2014)

The Moringa's incredible medicinal usage which is claimed by many cultures and communities based on real life experiences are now proven by science. Through research, the Moringa was found to contain many essential nutrients, for instance contain many essential nutrients for instance, vitamins, minerals, amino acids, beta-carotene, anti-oxidants, anti-inflammatory nutrients, omega 3 and 6, fatty acids.

Anti Fibrotic/Ulcer:

Major contributors to the treatment of liver fibrosis discovered to date are natural drugs. Constant efforts and studies on these natural drugs to treat liver fibrosis are being carried out in search for anti fibrotics agents.

Antimicrobial Effects of Moringa:

Moringa leaf extracts indicated promising potential as a treatment for certain bacterial infections. The anti-bacterial activity of the Moringa extracts was observed to be greater against grampositive species which was also indicated in several other studies.

Anti-cancer Properties of Moringa:

Moringa is revealed to possess potential therapeutic effects to fight cancer rheumatoid arthritis, diabetes, and some other ailments. Particularly in South Asia; it works as treatment for different diseases in the indigenous system of medicine.

Lakshmipriya gopalakrishan, et al (2018)

Most plants lose their nutritive properties when processed. When compared, the nutritive content of raw, germinated and fermented moringa seed flour, it was found that phytochemicals were higher in raw seed flour and amino acid content was at its peak in fermented and germinated seed flour.This can be a result of the biochemical activities during germination and microbial activity during fermentation. However, a study reviewed the effect of boiling, simmering and blanching to see the retention of nutrient content of moringa leaves. Interestingly, boiling was the most effective of all the techniques as it reduced the cyanide, oxalate and phytate contents, more significantly than the other two methods. The presence of phytate and other anti-nutrients can reduce the bioavailability of certain nutrients and processing can hence be done for maximum utilization of required nutrients from the seeds and leaves. A study carried out byYang et al. Reported that boiling increased the availability of iron and antioxidant content.

Chitra balasubhamanian (2014)

While the leaves are eaten in all parts of the country, they are popular in villages. In cities, they are considered infra dig. Neither the tree finds a place in manicured lawns nor do the leaves find a place of pride among the greens. Moringa is a superfood with plenty of health benefits. Its curative properties are well documented in ayurvedic texts. It is said to be used in over 300 ayurvedic compositions. According to the Nutritive Value of Indian Foods by C Gopalan, moringa

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leaves have seven times the vitamin C found in oranges, four times the vitamin A of carrots, four times the calcium of milk, three times the potassium of bananas and twice the protein of yogurt. Moringa can also cure anemia in children.

III. CONCLUSION

Moringa is a nutrient rich plant, and the findings showed that the leaves contain a wide range of nutrients, including phytochemicals, vitamins, minerals, proteins, vitamins, and amino acids. As a result, the leaves could be utilized to fight malnutrition, particularly in infants and nursing moms. A rapidly growing number of published studies have shown that extracts of Moringa oleifera leaves possess a wide range of additional biological activities including antioxidant, tissue protective (liver, kidneys, heart, testes, and lungs), analgesic, antiulcer, antihypertensive, radio protective, and immune-modulatory actions. Many of the advantages of Moringa oleifera leaves can be ascribed to their high content of nutrients such as protein and antioxidants (which come from vitamins and polyphenols), making them a crucial part of a healthy and balanced diet. According to the nature of the secondary metabolites in the leaf extract, the Moringa oleifera leaves have good antibacterial activity agents. These findings suggested that Moringa oleifera leaf extract could be a valuable source of antioxidants. These findings support the hypothesis that Moringa oleifera leaf extract is a rich source of natural antioxidants with significant health benefits. This suggests that Moringa oleifera leaf extracts could be used as a natural antioxidant and antibacterial agent in pharmaceutical and food applications with adequate safety margins. Incorporating moringa leaves into the diet in India and other nations could help not only with micronutrient deficiencies, but also with the development of functional foods for a variety of chronic degenerative diseases. These efforts could potentially provide an additional source of revenue, employment, and exports, as well as a viable alternative to imported food supply in poor nations to alleviate malnutrition. We discovered that moringa leaves are utilised in both vegetarian and non-vegetarian meals in South Indian cuisine, such as stir-fried preparations, various curry preparations, and the making of parathas, a type of Indian bread. Though different households have different recipes, the utilisation of Moringa Leaves remains the same. Malayalis and Tamils are the primary consumers of Moringa Leaves in Southern India. Moringa leaves can be dried and powdered to conserve their nutrients for long-term use and storage. Sun, shade, freezing, and oven drying at 50–60 °C are all suitable methods for retaining specific micro- and macronutrients, however their efficiency varies. Soups, sauces, and smoothies are all frequent uses for the powder. Moringa leaf powder is appreciated as a dietary supplement because of its high nutritional richness, and it may be used to enrich food products ranging from dairy, such as yoghurt and cheese, to baked foods, such as bread and pastries, with acceptable sensory evaluation. Moringa Leaf Powder has grown in popularity over the years due to its ease of usage.

IV. LIMITATION OF THIS RESEARCH STUDY

1. The study was conducted during Covid-19 pandemic due to which the sample size is very limited
2. The collected primary data is also very limited.
3. There is insufficient sample size for statistical measurement. So the results cannot be generalized.
4. There are many large publishers that run their magazines on a subscription-based model. Paying for surveys on paid walls has become difficult for the researcher and become very difficult to get information.
5. Respondents who are familiar with English language have participated in the survey as the language used in questionnaire was English.

V. FUTURE RESEARCH

There is scope for further research

1) To study the Medicinal Use of Moringa Leaves.
2) To study the use of Moringa Leaves in Sri Lankan Cuisine
3) To study the potential of Moringa Leaves as an animal fodder and its nutritional value.
4) A compositional study of Moringa Oleifera Leaves.

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