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Nutritional and medicinal values of selected underutilized green leafy vegetables for nutritional security

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Abstract

Green leafy vegetables are an important to include in daily diet. GLV contains fiber, essential vitamins and minerals such as iron, calcium and magnesium and added to daily diet. They also provide protection against diseases, like high cholesterol, heart diseases, and diabetes etc. Due to lack of awareness about nutritional importance of Green leafy Vegetables these are underutilized and discarded, feed to the domestic animals. Underutilized greens which are not in a daily diet. Underutilized greens contain nutritional potential which can lead towards nutritional security. Increasing the consumption of underutilized greens in our diet can be a food based approach for treating micronutrient deficiency. Most of the people is unaware about the nutritional benefits of underutilized green vegetables their use in preventing micronutrient deficiency and many products are prepared by them which are used in income generation and employment. Knowledge regarding underutilized greens may improve dietary behavior or nutrition knowledge, attitude and behavior is important to improve dietary practice and inclusion of underutilized green leafy vegetables in daily diet.

Keywords: Underutilization, green leafy vegetables

Introduction

Vegetables are well-known for their higher nutritional, mineral, vitamins, and therapeutical content and play an important role in the human diet throughout the world. Due to higher nutritional value, vitamins, mineral, and dietary fibre content, and some leafy vegetables are also recognized for their medicinal value. Nutritionally leafy vegetables are good sources of carotene, folate, niacin, iron, vitamin C, and calcium.

In view of this, a survey was conducted at local vegetable markets for selecting the underexploited leafy vegetables to document the nutritional profile of selected underutilized leafy vegetables.

Traditional vegetables are good sources of nutrition in rural areas where exotic sp. are not available. Leafy vegetables are important for well-balanced diets. Green leafy vegetables are easily available of all the vegetables within the reach of poor man, being richest in their nutritional value. The lack of awareness about the nutritive value of these green leafy vegetables among the people in general is the main drawback in their low consumption.

Vegetables are an important part of everyone's life and a key component of a human balanced diet. Green leafy vegetables help in achieving global nutrition security by providing nutrients, like vitamins and minerals. Green leafy vegetables, are easy to cook and Cheapest, be used in the diets to eradicate micronutrient malnutrition, and also to prevent degenerative diseases. The reasons for the less utilization of underutilized vegetables are due to lack of awareness on their nutritional and medicinal importance. Some important underutilized green leafy vegetables were discussed to create awareness for the welfare of everyone to increase the consumption of underutilized greens in daily diet.

Methodology

The world Health organization recommends a daily intake of at least 400 g of vegetables per

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person to protect against nutritional deficiency and other chronic diseases due to hampering of Immune system. Daily consumption of 100 g of leafy vegetables by adults and 50 g by children will provide the daily requirements of Beta-Carotene, folic acid Vitamin C and a part of the calcium and riboflavin requirements. Four different underutilized green leafy vegetables have been chosen to discuss their nutritional value and health benefits. Underutilized vegetables include radish, carrot, pumpkin and Colocasia leaves.

1. Radish leaves

(a) **Introduction: Radish (*Raphanus raphanistrum* sub sp. Statives):** The entire plant is edible. The short season vegetable's underground modified root can be consumed as a salad vegetable and top part as a leafy vegetable. It contains tons of dietary fibre and micro nutrients. The presence of a various nutrients in radish leaves makes it a versatile herb that can cure and prevent various diseases and micronutrient deficiencies.

(b) **Nutritional Value:** Every 100 g of radish leaves contains energy of 28 kcal, 3.8 gm protein, 2.4 gm Carbohydrate, 1gm dietary fibre, 81mg Vitamin C, 0.09mg Iron, 59 mg Phosphorous and 280 ug folate essential for many bodily functions.

(c) **Medicinal Value:** Radish greens contains more nutrition from their white root. Radish leaves are fatigue reliever, detoxifier, antiscorbutic, immunity boosters and antibacterial properties of this leave help curing haemorrhoids to a certain extent. The Vitamin A and Vitamin C content of the radish leaves are naturally diuretic, dissolve stones and clear the urinary bladder along with laxative properties to ease constipation and bloated stomach.

2. Carrot leaves

(a) **Introduction: Carrot (*Daucus carota*)** is a root vegetable native to Europe and south western Asia. The lack of awareness about its uses and cooking methods results in the leaves being discarded. In the past, there was the widespread belief that carrot greens are toxic, but this is likely due to their bitter flavour. Carrot greens are the most underexploited greens class despite their high nutritional value. Carrot greens contain omega -3 and 6 fatty acids, which are scarce, cannot be synthesized by mammals and must be obtained through diet.

(b) **Nutritional value:** Carrot greens contains a list of nutrients including significant amounts of Vit A, Dietary fibre, Vit C, calcium and Iron. These greens also contain Vit K and various phenolic compounds and carotenoids, along with trace amounts of other antioxidants. Every 100 gm of carrot greens provide energy of 77 Kcal, 5.1 gm protein, 13.1 gm CHO, 2 gm fiber, 340 mg calcium, 110 mg Phosphorous and 9.8 mg Iron.

(c) **Medicinal Uses:** Carrot greens helps in detoxifying, Vit C and significant amount of antioxidants like leutin, zeaxanthan and Beta carotene, helping to boost the immune system, protecting body against infections and foreign pathogens. The chlorophyll helps heal skin and rid the body of toxins.

Vit K in carrot greens helps in regulate blood Calcium levels and helps in blood clotting.

3. Pumpkin leaves

(a) **Introduction:** Pumpkin (*Cucurbita cucurbitaceae*) belongs to the cucurbitaceae family. These leaves are

large, lobed grow on hollow stems in many parts of the world including Asia and Africa. They are not often consumed in regular diet because of their fuzzy texture but can be eaten raw or cooked.

(b) **Nutritional value:** Pumpkin leaves are healthy and delicious, loaded with iron and manganese essential for normal functioning of body. Pumpkin leaves also include calcium, Vit C, A and B in addition to magnesium, phosphorous and copper. Each 100 gm of pumpkin leaves can give energy of 57 Kcal, 4.6 gm protein, 7.99 CHO, 0.27mg Vit B6, 2.2 mg Iron, 392.0 Calcium and 112.0 mg of phosphorous.

(c) **Medicinal Value:** Pumpkin leaves improve lactation of lactating mothers lowers cholesterol, regulate blood sugar levels, fight against cancer, increase fertility and contain high amount of calcium necessary for healthy bones and teeth. Vit A content in the leaves can improve eyesight, promote healthy skin and hair whereas Vit C can help to heal wounds and from scar tissue.

4. Colocasia leaves

(a) **Introduction:** Colocasia leaves are also known as Elephant Ears due to their shape as well as Taro leaves. Taro plants are well known for their starchy underground and brown tubers.

(b) **Nutritional Value:** Every 100 gm of colocasia leaves give energy of 56.0 Kcal, Protein 3.99, Dietary fibre 2.9 gm, Calcium 227.0 mg, Iron 10.0 mg, phosphorous 82.0mg, Vitamin C 12.0 mg, Vit K 188.6 ug, riboflavin 0.4 mg and niacin 1.1 mg.

(c) **Medicinal Uses:** The colocasia leaves with high dietary fibre and low calorie content can help boost heart health, reduce cholesterol, aids in weight loss, control blood pressure, prevent anaemia and promote overall well being. The high levels of Vit C can prevent many diseases and fight free radicals that cause cancer and boost the immune system. They are a good source of Vit A and Carotenes which enhance eye health, maintain vision acuity and prevent various eyes disorders such as blindness, myopia, cataract and muscular degeneration. The of dietary fibre helps to maintain the normal digestive functioning.

Conclusion

Underutilized vegetables loaded with various nutrients. The incorporation of these leafy vegetables are good to add in daily diet can usually be discarded due to lack of information of its usage although these vegetables are incorporated into the regular diet in various forms. They also help in preventing from degenerative diseases and protection from eye problems, iron deficiency and oxidative damage. By creating awareness among community on neglected and underutilized vegetables is an effective way to help maintain a diverse and healthy diet and combat micronutrient deficiencies, the so called 'hidden hunger and other dietary deficiencies among the vulnerable social groups in developing countries.

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