

Health Benefits of Moringa Oleifera Leaves and its Sensory Evaluations

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Abstract: *Moringa Oleifera (Drumstick) is one of the most useful tropical trees. Its leaves are extremely valuable source of nutrition for people of all ages. Nutritional analysis indicates that Moringa leaves contain affluence of essential, disease preventing nutrients. They even contain all of the essential amino acids, which is unusual for a plant source. They are an exceptionally good source of provitamin A, vitamins B, and C, minerals (in particularly iron), The composition of the amino acids in the leaf protein is well balanced since the dried leaves are concentrated; they contain higher amounts of many of these nutrients. Nutritional contents of Drumstick leaves papad (drumy potato papad) was tested by RFRAC, Lucknow and the result was as follows-Vitamin A-50%, Vitamin C-17.83%, iron-18% and calcium-40% each content inn per 100g.*

Keywords: Moringa oleifera, vitamins, Anti-cancer

1. Introduction

Moringa oleifera is one of the best known medicinal plant. The Moringa plant has been consumed by humans (Iqbal et al., 2006). It is one of the richest plant sources of Vitamins A, B, C, D, E and K, The vital minerals present in Moringa 10 include Calcium, Copper, Iron, Potassium, Magnesium, Manganese and Zinc. It has more than 40 natural antioxidants. Moringa has been used since 150B.C. by ancient kings and queens in their diet for mental alertness and healthy skin. The leaves, pods, seeds, gums, bark and flowers of Moringa are used in more than 80 countries to relieve mineral and vitamin deficiencies, support a healthy cardiovascular system, promote normal blood-glucose levels, neutralize free radicals, provide excellent support of the body's anti-inflammatory mechanisms, enrich anemic blood and support immune system. It also improves eyesight, mental alertness and bone strength. It has potential benefit in malnutrition, general weakness, lactating mothers, menopause, depression and osteoporosis. It is also used to make an efficient fuel, fertilizer and livestock feed. Moringa leaf has been purported to be a good source of nutrition and a naturally organic health supplement that can be used in many therapeutic ways (McBurney et al., 2004; Fahey, 2005; DanMalam et al., 2001).

Anti-cancer Properties of Moringa

The presence of fatty acids could have attributed to the chemopreventive effect of boiled Moringa oleifera which modulates apoptosis in colon carcinogenesis. In addition, the presence of niazimicin and glucomoringin which have been reported to inhibit tumour cell proliferation, were also mentioned as possible compounds contributing to the anticolon carcinogenic effects of boiled Moringa oleifera. For the effect of boiled Moringa oleifera on several protein expressions, it was reported that in a dose dependent manner, all three PCNA, iNOS and COX-2 gene expressions were down-regulated which concluded the chemo-

preventive effect of boiled Moringa oleifera (Budda et al. 2011).

Antioxidant Properties of Moringa

Naturally occurring antioxidants, particularly polyphenols, are the main plant compounds that are able to decrease oxidative damage in tissues by indirect enhancement of a cell or by free radical scavenging (Du et al., 2010). The leaves of the Moringa oleifera tree have been reported to demonstrate antioxidant activity due to its high number of polyphenols (Sreelatha and Padma, 2009; Verma et al., 2009). Moringa oleifera extracts of both mature and tender leaves exhibit strong antioxidant activity against free radicals, prevent oxidative damage to major biomolecules and give significant protection against oxidative damage (Sreelatha and Padma, 2009).

2. Methodology

Characterizations of nutrition profile of Moringa oleifera leave

- Determination of vitamin A percentage
- Determination of vitamin C percentage
- Determination of Iron percentage
- Determination of Calcium percentage
- Determination of carbohydrate percentage
- Determination of energy percentage
- Determination of moisture percentage

Source: the following tests were determined at the RFRAC center (Regional Food Analysis Center) Lucknow

3. Result and Discussion

Determination of drumstick leaves

- Vitamin A
- Vitamin C
- Iron
- Calcium

- Carbohydrate
- Energy
- Moisture

3.1 Determination of nutrition composition of drumstick leaves products

Nutritive value of experimental sample (100g).The result shown in the form of table below.

3.2 Vitamin A, vitamin C and Iron

Table 1: Nutrient contents in drumstick leave papad,

Parameter	Experimental
Vitamin A (IU)	50 (2504.63 IU)
Vitamin C(mg)	17.83
Iron (mg)	32
Calcium (mg)	18

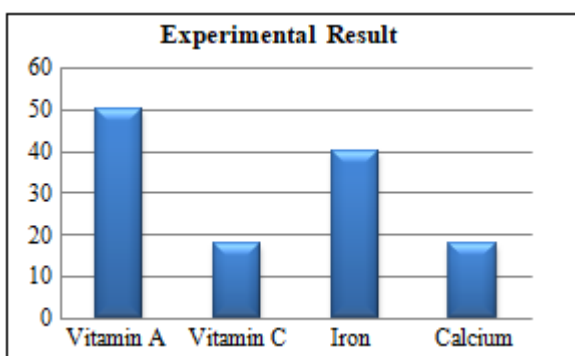


Figure 1: Graphical Representation Nutritional value of papad

Table 2: Carbohydrate, energy and moisture

Parameter	Experimental
Carbohydrate(g)	27.98
Energy (Kcl)	268
Moisture (%)	6

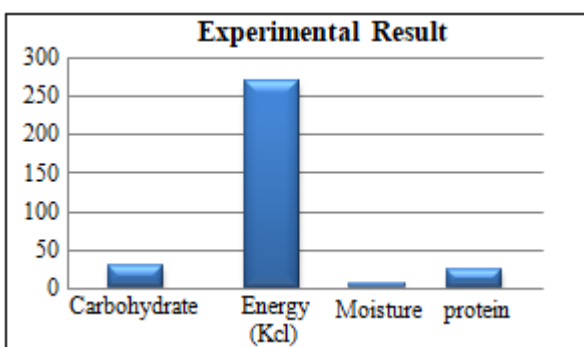


Figure 2: graphical representation of carbohydrate, energy, moisture and protein in experimental product

4. Summary and Conclusions

4.1 Nutritional profile of fresh and preserved drumstick leaves

Nutritional profile of fresh and preserved drumstick leaves Carbohydrates3.00%, Fiber-8.00%, Protein-19.00% Iron-

22.00%, Calcium- 18.00%, Vitamin A-151.00%, Vitamin C- 86%.

4.2 Sensory evolution of the different developed products

So the prepared drumstick leaves papad (drumy potato papad) product under gone sensory evaluation to find the most accepted product. For the sensory evaluation comparative test for colour, consistency, flavour and absence f defects parameter we done to find out most appropriate supplement. From the above panelist member and it gets highest scoring, then after sample T1 sample T2 and sample T3 respectively.

4.3 Analysis the material composition of the different developed product from dried drumstick leaves -

Nutritional contents of Drumstick leaves papad (drumy potato papad) was tested by RFRAC, Lucknow and the result was as follows-Vitamin A-50%, Vitamin C-17.83%, iron-18% and calcium-40% each content inn per 100g.

5. Recommendation

- Having high cholesterol has been linked to an increased risk of heart disease.
- Fortunately, many plant foods can effectively reduce cholesterol. These include flaxseeds, oats and almonds.
- Arsenic contamination of food and water is a problem in many parts of the world. Certain types of rice may contain particularly high levels.
- These results are promising, but it’s not yet known whether this also applies to humans.
- Inflammation is the body’s natural response to infection or injury.
- It’s an essential protective mechanism but may become a major health issue if it continues over a long period of time.

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