

REVIEW ON: SENSORY QUALITY OF FRESH BANANA BLOSSOM NUTRITIONAL, ITS FACTS AND THEIR BENEFITS

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Abstract: The Banana Blossom known as heart of banana and flower of banana and used for cooking and eating. It is filled with nutrients and also an edible flower in the edge of plant of banana. It is a big and purple red flower and it is growing from the bottom of banana bunch. The color of this flower is leafy maroon also having a creamy color layer inside, the mean range for color, appearance; aroma, texture, and overall acceptability of fresh banana blossom in the mean range of various sensory attributes by panel member were significantly higher. The Banana Blossom has tremendous nutritional value. Blossom of banana are excellent source of protein, fiber, minerals such as magnesium, iron, calcium, potassium and vitamin E. These flowers were liked very much by the judges. Many research studies have shown that it helps in curing many harmful diseases like anemia, diabetes and cardiovascular diseases. It is very helpful in losing weight.

Keywords: Banana blossom sensory, health benefits, nutritional properties

Introduction

Banana is one of the original fruits of humankind and has been named botanically as *Musa Paradisiaca*. Banana is a staple food for human since time immemorial. Banana is mostly grown in tropical and sub-tropical areas around the world. (Marikkar, *et al.* 2016). Banana plants can grow upto a height of 9 metres. The plant is termed as Kalpatharu, meaning hemp greatest likely benefit. The name came from an Arabic word "banana", means finger (Zehla, *et al.* 2018). Banana is one of the easily available, low cost and nutrient-rich fruits consumed across the globe almost all parts of banana plant are used in different aspects. Whole banana plant is useful in food, pharmaceutical, packaging, and many other industrial applications. (Zehla, *et al.* 2018). The banana plant blossom is known as a vegetable in different Asian Countries. It is also known as heart of banana and flower of banana and used for cooking and eating. It is filled with nutrients and also a edible flower in the edge of plant of banana. It is a big and purple red flower and it is growing from the bottom of banana bunch. The color of this flower is leafy maroon also having a creamy color layer inside (Elaveniya and Jayamuthunagai, 2014). The preservation of banana blossom is used to find the heart of banana and flower of banana and also it used to eat raw and also it can be cooked The flower of banana is cooking for delivering many types of dishes, and it is very famous in the countries those are developing like, Malaysia, Philippines, Indonesia, and Srilanka. The blossom of banana is nutrition flower which is inside the bottom of the plant (Sharmila and Puraikalan 2013). Banana flower is not absolute crop of food but it is also recognize in medical purpose. Banana blossom is generally used for the ill health like heart attack, diarrhoea, asthma and stomach pain it could also be used to the cure of bronchitis, dysentery, weight loss, anemia, constipation, ulcers, menstruation, diabetes, cancer etc (Sharmila and Puraikalan, 2013). The banana blossom has tremendous nutritional value banana blossom contains calories 51 kcal, 1.6 gm of protein, 0.16 gm fat, 57gm of fiber, 56 mg of calcium, 73.3mg of phosphorus 56.4 mg of iron, 553.3 mg of potassium, 48.7 mg of magnesium, 1.07 mg of vitamin E per 100gm. The banana blossom are a major mineral sources such as magnesium, iron and copper. It is having best quality protein also it is having amino acid with higher dietary fibre, (Sheng, *et al.* 2010). The intake of banana in blossom in diet of urban people is found to be diminishing due to the busy lifestyle. Fresh fruits and vegetables are good examples of convenient foods. In the present days, convenience food are welcomed by the Indian households due to the less time spent by working women in the kitchen. Minimal processing of fresh products could be employed to maintain the fresh like characteristics and also provide the convenience demanded by consumers. The consuming attribute of a consumer depends upon the nutritional value, simplicity, safety, and convenience. Minimal processing aids in quick and easy preparation of ready meals. The growing demand for freshly processed food with the guarantee of safety has urged those in research to focus on studying new ways of extending the shelf life of fresh-cut produce. (Ambrose, *et al.* 2018).

MATERIALS AND METHODS

Acharya *et al.* (2019) studied banana flowers were investigated for their dehydration and concentrate extraction with their nutritional properties. Banana (*Musa Paradisiaca*) flower is rich in phytochemicals (vitamins, flavonoids and proteins) and has antioxidant properties.

Anand and Sharma (2019) reported that blossom of the banana plant though very rich in micro nutrients majorly iron and fibre, they are lesser known and consumed by very less people. In view of this, an attempt was made to develop a value-added iron and fibre rich product for people suffering from micronutrient deficiency such as anemia etc. Along with banana blossom, Indian gooseberry was also used to enhance the bioavailability and absorption of iron. The fresh collected banana blossom were peeled,

cleaned and then grinded into a powder and stored in aluminum foil to prevent exposure to moisture.

Golani *et al.* (2019) has worked on *Musa acuminata* is commonly known as banana plant. The flower of the banana plant is also known as banana blossom or banana heart. The family to whom banana belongs is called Musaceae as banana blossom, represent a valuable source of potassium, vitamin A, vitamin C, vitamin E, minerals, fatty acid content, flavonoids, saponin, essential and non-essential amino acid, tannins, glycoside and steroid. Banana blossom is a good antioxidant source. Banana blossom has a huge nutritional value and healthy benefit. In most tropical countries, bananas blossom are used for cooking. People came to the conclusion that cooking of banana flower has about the very high nutritional and calorie content than other ones. The blossom of the banana plant is used in Southeast Asian, Indian, and Bengali cooking either served raw with dips or cooked in soups, dip fried, cutlet and curries. The objective of present study was the utilization of banana blossom could provide health benefits of human being. All parts of banana have nutritional and traditional medicinal uses. Many *in vitro* studies other medicinal uses are in surgical dressing, pain relief, food and pharmaceuticals, nano medicine, pollution control, apoptosis and cell cycle.

Singh (2017) considered banana blossom as functional food as it has enormous nutritional and health benefits is a rich source of protein, fibre, vitamin A, vitamin C, vitamin E, antioxidants, phosphorus, potassium, magnesium, calcium and iron. Also, it has many health improving properties such as it lowers menstrual bleeding, it facilitates new mothers milk supply, helps in beating diabetes, ulcer and anemia, it reduces anxiety, it helps in losing weight and it is good for overall gastrointestinal health. Although it is a wonder food, not enough importance is given to it.

Divya *et al.* (2016) observed that the use blossom of banana is tradition for the medicinal purpose, like, bronchitis treatment, ulcer and constipation issues, in their research they also observed a preliminary evaluation of anti-inflammatory and anti-oxidant activities of *Musa paradisiaca* is providing validity for plant use in folk medicine. It is also shown that the blossom of banana has higher value of nutrition along with antioxidant and also can use dehydrated flour in diet and it is easily comes in the form of formulation of food.

Salgar *et al.* (2015) examine that the banana tree is known as *Musa acuminata*. The banana flower is also called blossom and heart of banana. They belongs to Musaceae family, shows a valuable potassium vitamin A, vitamin C, vitamin E, minerals, fatty acid content, flavonoids, saponin, essential and non-essential amino acid, tannins, glycoside and steroid. The source of better antioxidant is the flower of banana. In many countries, flowers of bananas are used for cooking. Public ended this with the flowers of banana cooking is nutritionist and content calories are in higher ratio. The aim of the study is the use of flowers of banana that is beneficial for the human health.

Sultana (2013) showed that banana flower contained 2185.7 Kcal/kg ME, 13.8 g/100g of crude protein, 91.1 g/100g of moisture, 27.4 g/100g of crude fibre, 3.9 g/100g of ether extract, 10.2 g/100g of ash and 44.7 g/100g of nitrogen free extracts. Thus, banana flower can be promisingly used as an alternative animal feed.

Kumar and Bhowmik (2012) reported the banana is one of the easily available, cost effective and nutrient-rich fruits eaten throughout the world. Its name came from an Arabic word "banana", which means finger. It has a place in kingdom Plantae, family Musaceae and class Musa. Banana is staple nourishment for human since time immemorial. Banana is, for the most part, developed in tropical and sub-tropical zones far and wide. The fruit can either be expended as ready, since it contains high sugar content or utilized unripe, essentially in some conventional dishes which demands high starch content.

Salvador, (2012) assessed the consumer acceptability of banana blossom "sisig" at Isabella State University, Echague, Isabel, Philippines for the School Year 2011-2012. The study used a descriptive form of research which described the level of evaluations of the taste banana blossom "sisig" in terms of variables such as appearance, color, texture, aroma, presentation, and taste. In analyzing the data gathered the 9-point hedonic scale was used. Evaluation of the product was done when respondents are grouped by their profile. The data taken from the evaluations were analyzed Variance. The highlight of the study were as follows: a) the sensory evaluation of the respondents in all the variables ranged from "like very much" to "like extremely" regardless of any profile variable; b) the respondents' category influences their evaluations in taste but has nothing to do on the rest of the variables; c) the profiles of the respondents do not affect their evaluations in the different variables; d) there is a positive return on investment in the commercialization of banana blossom. Based on result of the study, it revealed that the appearance and taste is "like extremely" and the color, texture, aroma as well as presentation is "like very much" by the tasters.

Sheng *et al.* (2011) observed that the flowers of banana is subtended by big reddish, fleshy or purple color, by the fruit matures it fall out. It is having great nutritional value same as fruits of banana. They all are a beneficial source of vitamins, minerals, and also for protein and fibre. Blossom of banana is a better source of phytochemicals those are working as antioxidants. By the reference of African Journal of biotechnology, the information of nutrition is organized on the banana blossom two species *Baxijiao* and *Paradisiaca*, (per 100g) - Calories - 51 Kcal, Phosphorus - 73.3 mg, Protein - 1.6 g, Iron - 56.4 mg, Fat - 0.6 g, Copper - 13 mg, Carbohydrates - 9.9 g, Potassium - 553.3 mg, Fibre - 57 g, Magnesium - 48.7 mg, Calcium - 56 mg and Vitamin E - 1.07 mg.

Emaga *et al.* (2007) observed that the blossom of banana is generally thought to be a part of banana cultivation. The first rank holder in the world is India for the production of Indian state. Tamil Nadu produces the highest amount of banana using 118.04 hectares of the cultivable land. Very high nutritional value is found in banana blossom. Most of the ethnic population of Asia either consumes it either as a raw or cooked vegetable. In real sense it is an agricultural by-product but it can produce many food items. Although India leads in the cultivation of banana, researchers have not thoroughly studied the health benefits and nutritional characteristics of banana blossom. The tedious procedure of preparation results in limited consumption of banana blossom.

Results

The paper by Salvador (2012) show that Organoleptic evaluation of fresh banana blossom was conducted in which fresh banana blossom was evaluated for sensory attributes by a panel of semi-trained judges using 9 point hedonic scale. The mean range for color, appearance, aroma, texture, and overall acceptability of fresh banana blossom in the mean range of various sensory attributes

by panel member were significantly higher. Fresh Banana Blossom was liked very much by the judges.

Sheng *et al.* (2011) show that Banana flower is rich in nutrients in which major part of it is contributed by potassium and calcium it is also a good source of dietary fiber, protein, iron, and magnesium, making it a salubrious food. The Banana Blossom has excellent nutritive value. The 100g of Banana Blossom, contains 51 kcal of energy, 1.6g of Protein, 0.6g of Fat, 9.9g Carbohydrate, 5.7g of Fiber, 56mg of Calcium, 73.3mg of Phosphorus, 56.4mg of Iron, 13mg of Copper, 553.3 mg of Potassium, 48.7mg of Magnesium, 1.07mg of Vitamin-E.

Result obtained show that that Banana blossom has tremendous nutritional value similar to banana fruits. They are an excellent source of protein, fiber, and certain minerals, good source of potassium, calcium, iron, magnesium and vitamin. Besides banana, blossoms are also an excellent source of certain photochemical, which act as antioxidants. It can be designated as a super food due to its high nutritional value and medical benefits. Banana flower helps in regulating blood pressure prevents gastrointestinal disease, cancer, anemia and it also helps in alleviating symptoms of pre menstrual syndrome of the presence of vitamin B₆ in it. The flower has been used in traditional medicine to treatment bronchitis constipation and ulcer problems. Plantain Blossom is generally helps to cure stomach ulcers and also useful in treating throat ulcers. It can cure inflammation of eyes and eye afflictions. It can also help in treating vata diseases and nervous debilities. The Blossoms contain a class of photochemical known as saponins. Saponins lower LDL or bad cholesterol, boost our immunity against infection and are thought to inhibit the growth of cancer cells. They also have antioxidant activity and so can reduce our risk of chronic diseases including cardiovascular disease. The extracts of banana blossom have antioxidant properties that prevent free radicals and control cell and tissue damage.

CONCLUSION

Fresh Banana Blossom is easily available in rural and urban areas too, at a quite low cost. Fresh Banana Blossom has been liked by judges on the behalf of judges on the behalf of sensory evaluation. The Banana Blossom has tremendous nutritional value. Banana flower is rich in nutrients in which major part of it is contributed by potassium, magnesium, iron and calcium it is also a good source of dietary fiber, protein, iron, and , making it a salubrious food. It is found that banana blossom has extraordinary disease preventing and disease curing properties. Banana flower helps in regulating blood pressure prevents cardiovascular disease, throat ulcers, constipation, gastrointestinal disease, cancer, anemia and it also helps in alleviating symptoms of pre menstrual syndrome of the presence of vitamin B₆ in it.

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