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Nutrition and Health benefits of ripe banana fruits

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Daily fruit intake is crucial for lowering non-communicable diseases like overweight and obesity, cancer, cardiovascular, strokes, constipation, diabetes and other degenerative related diseases (Beecha, 1999). WHO (2019) recommended the intake of fruits at least 400 g daily in adults. India is the world's leading banana producer, accounting for 17.8% of global output (FAO, 2002). Vitamins, minerals, carbohydrates, flavonoids, and phenols are abundant in fruits and vegetables, making them excellent sources of health-promoting phytochemicals (Craig and Beck, 1999). Various groups have conducted an extensive study on these phytochemicals, which has indicated that they play a significant role in the prevention of certain degenerative and malnutrition-related disorders (Kumar *et al.*, 2012). In tropical and subtropical countries around the world, bananas are one of the most commonly distributed and consumed fruits (Mohammad and Saleha, 2011). In terms of nutrition, bananas are one of the world's most important food crops, rich in minerals, vitamins, carbohydrates, flavonoids, and phenolic compounds (Singh *et al.*, 2018) and they are one of the most widely available and economically viable fruit crops.



Nutrition composition of ripe banana fruits

Banana fruit contains various amounts of nutrients including moisture in the range of 66.23 to 75.25 %, ash (1.61-2.22 mg/100 g), and protein (3.80 - 4.20 %) depending on variety, genotype and climate (Akaninwor, and Sodge, 2005). Obiageli *et al.* (2019) revealed fibre content in ripe banana fruit range from 1.00 - 2.42 mg/100 g. Fibre prevents colorectal cancer and constipation (Chuwa *et al.*, 2020). The crude fat of ripened banana fruit ranges from 0.66 - 2.59 %. The low-fat content of ripe bananas is an advantage for making low-fat foods for people who are suffering from hypertension, cholesterol and cardiovascular diseases (Gasster, 1963). As per the observations of Opara *et al.* (2013), the fully ripe banana has total soluble solids in the range of 19.63 to 20.70 °B while titratable acidity is from 0.34 to 0.41%. Sidhu and Zafar (2018) noted a value of 74.90, 2.60, 22.84 and 12.23 per cent for moisture, dietary fibre, carbohydrates and total sugars, respectively in banana fruit. The vitamin C and total carotenoid content observed by them was 8.70 mg/100 g and 200-10,067 g/100 g, respectively while the energy value was examined to be 89 Kcal. A wide range for ash (1.61-2.22 %), protein (3.25-4.95 %), crude fibre (1.58-2.42 g/100 g), total soluble sugars (37.50-43.80 g/100 g) and reducing sugars (16.75-19.12 g/100 g) has been detected by Kookal and Thimmaiah (2018) in three cultivars of ripe banana fruit. The chemical composition of ripe banana fruit is presented in Table 1.

Table 1: Chemical characteristics of ripe banana fruits on a wet basis

Parameters	Chemical composition
Moisture (%)	73.31 ± 1.72
Total Soluble Solids (TSS °B)	21.30 ± 0.58
Total sugars (%)	12.25 ± 0.06

Reducing sugars (%)	4.90 ± 0.26
Titrateable acidity (%)	0.38 ± 0.05
Crude protein (%)	1.10 ± 0.04
Crude fat (%)	0.98 ± 0.05
Crude fibre (%)	0.98 ± 0.24
Total carbohydrates (%)	22.83 ± 0.66
Ascorbic acid (mg/ 100 g)	20.24 ± 0.83
β-carotene (mg/ 100 g)	3.90 ± 0.07
Ash (%)	1.78 ± 0.12
Total energy (Kcal/ 100 g)	100.62 ± 1.89

Data represented in the table are the average pooled values (mean ± SD)

HEALTH BENEFITS OF RIPE BANANA FRUITS

Increased energy

Ripe bananas are an excellent source of energy while also having a low glycaemic index. As a result, eating bananas offers energy while also preventing sugar surges. Participants in marathons and football games suggested eating bananas before the game to increase stamina. When consumed half an hour before working out, the soluble fibre and natural sugars provide a steady source of energy. Banana is a high-energy food that also aids in the body's resistance to a viral illness. Furthermore, anyone who takes it has increased stamina and vitality.

Constipation prevention

Banana fruits are a good source of dietary fibre (Chuwa *et al.*, 2020). Increased DF reduces intestinal transit time and increases stool weight and the number of defecations. Because of their water-holding capacity, it increases the majority of faecal mass, and the stools become bulkier and moister (Southgate and Penson, 1983). As a result, high-fibre diets can help prevent and treat constipation for a long time. Constipation can be relieved by eating a few bananas rather than taking laxatives. FOS (fructo-oligosaccharides) are abundant in bananas, which feed the beneficial bacteria that live in our intestines. These bacteria reduce the stomach pH, which helps to suppress the harmful bacteria (Nugent, 2005).

Control overweight and obesity

Eating bananas every day before meals (lunch and supper) acts as an appetite suppressant, limiting the amount of food consumed and preventing weight gain. This fruit is also thought to aid in the prevention of mid-afternoon slumps. The likelihood

of gaining weight and becoming obese is low regardless of how many bananas a person consumes.

Antioxidant

The antioxidant potential of banana fruit to scavenge ROS is well recognised. β -carotene and β -cryptoxanthin are provitamin A carotenoids found in banana fruit, but others like lycopene and lutein have high antioxidant properties (Erdman *et al.*, 1993). Lycopene has been shown to protect men from prostate cancer, while lutein has been shown to protect humans by acting as an inhibitor of age-related macular degeneration (Davey *et al.*, 2006).

Improves Digestion

Our normal diets frequently do not provide enough fibre. Fibre is critical for food to pass smoothly through the digestive tract. Because bananas are high in dietary fibres, they help to enhance bowel motions significantly.

Heartburn prevention

Bananas help to reduce heartburn by strengthening the protective mucus layer and adjusting the pH of the stomach. Bananas' high fibre content helps the food go through the digestive tract more quickly, reducing acid reflux.

Stomach ulcers prevention

Bananas can also protect the stomach from ulcers if consumed consistently. The mucus barrier in the stomach thickens over a lengthy period of consuming bananas. Instead, hydrochloric acid damage is prevented. Protease inhibitors found in bananas aid in the reduction of bacteria that cause stomach ulcers. Bananas were found to be ingested by the majority of those who had good digestion.

Improve haemoglobin and body immune system

Bananas are high in vitamin B₆, they produce enough haemoglobin, which is essential for a healthy blood supply (Leklem, 1999). Vitamin B₆ aids in the production of antibodies, the breakdown and synthesis of amino acids, and the regulation of blood sugar levels, among other functions. These aid in the body's development of a powerful immunological response. According to some research, pyridoxine may help prevent oesophageal cancer (WCRFI, 2007). Vitamin tablets can certainly be replaced by bananas.

Soften the body skin

In today's environment, beauty has become extremely important. We all want to have beautiful, healthy skin and bananas can help us do just that. Banana peels are excellent for treating skin disorders including acne and psoriasis. When you rub the banana peel on the problematic area, it releases a lot of fatty acids that aid to treat skin issues and moisturise the skin from within. Banana peels have been used to remove warts for centuries.

Relief stress and mood less

Bananas contain the amino acid tryptophan, which the body quickly converts to serotonin. Serotonin aids in sleep regulation, stress reduction, mood enhancement, and happiness. Although bananas are not the largest source of serotonin, they do aid to improve your mood. This is why we see folks munching on a banana when stressed out at work.

Improve body relaxation and prevent hangovers

After a night of binge drinking, bananas are an excellent cure for hangovers. Blending the banana with coconut milk, berries, and ice might offer you a boost of energy and aid in hangover recovery. It also relieves headaches pain and discomfort. Bananas are a better alternative to caffeine for reducing hangover symptoms, according to studies.

Health care support

Bananas are high in potassium, they're great for treating insect bites, scrapes, bruises, wounds and damaged hair. Because of the high starch content in banana peels, rubbing them on your teeth can help whiten them. Bananas can also help with exfoliation and leave your skin feeling soft and silky. Aside from their health benefits, banana peels can also be used as an excellent fertiliser for a variety of plants as well as for biogas production.

CONCLUSION

Today people are suffering from non-communicable diseases due to high consumption of junk foods with high fat, sugar and salt with low intake of fruits. Consumption of at least 400 g of bananas fruit daily will help to maintain good health with a low risk of getting these lifestyle diseases such as hypertension, strokes, cardiac diseases, diabetes and cancer. Therefore, in order to cure these diseases, fruit such as bananas claims to improve their health status with their health-promoting properties. Readers of this article are recommended to change their lifestyle by increasing their consumption of banana fruits every day.

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