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A Review: Application and Effects of Green Banana on Therapeutic Activity

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Abstract - : Banana has tremendous health benefits and it is high in fibers and a source of vitamin A. Banana belongs to the family 'musaceae' is a very common plant intropical and subtropical countries. Green bananas used to improve insulin level and it is low in sugar. Two spoon of raw banana flour contain nutrients of seven bananas which reduces cholesterol level. This review studied that the effect on therapeutic activities of green banana which include antidiarrheal, antimicrobial, hypocholesterolaemic activity, antihypertensive activity, effect against atherosclerosis, antioxidant action, wound healing activity, anti-allergic effect and antimalarial activity. Amount of starch in bananas that have endured a drought, the preclimacteric stage has fallen from 70-80% to fewer than 1%. In United States approximately 90% of bananas produced as fresh fruit. For future processing 5% is consumed in processed form providing a good potential.

Key Words**:** *Green banana, gluten free, raw banana flour.*

1.INTRODUCTION

Food processing is an endeavor to transform the shape of food, including agricultural and livestock commodities, into the intended food items in order to increase the food's quality, acceptance, and storage capacity. Banana is one of the most important fruit in the world. The crops cultivated in tropical and subtropical areas of the globe. Banana belongs to the family 'musaceae' is a very common plant. Banana have been first domesticated in south east Asia and their consumption is mentioned in early Greek . Latin. Their cultivation increases until banana became a staple food stuff in many regions and in 19th century they began to appear in the markets of United States. Banana is a healthy fruit which gives more benefits when it is unripe as green banana. Green banana called 'Plantain' a member of the genus Musa scientifically called as Musa paradisiacal is an herbaceous plant.

Green banana flour has tremendous health benefits and have various nutritional properties. Green banana are easily available in market and it is low in cost. Green banana flour is consumer friendly ingredient than corn flour which has tremendous opportunity, particularly in natural product industry. Green banana flour used to reduce or replace wheat or rice flour. This super fruit can also add to their own foods and beverages, shakes, smoothie, and also use to make snacks and energy bars. This green banana helps to keep gut bacteria healthy. Apart from their culinary uses, green unripe bananas have antibacterial characteristics and were utilized as medicine in ancient India and China due to their high antioxidant content. Unripe bananas are largely made up of starch, which accounts for 70 to 80 % of their dry weight (1). Resistant starch which is not digested in the small intestine, accounts for large portion of that starch. Bananas, on the other hand, lose their starch when they ripen. The starch in the fruit is transformed into simple sugars when it ripens (sucrose, glucose, fructose). Ripe bananas on the other hand contain only 1% starch.

2. CHARACTERISTICS OF GREEN BANANA

When it comes to maturity the composition of bananas changes dramatically. Bananas have eight stages of maturation, according to Loesecke (1950) (2). This modification also occur in the starch component of raw bananas, which is the predominant component. The average amount of starch in bananas that have endured a drought, the pre-climacteric stage has fallen from 70-80% to fewer than 1%. Chemical and physical features can be used to classify green banana flour. XRD analysis, granule morphology, swelling volume, freeze-

thaw stability, pasting properties and water absorbing capacity can all be employed as parameters based on physical qualities.

3. PROCESSING OF GREEN BANANA

Banana based processed foods are becoming increasingly popular in our daily lives. Approximately 90% of bananas produced are consumed as fresh fruit in the United States. Mererly 5% is consumed in processed form providing a good potential for future processing. About 2.5% is only processed purely as banana products and the rest as an ingredient in foods. About 17 types ofproducts could be prepared from banana. The primary product of banana in market is fried chips rest as banana pulp, banana wafers, banana powder, etc. (1).

3.1. Dehydrated Banana Chips

Kushal dhake, S. K. Jain, S. S. Lakhawat stated that CFTRI Mysore, developed the process technique for banana chips of two types, 'Dwarf Cavendish' and 'Nendran'. Peeling, slicing and dehydrating are all used to make the chips. Because the phenolases enzyme responsible for browning is inactivated by heat treatment, water or steam blanching can help to minimize browning. To reduce drying time and expense, banana chips can be osmotically dehydrated using brine solution and then dried in a standard air drier, microwave, radio frequency, infrared, vaccum, or freeze dryer. Although freeze drying produces a high quality product, it is not cost-effective.

3.2. Green Banana Flour

Green unripe banana can be used to make flour. Steaming the bananas before peeling them makes it easier to peel them, reduces discolouration, and retains more tannin, but it takes longer to dry. Fruits are peeled by hand or machine sliced or diced into 5 to 10mm thick slices. The slices will be laid out in the open sun to dry. Banana flour is a crucial ingredient in the baking and confectionary industries. Production of green banana flour when the fruits is unripe and incorporation of the flour into numerous inventive goods, such as cookies, is a new economic method to boost banana use. Cookies that take a long time to digest and high fiber breads (1).

4. THERAPEUTIC ACTIVITIES OF BANANA

This therapeutic activities of banana observed as early as in 1930_s by Gaurav Joshi[q*], Manoj Kumar Sarangi[1]

4.1. Antidiarrheal Activity

In children with diarrhea, the antidiarrheal action of green banana diet was found to be quite effective. Antiulcerant properties ofbanana is a fruit. Peptic ulcer illness is treated with this plant in herbal therapy. The use of M. Sapientum as a component of a peptic ulcer treatment. Herbal medicine has been tested and proven to be beneficial. Green bananas include pectin and phophatidylcholine. Strenghthens the protective mucousphospholipid layer the mucous membrane of the stomach. The gastro intestinal mucosa is protected from erosion by a natural flavonoid found in unripe bananas.

Banana pulp, leucocyanidin and its synthetic counterparts. M. Sapientum var. paradisiaca powder. Aspirin, indomethacin, and other antiulcer drugs have antiulcerogenic properties. Presnisolone induced stomach ulcers, phenylbutazone, and duodenal ulcers in rats caused by cysteamine and histamine, guinea pigs, respectively (3).

4.2. Antimicrobial Activity

M. Paradisiaca var. aqueous extract of unripe fruit peels and leaves serpentine has been coated in order to demonstrate antibacterial efficacy against Staphylococcus and other bacteria. Dehydrogenase assay with pseudomonas species.

4.3. Hypocholesterolaemic Activity

Hemicellulose and other neutral detergent fibres (NDF) from unripe M. paradisiaca fruit demonstrated low glucose and cholesterol absorption, as well as low serum and urine levels. Hypolipidemic activity was observed in a strain obtained from unripe fruits. As indicated by lower cholesterol and triglyceride levels (TG), serum and liver levels of free fatty acids and phospholipids.

4.4. Antihypertensive Activity

The antihypertensive effect of M. paradisiaca in albino rats suggested that a banana diet has a mean arterial blood pressure lowering as well as an onset preventing effect in rats with elevated blood pressure induced by desoxycorticosterone acetate (DOCA) administration. It was also reported that the antihypertensive effect of ripe banana pulp in deoxycorticosterone annotate-induced hypertensive rats, which may be due to the high tryptophanand carbohydrate content of banana that increases serotonin levels and gives serotonin-mediated natriorexic effect. In both noradrenaline-and potassium chloride-contracted rat aortic rings, an aqueous extract of the ripe M. paradisiaca fruit was found to have a concentration-dependent hypotensive effect. The loosening effect was caused by non-specific interference in calcium ion availability, which is required for smooth muscle contraction.

4.5. Effect against Atherosclerosis

In vitro, M. paradisiaca prevents cholesterol crystallisation, which could have implications for atherosclerotic plaque and gallstones in humans. Diet-induced atherosclerosis is a condition that occurs when a person consumes a high-fat. The extract was found to be protective in the treatment of atherosclerosis and thyroid dysfunction in this investigation, however it was not as successful as other treatments. lants were examined. The centre of a banana in a human was

discovered to be, the amount of oxidative stress in the plasma was greatly reduced, and LDL resistance to oxidative modification was improved.

4.6. Antioxidant Action

Because of the presence of dopamine, ascorbic acid, and other antioxidants in banana, plasma oxidative stress is dramatically reduced in healthy humans after just one banana meal. Antioxidant activity was also found in an aqueous acetone extract of banana peel using the -carotene bleaching, DPPH free radical scavenging, and linoleic acid emulsion methods.

4.6. Wound healing activity

In rats, methanolic and aqueous extracts of the plantain banana (M. Sapientum var. Paradisiaca) were used to cure wounds. Both extracts were observed to improve hydroxyproline, hexuronic acid, hexosamine, superoxide dismutase, wound breaking strength, and glutathione levels, as well as wound breaking strength. They also reduced the size of the wound, the size of the scar, and the amount of lipid peroxidation. The antioxidant properties of the plantain were blamed for the results.

4.7. Anti-allergic effect

With an IC50 value of13.52.4, the aqueous extract of ripe M. Serpentine pulp was found to have significant anti-allergic action of antigen induced degranulation in RBL-2H3 cells.

4.8. Antimalarial Activity

In Comores, Ngazidja, a decoction of M. paradisiaca leaves mixed with Ocimum americanum and Ocimum gratissimum is used to treat malaria. However, an in-vitro investigation utilising a chloroquine-resistant strain of Plasmodium falciparum shows that this plant is useless against malaria. The trunk juice of the plantain banana tree (M. Sapientum var. Paradisiaca) has been set up to induce contraction in skeletal muscles by enhancing excitation-contraction coupling and transmembrane Ca2+ fluxes the stem juice of the plantain banana tree (M. Sapientum var. Paradisiaca) has been set up to induce contraction in skeletal muscles by enhancing excitation-contraction coupling and transmembrane Ca However, the extract's in-vivo action in mice was insufficient to protect against malice (4).

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