



ISSN 2278- 4136

ZDB-Number: 2668735-5

IC Journal No: 8192

Volume 1 Issue 3

Online Available at [www.phytojournal.com](http://www.phytojournal.com)

## Journal of Pharmacognosy and Phytochemistry

### Traditional and Medicinal Uses of Banana

K. P. Sampath Kumar<sup>1\*</sup>, Debjit Bhowmik<sup>2</sup>, S. Duraivel<sup>3</sup>, M. Umadevi<sup>4</sup>

1. Department of pharmaceutical sciences, Coimbatore medical college, Coimbatore, India.
2. Karpagam University, Coimbatore, Tamil Nadu, India.  
[E-mail: [debjit\\_cr@yahoo.com](mailto:debjit_cr@yahoo.com)]
3. Nimra College of Pharmacy, Vijayawada, Andhra Pradesh, India.
4. Centre for Plant breeding and Genetics, Tamil Nadu Agricultural University, Coimbatore, India.

Banana is the common name for herbaceous plants of the genus *Musa* and for the fruit they produce. It is one of the oldest cultivated plants. All parts of the banana plant have medicinal applications: the flowers in bronchitis and dysentery and on ulcers; cooked flowers are given to diabetics; the astringent plant sap in cases of hysteria, epilepsy, leprosy, fevers, hemorrhages, acute dysentery and diarrhea, and it is applied on hemorrhoids, insect and other stings and bites; young leaves are placed as poultices on burns and other skin afflictions; the astringent ashes of the unripe peel and of the leaves are taken in dysentery and diarrhea and used for treating malignant ulcers; the roots are administered in digestive disorders, dysentery and other ailments; banana seed mucilage is given in cases of diarrhea in India. Antifungal and antibiotic principles are found in the peel and pulp of fully ripe bananas. The antibiotic acts against *Mycobacteria*. A fungicide in the peel and pulp of green fruits is active against a fungus disease of tomato plants. Norepinephrine, dopamine, and serotonin are also present in the ripe peel and pulp. The first two elevate blood pressure; serotonin inhibits gastric secretion and stimulates the smooth muscle of the intestines.

**Keyword:** *Musa paradisiaca*, Medicinal Applications, Beneficial Effects, Immunity Booster

#### 1. Introduction

Fruits and vegetables are an important component of a healthy diet. Some fruits like bananas offer great medical benefits. This is partly because bananas aid in the body's retention of calcium, nitrogen, and phosphorus, all of which work to build healthy and regenerated tissues. In the following paragraphs, we will discuss some of these benefits. Bananas can be used to fight intestinal disorders like ulcers. Bananas are one of the few fruits that ulcer patients can safely consume. Bananas neutralize the acidity of gastric juices, thereby reducing ulcer irritation by coating the lining of the stomach. Not only can bananas relieve painful ulcer systems, and other intestinal disorders, they can also promote healing. The fruit is also used as treatment for

burns and wounds. For immediate pain relief, beat a ripe banana into a paste and spread it over a burn or wound. For best results, cover the area with a cloth bandage. Even banana leaves can be used as a cool compress for burns or wounds. Other medical benefits of bananas include aiding in constipation and diarrhea relief, treatment of arthritis, treatment of anemia

#### 1.1 Nutritional Value of Banana

Bananas are an excellent source of potassium. Potassium can be found in a variety of fruits, vegetables, and even meats, however, a single banana provides you with 23% of the potassium that you need on a daily basis. Potassium benefits the muscles as it helps maintain their proper working and prevents muscle spasms. In addition,

recent studies are showing that potassium can help to decrease blood pressure in individuals who are potassium deficient. Potassium also reduces the risk of stroke.

Bananas are also an excellent source of vitamins, including:

1. A - aids in healthy teeth, bones, soft tissue, and more
2. B<sub>6</sub> - aids the body's immune system, promotes brain health, heart health, and more
3. C - aids in healing, growth of tissue, ligaments, and more
4. D - helps the body to absorb calcium

As you can see by the vitamins present, bananas aid in keeping the body healthy in a number of ways, but there is a major benefit to the bones and muscles in the human body. Because bananas contain 41% of what you need each day in vitamin B<sub>6</sub>, you will find that eating bananas helps to increase your focus and mental acuity. In addition, bananas aid in vitality, which means that you will have more energy both mentally and physically. In fact, some studies show that bananas can help improve your mood whether you have the blues or are suffering from PMS.

Bananas are also an excellent food for people who want to lose weight. Although they are rather high in calories (200 per banana) and carbs (51 gm), they are a great source of energy. A banana eaten before a workout can provide you with the necessary energy to complete a longer workout.

Bananas provide you with many health benefits, but in addition to all of that, most people enjoy eating bananas as well. They can be eaten alone or combined with a fruit salad, added to jello, or made into a smoothie or a milkshake. They are one of the most affordable fruits in the marketplace and can be found year round nearly everywhere in the world!

## 1.2 Medicinal Properties of Banana

### Beneficial effects

- The fruit has a mild laxative property
- It is used as a remedy of constipation in children
- It is believed to be helpful in curing diarrhea and dysentery
- The fruit is used to heal the intestine lesions
- It forms the part of diets of children suffering from malnutrition
- The core of the stem is believed to be useful in stomach upset and diabetes
- The extract of core of the stem is considered to be useful in dissolving the stones in the kidney and urinary bladder and reducing the weight. The inflorescence mixed with coconut oil and spices is used for flushing the urinary blocks
- The fruit is believed to reduce the worm problems in the kids

### Adverse effects

- High carbohydrate presence combined with tryptophan content in this fruit is feared to affect user's state of awareness influencing brain activity and bringing sleepiness.
- Migraine headaches may be aggravated by consumption of bananas and alcohol. Hence, consumption of bananas is not advisable with alcohol.
- Consumption of bananas may have allergic reactions in few people.

### Nutritional properties:

- Hundred grams of ripe Banana provides approx. 116 KCal energy that makes it a supplementary staple food.
- Banana has relatively less proteins compared to cereals, absence of other protein rich foods in the diet can cause protein deficiency in people depending mostly on Banana as staple food

- Cooked or ripe Banana are easily digested
- Banana is a fair source of Vitamin B and Calcium
- Banana contains about 20% sugar.

### 1.3 Medicinal Qualities

Bananas are a highly nutritious fruit, but do they have any medicinal properties beyond their nutritive value. While it may come as a surprise to those of us accustomed to using bananas for baking and banana splits and little else, Perdue University boldly states that every part of the banana plant has medicinal properties. Among the properties cited:

- **Flowers:** Used to treat dysentery, ulcers, and bronchitis. Cooked, flowers are considered a good food for diabetics.
- **Sap:** Chemically, banana sap has astringent qualities. In traditional medicine, the sap is used to treat a wide variety of ailments, including leprosy, hysteria, fever, digestive disorders, hemorrhage, epilepsy, hemorrhoids, and insect bites.
- **Roots and Seeds:** Treat digestive disorders
- **Peel and Pulp:** Scientifically shown to have both antifungal and antibiotic components. These structures have also been identified as containing the neurotransmitters norepinephrine, serotonin and dopamine.

### 1.4 Medicinal Importance

#### Reduced risk of high blood pressure

Bananas are one of the best sources of potassium, an essential mineral for maintaining normal blood pressure and heart function. A medium-sized banana provides 350 mg of potassium. The effectiveness of potassium-rich foods in lowering blood pressure has been demonstrated by a number of studies. The US Food and Drug Administration have allowed the banana industry to make official claims for the fruit's ability to

reduce the risk of blood pressure and stroke. According to the FDA, "Diets containing foods that are good sources of potassium and low in sodium may reduce the risk of high blood pressure and stroke." Plus, potassium helps your body maintain normal fluid and electrolyte balances in the cells.

Scientists report that natural compounds in bananas act in a manner similar to anti-hypertensive drugs. The team studied six popular banana varieties and found that all had ACE-inhibiting properties, though the ripened bananas had a stronger action than unripe ones. Researchers have reported that blood pressure fell by 10% in people who ate two bananas daily for a week.

### 1.5 Reduced Risk of Stroke

Scientists suggest that people with a low amount of potassium in their diet may have an increased risk of stroke. A study of 5,600 people aged over 65 found that those with the lowest intake of the potassium were 50% more likely to suffer a stroke. High-potassium foods, like bananas, may lower the risk of stroke, but researchers say that more studies are needed to confirm whether increasing potassium in the diet can prevent strokes.

### 1.6 Restore normal bowel Activity

Because the banana is rich in nondigestible fibers (including cellulose, hemicellulose, and alpha-glucans) it can help restore normal bowel activity and help with both constipation and diarrhea. Bananas normalize the colon's function to absorb large amounts of water for regular bowel movements. Their usefulness is due to their richness in pectin, which is water-absorbent and this gives them a bulk producing ability.

Bananas are an exceptionally rich source of fructooligosaccharide, a compound called a prebiotic because it nourishes probiotic (friendly) bacteria in the colon. These beneficial bacteria produce vitamins and digestive enzymes that improve our ability to absorb nutrients, plus compounds that protect us against unfriendly microorganisms. When fructooligosaccharides are fermented by these friendly bacteria, not only

do numbers of probiotic bacteria increase, but so does the body's ability to absorb calcium. For this reason, ingesting antibiotics harm these beneficial bacteria.

Research published in *Digestive Diseases and Sciences* underscores just how much bananas can improve nutrient absorption. In this study, 57 babies (5-12 months) with persistent diarrhea of at least 14 days duration were given a week's treatment with a rice-based diet containing either green banana, apple pectin or the rice diet alone. Treatment with both green banana and apple pectin resulted in a 50% reduction in stool weights, indicating that the babies were absorbing significantly more nutrients.

### **1.7 Protection from ulcers & Heartburn remedy**

Bananas have long been recognized for their antacid effects that protect against stomach ulcers and ulcer damage. A flavonoid in the banana, leucocyanidin, has been found to significantly increase the thickness of the mucous membrane layer of the stomach. Since bananas help to neutralize acidity, they are also a great way to get rid of heartburn. In an animal study, a simple mixture of banana and milk significantly suppressed acid secretion.

### **1.8 Protection against neurodegenerative diseases (Alzheimer's disease)**

Researchers at Cornell University investigated the effects of apple, banana, and orange extracts on neuron cells and found that the phenolic phytochemicals of the fruits prevented neurotoxicity on the cells. Among the three fruits, apples contained the highest content of protective antioxidants, followed by bananas then oranges. These results suggest that fresh apples, banana, and orange in our daily diet along with other fruits may protect neuron cells against oxidative stress-induced neurotoxicity and may play an important role in reducing the risk of neurodegenerative disorders such as Alzheimer's disease.

### **1.9 Perfect Baby food**

Bananas are the best solid food to introduce to infants. A mashed ripe banana is an extremely simple and healthy baby food. Potassium, Fiber, Calcium, Magnesium, Phosphorus, Selenium, Iron, Vitamins A, B<sub>2</sub>, B<sub>6</sub>, C, E, Niacin, Folate, and Pantothenic Acid. Furthermore, bananas are very easy to digest and rarely cause allergic reactions. Bananas are part of the BRAT diet, a diet many physicians recommend for children recovering from gastrointestinal problems, particularly diarrhea. Recent study found evidence that a higher consumption of bananas and apple juice from concentrate may protect against wheezing in children.

### **1.10 Cholesterol-lowering effect**

Animal studies have shown that banana has the potential to lower cholesterol. It was suggested that the dietary fibre component in banana pulp was responsible for its cholesterol-lowering effect. The amount of dietary fibre in banana is relatively constant during banana ripening.

### **1.11 Kidney Health**

Bananas promote an overall improvement of the functional efficiency of kidneys. Benefits to the kidneys are again due to the high potassium content of bananas. A normal intake of potassium suppresses calcium excretion in the urine and minimizes the risk of kidney stones.

The results of the Swedish population based prospective study (13.4 years) of 61,000 women aged 40-76, show that women eating more than 75 servings of fruits and vegetables per month (which translates into 2.5 per day) cut their risk of kidney cancer 40%. Among the fruits, bananas were especially protective. Women eating bananas four to six times a week halved their risk of developing the disease compared to those who did not eat this fruit.

### **1.12 Hang-over**

One of the fastest ways to cure hang-over is to make a dairy banana cocktail with milk and honey. Bananas are known to calm an upset stomach and help rehydrate your body. Bananas are rich in the important electrolytes, magnesium

and potassium, which are severely depleted during heavy drinking. Banana with the honey builds up the depleted blood sugar levels, providing some energy.

### 1.13 Energy booster

Bananas contain three natural sugars - sucrose, fructose and glucose combined with fiber. Potassium is also essential for helping muscles to contract properly during exercise and reduces cramping up. A banana gives an instant, sustained and substantial boost of energy. Research has proven that just two bananas provide enough energy for a strenuous 90-minute workout.

### 1.14 Immunity booster

Bananas contain 25 percent of the recommended daily allowance (RDA) for vitamin B6, necessary for producing antibodies and red blood cells as well as aiding in the metabolism of fat. In addition, vitamin B6 serves as an immunity booster. So, this fruit strengthens your armor against infectious diseases. With each average-sized banana, you ingest about 15% of the RDA for vitamin C, one of the strongest antioxidants.

### 1.15 Depression:

According to a recent survey undertaken by MIND amongst people suffering from depression, many felt much better after eating a banana. This is because bananas contain tryptophan, a type of protein that the body converts into serotonin, known to make you relax, improve your mood and generally make you feel happier.

**PMS:** Forget the pills - eat a banana. The vitamin B6 it contains regulates blood glucose levels, which can affect your mood.

**Anemia:** High in iron, bananas can stimulate the production of hemoglobin in the blood and so helps in cases of anemia.

**Brain Power:** 200 students at a Twickenham (Middlesex) school were helped through their exams this year by eating bananas at breakfast, break, and lunch in a bid to boost their brain power. Research has shown that the potassium-

packed fruit can assist learning by making pupils more alert.

**Mosquito bites:** Before reaching for the insect bite cream, try rubbing the affected area with the inside of a banana skin. Many people find it amazingly successful at reducing swelling and irritation.

**Nerves:** Bananas are high in B vitamins that help calm the nervous system.

### 1.16 Industrial Uses

The aforementioned antifungal properties of banana pulp and peel have been successfully used to treat tomato fungus in an agricultural setting. In their home countries, locals use banana leaves for everything from umbrellas to construction materials. Banana and plantain fibers are used throughout the world to weave ropes, mats and other textiles. Tannins present in ripe banana peel act as tanning agents in leather processing.

### 1.17 Cultural and Environmental Care

Bananas prefer rich, fertile soils and a sunny, sheltered location. These plants thrive under uniformly warm or hot conditions. Plant growth slows if temperatures fall below 60 degrees Fahrenheit, and irreversible freeze damage may occur below 32 degrees. High winds can cause leaf shredding and drying and may topple plants. Banana plants require ample water and will suffer if the soil dries out; however, they are not flood tolerant. Each stem only produces flowers and fruits once, so the active stem must be cut away to allow new suckers to emerge.

### 1.18 Common Pests and Diseases

Banana plants, whether grown indoors or on a plantation, may be bothered by a number of pests and pathogens. Nematodes are often a major problem and are best controlled with nematicides, repeated plowing and sun exposure or crop rotation. Additionally, corms should be disinfected in hot water solutions before planting. Other banana pests include the black weevil and various species of thrips and mites. Several fungi, bacteria and viruses can attack banana plants, causing the development of symptoms that range from leaf spots or streaks to rotting fruit or roots.

### 1.19 Food Uses

- All banana plants can produce edible fruit, but the fruit taste, seediness, color, size and other characteristics depend on the species or variety. Bananas can be peeled and eaten raw, baked peeled or unpeeled, made into a puree suitable for infants and used in many other ways. In addition to this plant's highly versatile fruit, peeled stems can be chopped and added to salads or steamed with other vegetables.

### 1.20 Non-Food Uses

- Banana leaves are commonly used as plants, for wrapping food and as an eye-shade or for protection from rain. The banana pseudostem can be utilized for its fiber. The pulp can be used to manufacture rope, paper, place mats and other goods, but the pseudostem is often most valuable economically if it is chopped and left in a field for its organic matter content. All parts of the banana have medicinal value. For example, flowers can be cooked and eaten by diabetics or used for bronchitis, dysentery and ulcers. Plant sap can be taken internally or applied externally to stings and bites. The young leaves can be used as a poultice for skin irritations. The roots, ashes of peels and leaves and seed mucilage also serve medicinal purposes in some regions and cultures.

### 1.21. Benefits

- The ripe fruit is laxative when eaten early in the morning.
- 2. An excellent food for those anemic persons, having general weakness, jaundice, nervous breakdown, obesity, weak digestion and vitamin deficiency.
- 3. Decoction of the unripe fruit is good for diarrhea and scurvy.
- 4. The juice of the plant is taken to cure hemorrhages, cholera, epilepsy and hysteria.
- 5. An extract of the trunk's juice can be used to massage scalp to promote healthy growth of hair and preventing hair loss.

- 6. The pounded inflorescence "puso" is used as poultice for skin ulcers and wounds.
- 7. The flowers are taken as an infusion in normal doses for painful menstruation.
- 8. The fresh flower can be cooked and eaten to treat diabetes. It is also good for the weak heart.
- 9. Eating ripe bananas can prevent constipation, colitis, and heartburn.
- 10. For bladder infection eat 3 to 4 bananas a day.

### 1.22 Hair Care

- There are a number of benefits of bananas. The benefits are not just limited to health but also extend up to beauty treatments as well. It is an effective beauty treatment for skin as well as hair.
- Bananas are great for your hair and scalp. They improve manageability and shine while moisturizing your skin and helping to prevent and control dandruff.
- Banana is rich in: Potassium, Natural oils, Carbohydrates and Vitamins.
- These help in softening the hair and protects the hair's natural elasticity preventing split ends and breakage. Bananas when used for hair has a number of benefits such as it creates manageability, shine, growth and controls dandruff. These are simply the best for hair and the scalp.
- Bananas enhance the strength, endurance and shine of the hair and can be referred to as the bananafood. Most of the banana hair products are available only at expensive spas and salons. However, you can make your own banana hair conditioner or mask. Just like a facial mask enhances the glow of your face immediately, a hair mask also improves your hair dramatically. Bananas are full of vitamins and is a number one ingredient for strengthening and volumizing the hair. It helps in repairing dry and sun-damaged hair.

- The damages of hair that are caused to the hair by exposure to the dirt, pollution and other environmental toxins can be treated with the banana mask. Banana helps in protecting the hair from further damage. The vitamin B helps in the prevention of split ends.
- The type of hair that is suitable for this treatment are dry hair, dyed hair and for hair after perm. It also serves as an excellent treatment for addressing the problem of dandruff and is helpful in retaining moisture on your scalp. However, if you are allergic to any of the ingredients used in the pack then it is best to avoid using it.
- Bananas contain minerals and other nutrients that promote hair recovery and rehabilitation. Banana mask is perfectly suited for dry, dyed hair and for hair after the perm.

### 1.23 Traditional Uses of Banana

Bananas contain three natural sugars - sucrose, fructose and glucose combined with fiber.

A banana gives an instant, sustained and substantial boost of energy.

Research has proven that just two bananas provide enough energy for a strenuous 90-minute workout.

No wonder the banana is the number one fruit with the world's leading athletes.

But energy isn't the only way a banana can help us keep fit.

It can also help overcome or prevent a substantial number of illnesses and conditions, making it a must to add to our daily diet.

- **Depression:** According to a recent survey undertaken by MIND amongst people suffering from depression, many felt much better after eating a banana.
- This is because bananas contain tryptophan, a type of protein that the body converts into serotonin, known to make you relax, improve your mood and generally make you feel happier.
- **PMS:** Forget the pills - eat a banana. The vitamin B6 it contains regulates blood glucose levels, which can affect your mood.
- **Anemia:** High in iron, bananas can stimulate the production of hemoglobin in the blood and so helps in cases of anemia.
- **Blood Pressure:** This unique tropical fruit is extremely high in potassium yet low in salt, making it perfect to beat blood pressure.
- So much so, the US Food and Drug Administration has just allowed the banana industry to make official claims for the fruit's ability to reduce the risk of blood pressure and stroke.
- **Brain Power:** 200 students at a Twickenham (Middlesex) school were helped through their exams this year by eating bananas at breakfast, break, and lunch in a bid to boost their brain power.
- Research has shown that the potassium-packed fruit can assist learning by making pupils more alert.
- **Constipation:** High in fiber, including bananas in the diet can help restore normal bowel action, helping to overcome the problem without resorting to laxatives.
- **Hangovers:** One of the quickest ways of curing a hangover is to make a banana milkshake, sweetened with honey. The banana calms the stomach and, with the help of the honey, builds up depleted blood sugar levels, while the milk soothes and re-hydrates your system.
- **Heartburn:** Bananas have a natural antacid effect in the body, so if you suffer from heartburn, try eating a banana for soothing relief.
- **Morning Sickness:** Snacking on bananas between meals helps to keep blood sugar levels up and avoid morning sickness.
- **Mosquito bites:** Before reaching for the insect bite cream, try rubbing the affected area with the inside of a banana skin.
- Many people find it amazingly successful at reducing swelling and irritation.

- **Nerves:** Bananas are high in B vitamins that help calm the nervous system.
- **Overweight:** Studies at the Institute of Psychology in Austria found pressure at work leads to gorging on comfort food like chocolate and crisps. Looking at 5,000 hospital patients, researchers found the most obese were more likely to be in high-pressure jobs.
- The report concluded that, to avoid panic-induced food cravings, we need to control our blood sugar levels by snacking on high carbohydrate foods every two hours to keep levels steady.
- **Ulcers:** The banana is used as the dietary food against intestinal disorders because of its soft texture and smoothness. It is the only raw fruit that can be eaten without distress in over-chronicler cases.
- It also neutralizes over-acidity and reduces irritation by coating the lining of the stomach.
- **Temperature control:** Many other cultures see bananas as a "cooling " fruit that can lower both the physical and emotional temperature of expectant mothers. In Thailand, for example, pregnant women eat bananas to ensure their baby is born with a cool temperature.
- **Seasonal Affective Disorder (SAD):** Bananas can help SAD sufferers because they contain the natural mood enhancer tryptophan.
- **Smoking & Tobacco Use:** Bananas can also help people trying to give up smoking. The B<sub>6</sub>, B<sub>12</sub> they contain, as well as the potassium and magnesium found in them, help the body recover from the effects of nicotine withdrawal.
- **Stress:** Potassium is a vital mineral, which helps normalize the heartbeat, sends oxygen to the brain and regulates your body's water balance. When we are stressed, our metabolic rate rises, thereby reducing our potassium levels. These can be rebalanced with the help of a high-potassium banana snack.

**Strokes:** According to research in The New

England Journal of Medicine, eating bananas as part of a regular diet can cut the risk of death by strokes by as much as 40%.

- **Warts:** Those keen on natural alternatives swear that if you want to kill off a wart, take a piece of banana skin and place it on the wart, with the yellow side out Carefully hold the skin in place with a plaster or surgical tape!

So, a banana really is a natural remedy for many ills.

## 2. Research Activity on *Musa paradisiaca*

Banana, plantain or *Musa paradisiaca* is a large, herbaceous plant native to India and Southeast Asia. Purple buds appear from the heart of the tip of the stem and develop into tubular, white flowers. Along with dietary fibers, proteins and unsaturated fatty acids, banana flowers are also rich in vitamin E and flavonoids. They are part of many cuisines in the world. They also possess immense medicinal value. However, there is no scientific information to determine the side effects and drug interactions of banana flower. It should, thus, be used only under the supervision of a doctor.

### 2.1 Infections

Ethanol-based extracts of banana flowers inhibit the growth of pathogenic bacteria such as *Bacillus subtilis*, *Bacillus cereus*, and *Escherichia coli* in the laboratory and may help heal wounds and prevent infections, says Mumtaz Jahan, author of a study published in a 2010 issue of the "Journal of Chemical and Pharmaceutical Research." Another study published in the January 2011 edition of the journal "Parasitology Research" states that ethyl acetate extracts of banana flower may inhibit the growth of the malarial parasite *Plasmodium falciparum* *in vitro*. However, these benefits have not been proved in clinical studies.

### 2.2 Diabetes

Oral intake of 0.15 to 0.25 g per Kg of body weight of chloroform extracts of banana flowers



for 30 days may significantly reduce the blood sugar levels and increase the total hemoglobin level in rats, as per the results of a study published in the March 2000 edition of the journal "Phytotherapy Research." However, as with antimicrobial activity, the hypoglycemic effects of banana flowers have not been proved clinically. It is important to talk to a doctor determine the dosage that is right for you.

### 2.3 Antioxidant Activity

Methanol extracts of banana flowers possess antioxidant properties and thereby stabilize the free radicals formed as a result of various metabolic processes in the body. If the free radicals are not neutralized, their unstable electrons react with the DNA and proteins of human cells and alter their properties. This can lead to several chronic conditions, including cancer and heart disease. The authors of a study published in October 2010 issue of the journal "Food Science and Biotechnology" recommend the use of banana flower extracts to make health supplements due to its antioxidant potential.

### 2.4 Menstrual Bleeding

Consuming one cooked banana flower with one cup of curd or yogurt is one of the most efficient way of treating excessive bleeding during menstruation, says the website Himalayan Home Remedies. The cooked banana flower and curd combination increases the level of progesterone in the body and thereby reduces bleeding associated with menorrhagia.

### 2.5 Benefits of Eating Bananas

Bananas are a great food for all round health benefits, for the average person, dieter or even athletes bananas may provide greater benefits than most fruits. The combination of carbohydrates and B vitamins present in a banana helps provide an energy boost which makes them great to eat 30 minutes before a workout, or even at breakfast to help boost energy at the start of every day.

Bananas are not only a good source of B vitamins they also contain vitamin C, A and high levels of potassium. The natural fiber in bananas also contribute to the many health benefits listed below.

### 2.6 Health Benefits of Eating Bananas

- healthy bowels
- cardiovascular health
- protection from strokes
- protection from ulcers
- improve blood pressure
- may boost mood
- boost energy
- help reduce water retention

**2.7 Bananas and losing weight:** Bananas may be one of the best fruits to eat when attempting to lose weight. They are full of nutrients for increased energy and vitality. Bananas are also low in calories and fat, plus they have a high water content and potassium levels. A diet high in potassium foods and lower in sodium-loaded processed foods can help reduce water weight

### 2.8 Banana Nutrition Health Benefits

Banana has a good nutritional value and one serving of banana carries 70 calories. It is also a good source of potassium, fiber and other phytochemicals. One may ask, "Does banana nutrition help weight loss?" or "What nutrition health benefits are there?". In the following section, we are going to review what the banana nutrition health benefits based on scientific studies.

**2.9 Cancer:** Banana nutrition may benefit people at risk of certain cancers. In a study, family history, past history of illness and dietary information of 279 patients suffered from colorectal cancer were studied, a protective effect provided by banana and papaya on colorectal cancer was served. Dietary fiber was found to decrease the colorectal cancer risk.

**2.10 Cardiovascular Protection:** Banana is a good source of potassium. Potassium maintains

normal blood pressure and heart function. One serving of banana contains 467 mg of potassium, this makes people to believe that one banana a day may help to prevent hypertension or even atherosclerosis. A number of studies have demonstrated this banana nutrition benefit. Potassium may further promote bone health. As potassium may prevent the calcium loss in urine, which is caused by high salt diets.

**2.11 Cholesterol:** In a study of male rats on a diet containing lard (50 g/kg) and cholesterol (5 g/kg), freeze-dried banana pulp showed a marked cholesterol-lowering effect when incorporated into a diet at the level of 300 or 500 g/kg, while the hot-air dried banana pulp did not show the effect.

**2.12 Diabetes:** In a study, chemical compositions and glycemic indices of four varieties of banana were determined. Silk, Gros Michel, Pisang Awak and Mysore contained high percentages of starch (14%), sucrose (38%), free glucose (29%) and fructose (58%) as a percentage of the total available carbohydrate content respectively. Total dietary fiber contents of four varieties ranged from 2.7 to 5.3%. Glycemic indices were about 65 and can be categorized as low against white bread as the standard. A single banana of the four varieties elicited a low glycemic load. Researchers in the study suggest that consumption of a banana from any of these varieties may be a snack for healthy or diabetic patients who are under dietary management or pharmacological drugs to regulate blood glucose responses in between meals.

**2.13 Diarrhea:** It has been thought that the banana pectin (a soluble polymer) can help normalize bowel movement and ease constipation. However, intake of banana may benefit people suffered from diarrhea. A study also indicate this banana nutrition benefits. In a study, 31 patients with diarrhea and receiving enteral feedings were randomized to receive either banana flakes or medical treatment for diarrhea. The researchers found that the

banana flake group had less diarrhea clinically, with 57% of the subjects diarrhea free on their last study day as opposed to 24% of the medically treated subjects.

**2.14 Stomach Ulcer:** Banana has been used as an antacid to protect stomach against ulcers and ulcer damage. A mixture of banana and milk may decrease acid secretion. It is believed that banana allows a thicker mucus barrier against stomach acids and contains protease inhibitors. Protease inhibitors help eliminate bacteria causing the stomach ulcers.

### 2.15 Home Remedies with Bananas

Eat banana at night to get relief from constipation. If suffering from diarrhea you can use raw bananas. Boil the raw banana, mash it and add a pinch of salt and butter. Eat it to get relief from diarrhea. This is considered to be one of the most important health benefits of raw bananas. To increase the effectiveness of bananas for diarrhea, you can puree a small amount of ripe banana and add a teaspoon of honey to it. Apply this spread to a slice of well-done toast as the toast will help to absorb excess fluids within the gastrointestinal tract as well as provide bulk to the stools which helps to reduce the severity of diarrhea. In order to treat chronic constipation with bananas, you can slice a banana along with a pear and an apple. Drizzle a spoon of honey over the chopped fruits and if you wish to you can sprinkle a spoon of crushed nuts over this fruit platter. Bananas, pears, and apples are all excellent sources of fiber and this will help to reduce the risk of constipation. Honey is very easy to digest and helps to provide your body with several amino acids and healthy sugars while nuts help to provide your body with several essential fats and fat-soluble vitamins. Have this fruit platter every morning as this will provide your body with the dietary fiber it requires.

- Banana or plantain has been widely used as an anti-wrinkle treatment. Mash 1/4 banana till it becomes a smooth paste. Cover your face with it and leave it for 15-20 minutes before rinsing with warm

water followed by splashes of cold water. Pat it dry. You can also make a moisturizing face pack out of pureed bananas. Puree a small piece of banana and add enough fuller's earth to it to make it a thick paste. Scrub your face well to get rid of the uppermost layer of grime and dead skin cells and then apply this paste to your face. Allow the paste to dry completely before washing it off with cold water. Fuller's earth helps to absorb excess sebum from your skin and so this face pack will leave your skin fresh and smooth. Use this pack at least once a week to help provide your skin with the vitamins it requires to remain healthy and wrinkle free. If you have dry skin, you can add a teaspoon of coconut milk to this paste as coconut milk contains several healthy fatty acids that will help to fortify your skin and prevent wrinkles.

- Mash one ripe banana in one cup of milk and drink it at least 2-3 times a day to treat skin allergies.
- You can use banana peel inside out for treatment of warts. Use the peel inside out and cover the wart by taping it. Once the peel turns black remove and continue this for some weeks to get relief from wart.
- You can use banana peel for treating poison ivy rashes. Rub the peel inside out over the rashes; it soothes the skin to provide a cooling effect. If your skin is very sore, rubbing the peel on your skin may actually increase your discomfort. In such a case, you can use the blunt side of a knife to scrape the insides of the banana peel so that you get a thick grainy paste. Gently apply this paste to the affected portions of skin to help reduce the irritation and inflammation.
- Banana peel can be used if you have bruised yourself. Tape it overnight to see the positive results in the morning. If the bruising is rather severe, you can use this

method twice or thrice a day to help reduce the discoloration and speed up the healing process. Make sure that you rinse and dry the area gently before applying a new piece of banana peel to your skin as this will increase the effectiveness of this treatment. The banana peel health benefits are of immense use in the treatment of warts and one can follow this same method of treatment for bruising on persistent warts.

- To get rid of hangover you can drink banana milk shake mixed with honey. Banana helps in soothing the stomach and body. In very severe cases, where ingesting food causes nausea and vomiting, you can puree a small banana along with an apple and slowly consume one spoon of this mixture at a time. Drink only small amounts of liquids for the first few hours and then have this mixture once more. This will help to stabilize your gastrointestinal system as well as get rid of the waste products in your digestive and urinary system.
- If you are pregnant, and want to avoid leg cramps, eat bananas before going to bed.
- Eat three bananas a day to prevent ulcers. It will help to soothe your stomach and reduce the ulcer pain.
- Consuming a banana after every meal helps in reducing the heartburn. This can also be used to help treat acid reflux and GERD.
- To decrease menstrual bleeding drink the mixture of boiled banana flower with buttermilk.
- Consuming two tablespoons of burnt banana leaves mixed with honey helps relief hiccups.
- Rubbing banana peel inside out is the best remedy for mosquito bites.

- Bananas can help Seasonal Affective Disorder (SAD) sufferers as it contains natural mood enhancers and tryptophan.
- It contains high levels of Vitamin C, A, B<sub>6</sub>, and B<sub>12</sub> which helps people give up smoking. The potassium and magnesium found in bananas helps the body recover from the effects of withdrawal symptoms.
- Eat bananas in every form ripe, raw, cooked, milkshakes and desserts. It helps in treating many ailments related to your body.
- Drinking extract from the stem attached to the banana cluster helps kill tuberculosis bacteria.
- To combat alcohol addiction drink a small glass of the boiled mixture consisting of 3 banana peels, Tabasco, water or milk from 1 coconut, brown sugar or sugar loaf to taste. Let it ferment for 3 days and add snifter of liquor. Do this for nine days.
- When it comes to the health benefits of bananas, it is not only the many uses of the fruit and the peel that are important. Banana flower benefits are invaluable to women with menstrual problems as they help to stabilize blood flow.

### 3. Conclusions

The banana is of great nutritional value. It has a rare combination of energy value, tissue-building elements, protein, vitamins and minerals. It is a good source of calories since it is rich in solids and low in water content as compared to any other fresh fruit. Bananas are a good source of Vitamin C which helps to rebuild the immune system. Bananas are also relatively easy to digest as compared to other foods and so they are invaluable to those with compromised immune systems. Vitamin C also increases the absorption of iron and increases the formation of blood, these two health benefits of bananas make it ideally suited for those with anemia or blood related problems. Bananas can also be included in

a diet for high blood pressure as they contain potassium which helps to reduce and control high blood pressure. Furthermore, bananas do not contain even trace amounts of fat, cholesterol, or sodium which makes it a healthy food option even for restrictive diet plans. There are several types of bananas which are classified according to their taste and the color of their skin. Red bananas have a red peel and the flesh of the fruit is light pink in color. Red bananas are best if they are allowed to ripen fully at room temperature. They can be used to add a dash of color and sweetness to a mixed fruit platter. Apple bananas are smaller than the usual varieties of bananas and are yellow in color. They tend to ripen much faster and so it is important to check on them regularly to ensure that they do not get spoilt. The baby banana is one of the smallest varieties of bananas and they are yellow in color. They are very sweet and are perfect for infants and toddlers. It is best to blend these bananas into a thick puree before feeding it to infants. Baking bananas are very large and are often used in baked dishes as a unique and exotic substitute for potatoes. Ripe banana health benefits are very varied and so the health benefits of ripe bananas should be taken into account when deciding on a diet plan.

### 4. Reference:

1. Jahan M. Concentration influence on antimicrobial activity of banana blossom extract-incorporated chitosan-polyethylene glycol (CS-PEG) blended film. *Journal of Chemical and Pharmaceutical Research* 2010.
2. Bagavan A. *In vitro* antimalarial activity of medicinal plant extracts against Plasmodium falciparum. *Parasitology Research* 2011.
3. Pari L. Antihyperglycaemic activity of *Musa sapientum* flowers: effect on lipid peroxidation in alloxan diabetic rats. *Phytotherapy Research* 2000.
4. Loganayaki N. Antioxidant capacity and phenolic content of different solvent extracts from banana (*Musa paradisiaca*) and mustai (*Rivea hypocrateriformis*). *Food and Science Biotechnology* 2010.
5. Bananas, The world's healthiest foods, Online publication. Sept 20, 2005.

6. Emery EA. Banana flakes control diarrhea in enterally fed patients. *Nutr Clin Pract* 1997; 12(2):72-75.
7. Lohsoonthorn P and Danvivat D Colorectal cancer risk factors: a case-control study in Bangkok. *Asia Pac J Public Health*. 1995; 8(2):118-122.
8. Sun J. Antioxidant and antiproliferative activities of common fruits. *J Agric Food Chem* 2002; 50(25):7449-54.
9. Blades BL. Bananas and plantains as a source of provitamin A. *Asia Pac J Clin Nutr* 2003; 12(Suppl):S36.
10. Horigome T. Hypocholesterolemic effect of banana (*Musa sapientum* L. var. Cavendishii) pulp in the rat fed on a cholesterol-containing diet. *Br J Nutr* 1992; 68(1):231-244.
11. Bhaskar JJ. Banana (*Musa* sp. var. elakki bale) Flower and Pseudostem: Dietary Fiber and Associated Antioxidant Capacity. *J Agric Food Chem* 2011.
12. Hettiaratchi UP. Chemical compositions and glycemic responses to banana varieties. *Int J Food Sci Nutr* 2011; 62(4):307-309.
13. Penagos H. Pesticide patch test series for the assessment of allergic contact dermatitis among banana plantation workers in panama Dermatitis. 2004, 15(3):137-45.
14. Swanson MD. A lectin isolated from bananas is a potent inhibitor of HIV replication. *J Biol Chem* 2010; 285(12):8646-8655.