

## Medicinal uses of Bananas and Plantains in Sri Lanka

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### Abstract

Most people are unaware that Banana or plantain is the world's largest herb with valuable medicinal properties. 'Banana' is a general term embracing a number of species or hybrids in the genus *Musa* of the family Musacea. It is used as a food, symbol of prosperity and in medicine. Bananas are starchier and mostly consumed after cooking, whereas Plantains are sweeter and generally consumed as a dessert. In Sri Lanka, different varieties of plantains such as *Alu Kesel*, *Kithala* and bananas such as *Kolikuttu*, *Suwandel*, *Puvalu*, *Embul*, *Anavalu*, *Nethra Palam*, *Embun*, *Bim Kesel*, *Nadi*, *Pulathisi*, *Kandula*, *Sudu Kochchi*, *Prasad*, *Rata Horadavalu*, *Wal Suwandel*, *Ratel* and *Rathanavalu* are available. Traditional and Ayurvedic physicians use most parts of the herb in medicine. The commonest variety used medicinally is *Musa sapientum*. The aim of this study was to collect and preserve the scattered knowledge on medicinal uses of bananas and plantains in Sri Lanka. Data was gathered from olla manuscripts and transcriptions, Ayurvedic and traditional texts and local knowledge on traditional medicine in Southern, Western, North-western and Sabaragamuwa provinces. Formulae were sorted to show medicinal values of parts such as the root, corm, pseudo-stem, leaves, leaves sheath, pith, inflorescence, fruits and suckers. These are used to treat ailments like diabetes mellitus, diarrhoea, constipation, warts, heart-burn, impaired appetite, menorrhagia, poisoning, dysuria, leucorrhoea and eye diseases. Some recent uses are haemoptysis, cough, renal calculi, urinary obstructions, weight reduction, infant's dietary supplement, dandruff, anaemia, stress, depression, control nicotine withdrawal symptoms and to reduce risk of hypertension and stroke.

**Key Words :** Banana, Plantain, Medicinal uses, Sri Lanka

### Introduction

Banana, the world's largest herb, is known to humans since ancient days. Among Hindus, banana plants, leaves and fruits are placed at the entrance or on the doorstep of houses and Hindu temples, on auspicious occasions such as Deepavali festival day or where marriages are taking place. They consider banana plant as a symbol of prosperity and fertility because of its continuous reproduction. The banana is mentioned for the first time in the written

history in the Buddhist texts in about 500BC. In 327 BC, during his conquer of India, when in Indus Valley, Alexander the Great tasted bananas for the first time and is said to have relished their flavour. According to Chinese historian Yang Fu, China was tending plantations of bananas in 200AD. In 650 AD, Islamic conquerors brought banana to Palestine from Africa along with slave trading and ivory trading. In 1502, Portuguese colonists started the first banana plantations in the Caribbean and Central America<sup>13</sup>.

The word 'banana' has roots in the Arabic word 'banan', which means 'finger'<sup>13</sup>. The domestication of bananas took place in south-eastern Asia. Many species of wild bananas still occur in New Guinea, Malaysia, Indonesia and Philippines.

'Banana' is a general term embracing a number of species or hybrids in the genus *Musa*, of the family Musaceae. Most varieties of edible-fruited bananas, usually seedless, belong to the species *Musa acuminata* or to the hybrid *Musa paradisiaca*. In contrast, *Musa balbisiana* of Southern Asia and the East-Indies bear a seedy fruit but the plant is valued for its disease resistance and therefore, plays an important role as a "parent"; in the breeding of edible bananas. All banana taxonomists seem to agree that no single scientific name can be given to all the edible bananas. *Musa acuminata* could be applied to the pure, seedless diploid (AA) and triploid (AAA) forms of dessert bananas such as 'Pisang Mas' and 'Grand Nain'. Similarly, *Musa balbisiana* could be applied to the pure seedless diploid (BB) and triploid (BBB) forms of cooking bananas such as 'Abuhon' and 'Saba' respectively. However, the many hybrids cannot carry a specific name due to their mixed composition and differences in ploidy. To avoid this confusion, therefore, it is internationally accepted that all banana cultivars should be referred to by the genus *Musa* followed by a code denoting the genome group and ploidy level, followed by the subgroup name (if any) then followed by the popular name of the cultivar such as *Musa* AAA, *Musa* AAB, *Musa* BBB, *Musa* AB.

Bananas are also classified either as dessert bananas (meaning they are eaten when fully ripe) or as green cooking bananas / plantains<sup>13</sup>. Plantains are generally much starchier and can be eaten either ripe or unripe after cooking.

In Sri Lanka, different varieties of plantains and bananas are available, plantains like *Alu Kesel*, *Kithala* and bananas like *Kolikuttu*, *Suwandel*, *Puvalu*, *Embul*, *Anavalu*, *Nethra Palam*, *Embun*, *Bim Kesel*, *Nadi*, *Pulathisi*, *Kandula*, *Sudu Kochchi*, *Prasad*, *Rata Horadavalu*, *Wal Suwadel*, *Ratel* and *Rathanavalu*.

## Objectives

It is little known that the plantain and banana plants have a large number of medicinal properties. Almost all parts of this herb are used as ingredient

in preparation of Ayurvedic and especially Sri Lankan traditional herbal medicines, for treatment of many ailments. Quite a few of these could be used as household or handy medicines and are easy to prepare.

Apart from the commonly known uses of banana and plantains as a dessert, a tasty fruit, a simple 'health-food', the public knowledge and awareness of its medicinal properties should be greatly propagated and encouraged among the public, all over the world. Keeping these objectives in view, a fair amount of scattered knowledge on medicinal properties and uses of this herb was collected and sorted out.

### Material and Methods

Data was gathered since 2005 from olla manuscripts, Ayurvedic text books, transcriptions of manuscripts which were available at the Institute of Indigenous medicine, University of Colombo and local knowledge on traditional medicine in Southern province, Western province, North-western province and Sabaragamuwa province of Sri Lanka. The local knowledge from these said provinces were collected by the 5<sup>th</sup> year B.A.M.S. students of the Institute of Indigenous medicine who are hailing from these provinces. The students were instructed to collect the data on medicinal uses of banana and plantains in their locality by interviewing relatives, friends, elder citizens and traditional physicians. After gathering sufficient information, data and formulae were sorted so as to show the medicinal values attributed to various parts of the banana and plantain herb.

### Observations and Results

The accumulated information indicates that almost all parts of the plant are used in treatment of several diverse diseases, as shown here. From the data gathered, it was observed that roots, corm, juice secreted from pseudo stem of the Banana when freshly-cut, pith, sheaths of leaves, very young leaves inside the pseudo stem, leaves, inflorescence, flowers, stalk of the bunch of the Banana, fingers, seeds, suckers (especially rhizome and inflorescence) are used in treatment of different diseases. Out of different species of plantains, *Musa sapientum* (Alu kehel - Ash plantain) is the type that is most commonly used in medicinal purposes. It appears that banana is effective in treatment of diabetes mellitus, menorrhagia, gastritis and in poisoning.

#### Root of the Banana or Plantain (Kesel Mul)

Local oedema caused by Poison

Roots of the banana or plantain are cut into small pieces, pounded and juice is extracted by squeezing. This juice is applied externally to reduce oedema caused by poison (Jimonis, 1947)

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#### **Vomiting**

Roots of the *Musa sapientum* are cut into small pieces, pounded and juice is extracted by squeezing. To 60 ml of this juice, 10 ml of breast milk, 10 ml of Bee's honey and 5 gm of powdered fruit of *Terminalia chebula* is added. This is given to patients suffering from vomiting (Anonymous, 1966)

#### **Hemoptysis**

The root is astringent and can be used to stop coughing up of blood (Conrad Richter, 2002).

### **Corm of the Banana or Plantain (Kesel Ala)**

#### **Local oedema caused by Poison**

Corm of the banana or plantain is cut into small pieces, pounded and juice is extracted by squeezing. This juice is applied externally to reduce oedema caused by poison (Jimonis, 1947 )

#### **Eye Diseases**

Juice is extracted from corm of banana or plantain and mixed with equal quantity of Bee's honey or refined sugar. This mixture is filtered & applied in the eyes to clean eyes (Jimonis, 1947 )

#### **Diabetes mellitus**

15 gm each of corm of *M. sapientum*, stem of *Santalum album*, root bark of *Salacia reticulate* and dried fruits of *Phyllanthus emblica* are taken, 1920 ml of water is added and boiled down to 240 ml, and 120 ml is given twice a day to patients suffering from diabetes mellitus.

#### **Excessive thirst in Diabetes mellitus**

10 gm each of corm of *M. sapientum*, fruits of *P. emblica*, stem of *S. album*, root bark of *S. reticulate*, roots of *Sida acuta* and entire plant of *Tribulus terrestris* are boiled in 1920 ml water and reduced to 240 ml, and given 120 ml twice a day to treat patients suffering from excessive thirst from diabetes mellitus (Jayasekara, 1948 )

### **Menorrhagia**

15 gm each of corm of *M. sapientum*, stem barks of *Syzygium cumini* and *Limonia acidissima* and inflorescence of *Cocos nucifera* are taken, 1920 ml of water is added and boiled down to 240 ml, and 120 ml is given twice a day to patients suffering from menorrhagia

### **Menorrhagia**

15 gm each of corm of *M. sapientum*, stem barks of *S. cumini* and *Ficus racemosa*, and inflorescence of *C. nucifera* are taken, 1920 ml of water is added and boiled down to 240 ml, and given twice a day to patients suffering from menorrhagia (Jayasekara, 1948).

### **Dysuria**

Juice extracted from corm of *M. sapientum*, king coconut water, whey water and cow's milk are mixed together and given to treat dysuria (Anonymous, 2002)

### **Burning sensation in abdomen**

20 gm each of corm of *M. sapientum*, seeds of *Coriandrum sativum* and entire plant of *Phyllanthus amarus* are taken, 1920 ml of water is added and boiled down to 240 ml and 120 ml is given twice a day to patients suffering from burning sensation in abdomen (Jayasekara, 1948).

### **Haemoptysis**

Corm of *M. sapientum* are cut into small pieces and pounded. The juice is extracted by squeezing and applied on head to treat haemoptysis (Kumaranayaka and Kumaranayaka, 1986).

### **Poisoning caused by Cannabis sativa**

Corm of *M. sapientum* are cut into small pieces and pounded. The juice is extracted and given to drink to treat poisoning caused by *Cannabis sativa* (Jayasekara, 1948).

### **Hiccough due to Alcohol**

Corm of *M. sapientum* are cut in to small pieces, pounded and juice is extracted by squeezing and given to treat hiccough due to excessive consumption of alcohol (Jayasekara, 1948).

### **Juice secreted from Pseudo stem of the Banana or Plantain (KeselKade Wathura)**

#### **Erysipelas**

Pseudo stem, close to root is cut with a knife and juice secreting from there is

collected into a vessel which is kept in a pit dug in the ground. This juice is poured on erysipelas and it helps to reduce inflammation (Jimonis, 1947).

### **Cataract**

Pseudo stem is cut with a knife and juice secreted from there is collected into a vessel and dried till it turns to a thick latex. This latex is mixed with *Camphor collyrium* and the mixture is applied around the eyes to treat Cataract. It also helps to improve the strength of the vision (Jimonis, 1947).

### **Leaf sheaths of the Banana or Plantain (Kesel Pathuru)**

#### **Psoriasis**

Leaf sheaths are cut into small pieces and pounded well. Juice is extracted by squeezing. Creepers of *Cardiospermum halicacabum* is ground with this juice till it turned into fine paste and the paste is applied on psoriasis (Jimonis, 1947).

#### **Psoriasis**

Juice extracted from leaves sheaths is mixed with thick juice prepared by dissolving ripened fruits of *Tamarindus indica* in water and powder of ash prepared from Conch shells. The mixture is applied (Jimonis, 1947).

#### **Wounds**

Leaves and bark of *Ficus benghalensis*, rhizome of *Curcuma domestica* are ground together and wrapped with leaves' sheaths of *M. sapientum*. This is cooked by keeping among heated charcoal in a hearth and applies for wounds (Gunasena, 1990).

### **Heavy intoxication due to Alcohol**

Juice is extracted from leaves sheaths; especially from the variety of Embul and given to patients who are highly intoxicated after heavy intake of Alcohol (Jayasekara, 1948).

### **Pith or Central Meristem of the Banana or Plantain (Kesel Bada)**

#### **Burns**

Pith is cut into small pieces, wrapped with a piece of leaf and cooked by keeping among heated charcoal in a hearth and ground into fine paste. This paste is mixed with Sesame oil and applied for burns (Gunasena, 1990).

### **Burning sensation in abdomen**

Pith and corm of *M. sapientum* are cut into small pieces and roasted on a pan made out of iron till it turns to ash. 1.25 gm of ash is given twice a day to treat the patients suffering from burning sensation in abdomen (Jayasekara, 1948).

### **Eye Diseases**

White pith is obtained by incising the pseudo stem and juice is extracted by squeezing from the pounded pith. Snuffing (Nasal douche) is performed with this juice to treat eye diseases (Jimonis, 1947).

### **Diabetes mellitus/ Renal Calculi/ Weight reduction**

This same juice is beneficial for diabetes, dissolving the calculi in the Kidneys and urinary bladder and for reducing the weight (one glass of the juice should be taken early morning before break-fast for six months continuously) (Haruth Communications, 2007).

### **Very young leaves inside the pseudo stem Banana or Plantain (Kesel Goba)**

#### **Dysentery**

Very young leaves which are inside the pseudo stem are taken, cut into small pieces, boiled with vinegar and juice is extracted by squeezing. Extracted juice is mixed with cow's milk. This mixture is given to patient suffering from dysentery (Jimonis, 1947).

### **Leaves of the Banana or Plantain (Kesel Kola)**

#### **Dermatitis (Pityriasis versicolor)**

Leaves are burned and ash is dissolved in water. Sulphur and Yellow Opiment are purified according to purification procedures described in Ayurveda. Purified Sulphur and purified Yellow Opiment are ground with aforesaid solution till it turned into a paste and it is applied on Pityriasis versicolor (Jimonis, 1947).

#### **Cataract**

Bee's honey is put on to a piece of leaf and kept for two hours and applied around the eye with the finger of the physician to treat cataract (Jimonis, 1947).

#### **Cough**

A Syrup made of juice extracted from leaves and boiled with sugar can be

given for coughs and other respiratory problems such as bronchitis (Conrad Richter, 2002).

### **Burns**

Inflorescence of *M. sapientum* is pounded and juice is extracted and mixed with whey -water made from cows' milk and can be applied on burns (Gunaseena, 1990).

### **Diarrhoea**

Inflorescence is cooked by keeping under the hot ash in the hearth. Then juice is extracted by squeezing or grind into a fine paste. This extract or paste is mixed with honey and given to treat diarrhoea (Jimonis, 1947).

### **Diarrhoea**

12 gm each of Inflorescence of *M. sapientum* and *C. nucifera*, Stem barks of *F. racemosa* and *F. benghalensis*, tubers of *Cyperus rotundus* are added to 1920 ml of water and boiled down to 240 ml. 120 ml of this decoction given twice a day to treat (Anonymous, 2002).

### **Diabetes mellitus**

Inflorescence of *M. balbisiana* are dried and powdered. 15 gm of powder is given to control diabetes mellitus.

### **Leucorrhoea**

Juice extracted from inflorescence of *M. sapientum* by squeezing is mixed with Bees' honey and given twice a day to treat leucorrhoea (Jayasekara, 1948).

### **Poisoning caused by *Strychnos nux-vomica***

Juice extracted from inflorescence of *M. sapientum* by squeezing and given to treat poisoning occurred by *Strychnos nux-vomica* (Kariyawasam, 1988).

### **Removal of Urinary obstruction**

Inflorescence is sliced in to very small pieces. Dried chilly, curry powder and coconut oil is added and cooked well. The curry is beneficial for the purification of urinary bladder and the removal of the urinary blocks (Haruth Communications, 2007).

### **Flowers of the Banana or Plantain (Kesel Mal)**

#### **Diabetes mellitus**

Flowers of the *M. balbisiana* are burned and the resultant ash is given with



Bee's honey for patients suffering from Diabetes mellitus (Anonymous, 2002).

### **Fruit pulp of unripe Banana or Plantain (Amu Keselgedi Madaya)**

#### **Gastritis**

Mature but unripe fingers of the *M. sapientum* are cooked and given to patients having gastritis.

#### **Supplementary diet for 4 to 10 months old babies**

Fully matured banana is peeled, cut into thin very fine pieces, dried in the sun and then ground into a fine powder. This powder is thickened by boiling with milk and one pinch of sugar, and given to the babies. This is a wonderful nutritious diet, easy to digest, and prevents diarrhoea and worm trouble in babies (Haruth Communications, 2007).

### **Fruits unripe Banana or Plantain (Amu Keselgedi)**

#### **Reduce the risk of Hypertension and Stroke**

Intake of Bananas helps to reduce risk of Hypertension and Stroke as they are rich in potassium and low in salt (Castello Cities Internet Network, Inc, 2008).

#### **Morning sickness**

Having a few bananas between meals helps to keep blood sugar levels up and avoid morning sickness (Castello Cities Internet Network, Inc, 2008).

#### **Smoking**

Bananas contain the high levels of Vitamin C, A1, B6, B12 as well as the potassium and magnesium. So intake of Banana and Plantains helps the body recover from the effects of nicotine withdrawal (Castello Cities Internet Network, Inc, 2008).

#### **Depression**

People suffering from depression feel better after eating a banana. Bananas contain tryptophan, a type of protein which converts into serotonin, in the body. Serotonin makes the people relax and makes them feel happier (Castello Cities Internet Network, Inc, 2008).

#### **Stress**

When a person is stressed, the metabolic rate increases, thereby reduce the

potassium levels. Bananas and plantains contain Potassium, which helps to normalise the heartbeat, increase the supply of oxygen to the brain and regulates the body water-balance. Stress can be reduced by re-balancing the potassium level with bananas (Castello Cities Internet Network, Inc, 2008).

### **Skin of fingers of Banana or Plantain (Keselgediye Patta)**

#### **Warts**

A piece of skin of fingers of Banana is placed on warts with the yellow side out, to remove warts.

#### **Mosquito bites**

A piece of skin of fingers of Banana is rubbed on mosquito/ insect bites to reduce the irritation.

#### **Burning sensation in the feet**

A piece of skin of fingers of Banana, especially 'Anamalu', is rubbed on feet to reduce burning sensation.

#### **Wounds**

In emergencies, wounds are wrapped with a piece of skin of fingers of Banana because the inside of the skin has antiseptic properties (Paraquat Information Center, 2008).

### **Stalk of the Bunch of the Banana or Plantain (Keselkan Neti)**

#### **Nasal Polyp**

Equal quantities of dried stalk of the bunch of the Banana, roots of *Plumbago indica* and Copper sulphate are taken and burned together till it turns to ash. This ash is ground with lime juice. This mixture is applied on a piece of cloth and kept on nasal polyps (Kumaranayaka and kumaranayaka, 1986).

### **Seeds of Banana or Plantain (Kesel Eta)**

#### **Impaired appetite**

Kernel of Seeds of *M. balbisiana* are mixed with ghee and Bee's honey and taken twice a day to increase appetite (Jimonis, 1947).

### **Sucker of the Banana or Plantain (Kesel Moteyya)**

#### **Anorexia/ Diarrhoea/ Worm Infestation**

Suckers are cut into small pieces, pounded and juice is extracted by squeezing.

Extracted juice is given with Bee's honey to cure anorexia, diarrhoea and worm infestations (Jimonis, 1947).

### Hiccough due to Alcoholism

Suckers, especially variety Embul, are cut into small pieces, pounded and juice is extracted by squeezing and given to treat hiccough due to Alcoholism (Jayasekara, 1948).

### Sword Sucker of the Banana or Plantain (Kesel Kurulla)

#### Impaired appetite

Sword Sucker is boiled in water. Afore said medicinal water and whey-water is mixed in equal quantities. To this mixture, a paste prepared with rhizome of *Zingiber officinale*, seeds of *Piper nigrum* and *Cuminum cyminum* and latex of *Ferula asafoetida* is added in sufficient quantity and given to patients to increase appetite (Jimonis, 1947).

#### Discussion

In Sri Lankan traditional medicine and Ayurvedic practice, different parts of the herb banana are used as a single medicine or in combination with other medicines (herbs) to treat different diseases. Fresh corm and inflorescence of *Musa sapientum* are the most widely used parts of banana plant, in medicine.

#### Conclusion

Sri Lankans use bananas and plantains to treat and manage a diverse variety of ailments such as diabetes mellitus, leucorrhoea, gastritis, menorrhagia, dysuria, burns, constipation, poisoning and skin diseases. It is concluded that banana is an important plant which supplies many vital nutrients to humans in addition to having excellent medicinal properties.

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