

Bananas of the Mysore State

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Status of the crop in the State. Banana is the name used in foreign countries for the Indian plantain (whether used as fruit or vegetable). The crop is not important commercially in the Mysore State even though there is considerable demand for the fruits, especially in the two principal cities of the State, Bangalore and Mysore. The demand for bananas is mostly met from supplies received from Salem and Trichinopoly Districts of the Madras Province. The main varieties imported into these cities are *Poovan*, *Rasthali*, *Vamanakeli* and *Monthan*. *Poovan*, *Vamanakeli* and *Monthan* are obtained mostly from Mohanur on the Cauvery bank in the Salem District and from Trichinopoly in the Trichinopoly District. *Rasthali* is got mostly from Thottiyam and Karur in the Trichinopoly District. The price of both fruit and vegetable varieties is comparatively high especially in the two cities, where the fruits of *Chakkarakeli*, *Rasthali*, *Vamanakeli*, *Chenkadali* and *Monthan* are in great demand.

Nature and extent of cultivation. The bananas in the Mysore State are mainly grown as an interplanted crop in areca and coconut topes. They afford shade to young coconut and areca plants in newly planted areas. These are also grown to some extent as a pure crop as at Hiriyyur, Nanjangud and on the outskirts of coffee plantations in the *Malnad* Districts. The *ryots* appear to be ignorant of the proper methods of cultivation of this very important crop. It requires a good deal of water for its successful growth but at the same time it cannot stand water stagnation to any extent. The limiting factor for the extension of the cultivation of this crop where the rainfall is not very high is the availability of irrigation water practically throughout the year. It is, therefore, necessary to provide wells in addition to other irrigation sources, unless the latter is capable of supplying water for at least 10 months in the year.* "A note on the cultivation of bananas in the Madras Presidency" by the author gives the details of banana culture. There is considerable scope for the extension of the cultivation of bananas in Mysore State especially in the vicinities of towns and cities.

Varieties. The main varieties grown in these plantations are, *Kali*, *Boothi bale* and *Poovan*. *Rasthali* and *Poovan* are grown at Nanjangud and Hiriyyur respectively. Apart from these four main varieties the following are found as stray plants in some of the banana gardens of the State:—*Ney poovan*, *Monthan*, *Chenkadali*, *Chakkarakeli*, *Vamanakeli*, *Sambrani monthan*, *Ancikomban*, *Vannon* and *Ela vazhai*. But *Sirumaloi* and *Virupakshi*, the two very important commercial varieties of bananas that are intercropped with coffee and oranges in the Sirumalais and Lower Pulneys respectively of the Madura District in the Madras Province are absent here.

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There is considerable scope for the introduction of these varieties into the *Malnad* where they would serve also as shade to coffee. The *Sirumalai* grown in the Sirumalai Hills between 2,500 and 3,000 feet elevation is in great demand in the Madras City. The fruits have very good taste and flavour. The *Virupakshi* (malapazham) is largely grown at Pannakkadu, Virupakshi and other ranges in the Lower Pulneys between 4,000 and 4,500 feet elevation. There is great demand for this fruit throughout Southern India. Apart from the good taste and rich flavour, these fruits by virtue of the dry nature of their pulp have very good keeping quality and can be kept up to three weeks after they have ripened. These fruits are largely used in the preparation of *panchamritham* in South Indian Hindu temples especially in the one at Palni. Morphologically these two varieties are one and the same and are only ecological types of Vannan, a variety commonly grown on the West Coast.

Cultivation of bananas as a pure crop is practised as already mentioned in two places in the State, viz., at Hiriyyur in the Vanivilasa Sagar area in the Chitaldrug District and at Nanjangud.

Hiriyyur. The ryots from Erode and other places in the Coimbatore District have emigrated to this place and are cultivating about 1,000 acres of bananas for the past 20 years according to the system of cultivation in vogue in their original homes. *Poovan* and *Monthan* are the main varieties under cultivation. The crop is kept from three to five years in the same area followed by rice crops for two to three years. The produce is exported to Hubli, Dharwar and other places in the Bombay Province. *Chakkarakeli*, *Vamanakeli*, *Rasthali*, *Chenkadali*, etc., can also be easily grown here.

Nanjangud. There are over 1,200 acres under bananas in this tract. The main variety is *Rasthali* locally known as *Rasa bale*. It is cultivated in rice lands in rotation with rice crop - three years banana and three years rice. Generally, elevated places are preferred for its cultivation. During the period of these three years only two crops are harvested. After the harvest of the first crop, all suckers, in most cases three to four, are allowed to grow up in each stool. No manuring is given. Drainage is often inadequate. The cultivation practised in this place is primitive; but the primitiveness of the method of cultivation adopted here is often a blessing in disguise, since the bunches that are produced in this manner will be free from "lumps" that are generally found in the pulp of *Rasthali* fruits grown under heavy manuring. Bananas will have the best taste and flavour when grown under natural conditions without resort to very heavy manuring, constant watering, desuckering, etc., but the size of the bunch and fruit will be small. The size of the majority of the bunches and individual fruits of Nanjangud *Rasa bale* brought for sale in the markets of the two cities is very small. This defect can easily be remedied without losing any of the good qualities of the fruit by adopting a judicious system of cultivation and manuring. The bunches and fruits of *Rasthali* grown in South Kanara and Malabar Districts are of medium size but without any lump in the pulp and

are floury in consistency when ripe. Under the present system of banana cultivation practised at Nanjangud the plants tend to become susceptible to the attack of diseases. The crop is attacked with a disease locally known as "Tharagumari". Unless a proper system of banana cultivation is adopted, the banana cultivation of this locality will cease to exist at no distant date.

Below is given a list of the varieties grown in the State with their local names (both in and outside the Mysore State), their diagnostic characters and the economics of their culture.

1. *Kali* (*Musa paradisiaca* Linn., var. *kali*). *Pacha bale* at Bangalore market, Kyatsandra and Nagavalli; *Cheena bale* at Bangalore nursery; *Kai bale* at Nagavalli; *Kabbale* at Chikkanayakkanahalli; *Elakki bale* at Kowsika, Ambuga and Gundlupet. Outside the Mysore State this variety is known as *Kali* at Perintalmanna; *Padaththi* at Alwaye; *Mannan* at Manantoddy; *Padalu* at Kumaranallur near Pattambi; *Pakki*, *Padu vazhai*, *Kai vazhi*, *Vella padan* at Gudalur; *Vellai chingan* at Sankarankoil; *Pacha nadan* at Thisayanvilai; *Kuppa mannan* at Nileswar; *Chingan* at Valltoor; *Nattu mannan* at Tellicherry; *Vannan* at Kalpatta; *Mara bale* at Virarajendrapet; *Gali bale* at Mangalore; *Kattu bale*, *Janaka bale* at Udipi.

This variety can be considered as the true indigenous banana of the Madras Province. It is found almost wild in many parts of Coorg, South Kanara and Malabar Districts. It is a hardy variety. The pseudostems are about 16 feet high with a girth of about 34 inches at the base. The leaves are about 10 feet long and about 28 inches broad. The petiole is thick and about two feet long. The margins of the petiole are about three-quarter inch apart. The bunches are fairly heavy. Fruits are unequally five-sided with a distinct apex. The colour of the ripe fruit is yellow when grown in the plains and greenish yellow when grown in the hills. The fruit is of medium quality. Green fruits are used as vegetable.

2. *Boothi bale* (*Musa paradisiaca* Linn., var. *boothi bale*). *Boothi bale* is the local name for this variety throughout the State. Outside the State this goes by the following local names:--*Bonnya bale* at Moodbidri; *Bonha bale* and *Gobra bale* at Mangalore; *Onckkan mannan* at Nileswar; *Venneettan* at Kurumathur near Taliparamba and *Boothi bale* at Puttur (South Kanara).

This variety is almost confined to South Kanara, Coorg and Mysore State. It is also a hardy variety. The pseudostems are 15—22 feet high and often taller than *Kali* with a girth of about 30 inches at the base. The leaves are about eight feet long and about 33 inches broad. The petiole is stout and 18—21 inches long. The margins of the petiole are about quarter inch apart. The bunches are of medium size. Fruits are rather short and unequally five-sided with a short but distinct apex. The colour of the ripe fruits is dull yellow due to the glaucous nature of the unripe

fruits. The ripe fruits are of poor quality. Unripe mature fruits are used in making a preparation called "banana nuts" (peeled bananas are split longitudinally into two and each portion cut into pieces of about an inch in length and fried in coconut oil. These fried pieces are thereafter coated with raw sugar by a special process). The ripe fruits are said to relieve bleeding piles.

3. *Poovan* (*Musa paradisiaca* Linn., var. *poovan*). *Bengali* at Bangalore market; *Chaena bale* in Bangalore; *Kori gaddi* at Channapatna; *Kari rasa bale* at Kyatsandra; *Kari bale* at Palhalli; *Othu rasa bale* at Nagavalli; *Kari puttu bale* at Jayachamarajapura; *Mysore bale* at Kowsika, Ambuga and Jodi Kyathanahalli; *Vilayithi bale* at Kowsika; *Huli bale*; *Nanjangud bale* at Ambuga. Outside the Mysore State this variety has the following local names:— *Mysore bale* at Moodbidri; *Mysore* at Mangalore; *Mysore poovan* at Nilambur and Nileshwar; *Mysore vazhai* at Calicut; *Paleyangodan* at Trichur Farm and Alwaye; *Mysori* at Kumaranallur; *Vasana chettu* at Gopalour; *Ginni* at Piridi; *Karpura chakkarakeli* at Rajahmundry; *Poovan* at Erode and Trichinopoly; *Adukkumarai* at Pennakkadu; *Pulippu kai*; *Korangu vazhai* at Pollachi; *Chakkarakeli* at Velpur near Tanuku; *Karpura* at Peravalli near Tanuku; *Rasthali* at Challapalle; *Soan mowze* at Kurnool; *Sugantham* at Kalava near Kurnool; *Yerra sugantham* at Giddalore; *Sugandhi* at Rampuram near Tungabhedra; *Rosa bale*, *Salem* at Hospet; *Bengala* at Allipuram near Nellore; *Yerra aratti* at Godugumuru near Chittoor; *Poo vazhai* at Modikuppam near Chittoor; *Navarai* at Madurantakam; *Raja vazhai* at Gudiyattam; *Dora vazhai* at Kallar near Mettupalayam; *Kallaththu vazhai* at Mettupalayam; *Erode poovan* at Coimbatore; *Kadali* at Thangachimadam; *Pulichan kadali* at Thisayanvilai; *Cheru kai* at Alwaye; *Mysore kadali* at Ponnampet and *Nallanti*, *Karuppu vazhai* at Kelamangalam near Hosur.

Most of the local names of this variety are the names of places where from the variety has been brought to a new place. This indicates that it might be an introduced variety. It is not more than 50—60 years since this variety is being grown in the Madras Province. It is identical with the "Fill basket" of the foreign countries. This is the most economic of the various varieties of bananas under cultivation in this Province. It is largely used as fruit and to a small extent as vegetable also. It yields heavily and is excellent for "fig" making. People of the Telugu area consider this variety superior even to *Rasthali*. Being the most economic variety it is very largely cultivated. The pseudostems are 10—17 feet high and 24—36 inches in girth at the base. The leaves are about seven feet long and about 30 inches broad. The petiole is stout and about 21 inches long. The margins of the petiole are about half an inch apart. The bunches are closely packed and very heavy. Fruits are terete with a distinct apex. The colour of the ripe fruit is yellow. The fruit is of good quality. This variety manifests differently when grown in different soils and climatic conditions. The leaves are largely used as plate leaves for serving food.

4. *Rasthali* (*Musa paradisiaca* Linn., var. *rasthali*). *Nanjangud rasa bale* in Bangalore; *Rasa bale* at Channapatna, Nagavalli, Palhalli, Nanjangud, etc.; *Raja bale* at Muniswamy's Nursery, Bangalore. Outside this State it is known as *Poo bale*, *Rasa bale*, *Hoo bale* at Moodbidri; *Aana poovan* at Kurumathur; *Poovan* at Calicut; *Ari poovan* at Nilambur; *Nattu poovan* at Ponnani; *Desi Pollu* at Gopalpur (Ganjam); *Mokiri* at Piridi near Bobbili; *Amritopani* at Palteru near Bobbili; *Rasthali* at Erode; *Thella mokiri* at Panchadharla near Yellamanchili; *Sugandhi* at Tirupathi and *Karkandu vazhai* at Sendamaram.

This is the variety occupying the second largest area under any one variety in the Madras Province. It is largely used as fruit and occasionally in the preparation of "banana nuts". The pulp of the ripe fruit is floury and has excellent taste and flavour. It is one of the choicest varieties of this Province. The plants have a strong root system; consequently, they are not easily blown down by wind. The pseudostems are about 10 feet high and about 33 inches in girth at the base. The leaves are about seven feet long and about 28 inches broad. The right side lamina base is one and a half to two inches shorter than the left. The petiole is stout and about 19 inches long. The margins of the petiole are about three-quarter inch apart. The bunches are loosely packed and medium heavy. Fruits are terete and taper to a distinct apex. The rind of the well ripe fruit is golden yellow sometimes with red tiny spots on it. When heavily manured a sort of lumps appear in the pulp of the ripe fruits. When grown under normal fertility, the fruits develop the best taste and flavour but the size of the fruit will naturally be small.

5. *Ney poovan* (*Musa paradisiaca* Linn., var. *ney poovan*). *Elakki bale*, *Sugontham* in Bangalore; *Puttu bale* at Kyatsandra; *Hoo bale* at Ambuga. Outside the Mysore State this variety is known as *Deva bale* at Moodbidri; *Kadali* at Mangalore; *Nhani poovan* at Nileshwar; *Ney poovan* at Kurumathur; *Rosa kadali* or *Ney kadali* at Tellicherry; *Adakka poovan* at Kuttuparamba; *Thekkan kadali* at Manantoddy; *Kunnan poovan* at Kalpatta; *Tirunelli poovan* at Calicut; *Nhali poovan* or *Ari poovan* at Ponnani; *Kadali poovan*, *Poovan kadali*, *Tirunelli poovan* and *Ney kunnan* at Kumaranallur; *Vadakkan kadali* at Trichur Farm; *Raja bale* at Rampuram; *Karpuropu aratti* at Tambalapalle; *Rosadala* at Madanapalle; *Mysore rasthali* or *Velchi* at Kallar Government Gardens; *Poo bale* at Virajendrapet; *Puttu bale* at Udipi.

Next to the four main varieties of the State, this variety is largely grown sometimes as a pure crop as in Kodagalli village near Bangalore City. It is invariably grown in the back yards of houses in South Kanara and North Malabar Districts. The pseudostems are 10-13 feet high with a girth of about 28 inches at the base. The leaves are about eight feet long and about 26 inches wide. Petiole is slender and about 20 inches long. The margins of the petiole are about a third of an inch apart. The bunches are fairly heavy. Fruits are closely set, terete and taper to a distinct

apex. The rind of the fruit is very thin and the colour of the pulp is pure white. Ripe fruits are very sweet. This variety is considered as one of the best South Indian varieties. Unless the irrigations are cut off when the bunches are nearly three-fourth full the fruits often crack. It is not one of the commercial varieties as it is not grown largely in any place.

6. *Monthan* (*Musa paradisiaca* Linn., var. *monthan*). *Akku bale* at Bangalore nursery; *Madhuranga bale* in Bangalore and at Nagavalli, Nanjangud, etc.; *Konga bale* at Channapatna; *Kalyana bale* at Jayachamarajapura, Kowsika, etc., and *Mara bale* at Ambuga. Outside the State it is known as *Silanti*, *Aunda bale* at Moodbidri; *Kilondi*, *Manga bale*, *Banga bale* at Udipi; *Sodari* at Kurumathur; *Thezhuthani* at Tellicherry; *Thenali* at Calicut; *Ponthan* at Kongad; *Ponnan* at Nilambur; *Chetti kaya* at Ponnani; *Naathongi monthan* at Erode; *Monthan* at Karur; *Erode monthan* at Kulitalai; *Kondai monthan*, *Yendra monthan* at Trichinopoly; *Trichinopoly monthan* at Negapatam; *Yenthala monthan* at Tanjore; *Erode ka* at Polambakkam; *Erode bonthon* at Pudupattam; *Erode chedi* at Seevur near Gudiyattam; *Nadgangi* at Kallakurichi; *Bontha aratti* at Guntur; *Kalyana bale* at Kampli; *Basti* at Buchireddipalayam near Nellore; *Chinna bontha* at Atmakur near Nellore; *Nir bontha*, *Nielh bontha* at Conjeeveram; *Thoppul vazhai* at Thangachimadam; *Nattu monthan*, *Maanaattu monthan* at Tenkasi and *Kari bale* at Mercara.

A few plants of this variety are grown in all banana gardens. The fruits are mainly used as vegetable but occasionally used as ripe fruits especially in the Erode Taluq of the Coimbatore District. The fruits are very large and individual fruit may weigh up to a pound. The pseudostems are 10—14 feet high and about 30 inches in girth at the base. The leaves are about seven feet long and about 27 inches wide. The petiole is about 23 inches long and of medium thickness. The margins of the petiole are about quarter inch apart. The bunches are loosely packed and heavy. The fruits are nearly terete and taper to a very stout and distinct apex. The rind of the ripe fruit is yellow. The leaves are considered very good as plate leaves.

7. *Chenkadali* (*Musa paradisiaca* Linn., var. *chenkadali*). *Chandra bale* in Bangalore, Ambuga, etc.; *Sakalathi bale* at Palhalli. Outside the State it has the following names:— *Chandra bale* at Kasaragode; *Chora kadali* at Tellicherry; *Chenkadali* at Calicut; *Chora poovan* at Alwaye; *Yerra aratti* at Simhachalam; *Yerra mokiri* at Panchadharla; *Chevvezhai* at Erode; *Yerra chakkarakeli* at Bhimadolu; *Lal mowze* at Kurnool town; *Kempu bale* at Rampuram; *Kunkuma bale* at Kampli; *Lal kel* at Kallar Government Gardens; *Chontha bale* at Virarajendrapet and *Sakalathi bale* at Mercara.

It is not largely cultivated due to the very long duration of the variety. It takes full 18 months for the harvest of the crop. In the State it is largely grown in the Palace Gardens. The fruits are solely used as ripe

ones. The ripe fruits have very rich flavour and taste. The purple colour of the unripe fruit turns red on ripening. It is one of the choicest varieties of the State. The pseudostems are about 14 feet high and about 36 inches in girth at the base. The leaves are about 10 feet long and about 35 inches broad. The petiole is stout and about 26 inches long. The margins of the petiole are about an inch and a half apart. The bunches are loosely packed and medium heavy. Fruits are terete having a distinct apex. There is a green sport in this variety which has green stem and fruits. The green fruit turns dull yellowish on ripening. Both these types are sometimes seen in the same stool. The taste and flavour of the pulp are the same in both.

8. *Chakkarakeli* (*Musa paradisiaca* Linn., var. *Chakkarakeli*). *Raja bale* in Bangalore. Outside the State it is known as *Chakkarakeli* at Rajahmundry; *Chakkara kadali* at Trichur Farm; *Godaveri Chakkarakeli* at Piridi near Bobbili; *Sajja aratti* at Simhachalam; *Shahaja* at Panchadharla near Yellamanchili; *Thella chakkarakeli* at Samalkota Farm; *Then kadali* at Erode; *Raja kili* at Pudupatnam; *Raja vazhai* at Gudiyattam Farm; *Mysore rasthali* at Mettupalayam; *Manchi chakkarakeli* at Vellatur near Bhattiprolu R. S.; *Pedda chakkarakeli* at Siruva Lanka; *Rasthali* at Srivilliputtur and *Aa bale*, *Raja bale* at Virarajendrapet.

This variety may be termed as the king of bananas as the local name *Raja bale* indicates. It is undoubtedly the best banana in the world. The late Sir Arthur Hill, Director of the Royal Botanic Garden, Kew, Surrey, England, expressed the same opinion after tasting some ripe fruits of this. The pulp is very sweet and has very rich flavour. The fruit is ready for the table even when the rind is greenish yellow. The pedicels of the fruits are very strong and consequently they have to be cut and separated with a knife even when the fruits are well ripe. This variety has very poor keeping quality. The colour of the rind of ripe fruits is yellow but it is greenish in plants grown in Coorg and probably in similar altitudes. It is largely cultivated in the Godaveri District where there is a great demand for the fruits of this variety. The pseudostems are about 9 feet high with a girth of about 26 inches at the base. The leaves are about 7 feet long and about 3 feet broad. The petiole is thick and 10—12 inches long. The margins of the petiole are two to two and a half inches apart. In young plants they are bright red and revolute. The bunches are medium heavy and loosely set. Fruits are terete and taper to a distinct apex.

Other varieties rarely met with in the State are *Vamanakeli* known as *Kuja bale* and *Pacha bale* in Bangalore; *Sambrani monthan* known as *Boodhi bale* in Bangalore and *Boodhi madhuranga* at Palhalli; *Anai komban* known as *Naga bale* and *Haavu bale* in Bangalore; *Vannon* known as *Kadu Bale* at Palhalli and *Ela vazhai* known as *Ela bale* in Bangalore.

Some other varieties met with only with the seedsmen of Bangalore are *Thattilla kunnan* known as *Kaththe bale* and *Kullan* known as *Aana guja bale*.

The foreign varieties recently introduced by the State from Brisbane, Australia, are grown at the Sewage Farm, Bangalore and at the Kannambadi Dam Orchard. These varieties are "*Gros Michel*" (the famous banana of the West Indies), "*Ladies' Fingers*", "*Mons Mari*" and "*Giant Governor*", a tall form of *Vamanakeli*. Most of the varieties are thriving very well.

Diseases. 1. *Tharagumari*:—This disease was noticed at Nanjangud in the variety *Rasthali*. The leaves of the affected plants dry up from bottom upward even in grown up plants, the growth gets arrested and ultimately the whole plant dries up. A red streak was seen on one side of the trunk when the stem of a diseased plant was cut open and examined. It is a fungoid disease very similar to the "Panama disease" of the bananas in the West Indies.

2. *Sulikattuvadu*:—This disease was noticed at Jayachamarajapura, 4 miles from Chikkanayakkanahalli. It is common in *Rasthali* variety. Here the tops of the pseudostems get constricted, leaves fade and ultimately the plant dries up. It is very similar to the *Tharagumari* disease of Nanjangud and probably only a different name for the same disease.

3. *Katte roga* or *Palli roga*.—This was noticed at Kowsika, near Hassan. It is common in the variety *Boothi bale*. The disease starts with the yellowing of the bottom leaves and soon the central shoot is affected and the plant dries up.

The control method for all these diseases is more preventive. The affected plants should be removed with the entire rhizome with all the suckers and scorched. Suckers from affected plants should not be planted on any account.

Studies on *Diatraea venosata* Walk—A Pyralid Pest of Sugarcane in South India.

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Introduction. *Diatraea venosata* Walk. is a Pyralid borer attacking sugarcane in South India. It is found along with two other borers—*Argyria sticticraspis* Hampson and *Scirpophaga rhodoproctalis* Hampson—also belonging to the family Pyralidae. Ramachandra Rao (1930) and Ramakrishna Ayyar (1933) while considering *Argyria sticticraspis* Hampson as the most important pest, state that the other two are of minor importance only. Cherian and Subramanian (1937) have shown that *Scirpophaga* is not so unimportant as it was once considered to be. Detailed studies by the authors of *Diatraea venosata* Walk. with special reference to the symptoms of attack and incidence go to show that the borer is mainly responsible for reduction in tonnage and sucrose content in millable canes and