

Banana Figs and Banana Flour with special reference to Madras Varieties.

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Banana Figs. Ripe bananas when dried are known as banana 'figs'. They are prepared in the following manner:—

Ripe fruits are peeled, split longitudinally into two halves and each half again cut across into three or more pieces about an inch in length according to the size of the fruit, with a stainless knife or a sharp blade made of bamboo. The cut pieces are dried by exposing them to hot sun in wooden or bamboo trays with mosquito net coverings to keep off flies, or wooden trays with glass tops provided with ventilators for free passage of air. If suitable coverings are not used, maggots appear in the figs as the result of eggs laid by the flies on them while exposed for drying. The figs have to be dried for four or five days in a place free from dust when they will be ready for use. These may be packed in butter paper and stored in closed containers. They keep well for three to four months.

Under-sized banana bunches, which may not fetch good prices, normal bunches when there is a glut in the banana market due to over-production and those grown in out-of-the-way places with limited transport facilities, may with advantage be utilized in the preparation of these figs.

Varieties, the fruits of which are rather juicy, are generally preferred for making banana figs. The best Madras varieties suitable for this purpose are *Chokkarakeli*, *Nendrans*, *Pey kunnan*, *Poovan*, *Suganthi*, *Kostha bontha*, *Vamanakeli*, *Peyan*, etc. *Chokkarakeli* being a very costly fruit is too good for this purpose even though it makes the best figs. *Nendrans* also make very good figs but are available only in the West Coast where there is a ready market for them and may not be profitable for this industry. Figs prepared of the varieties *Vamanakeli*, *Peyon* and *Sirumalai* manifest a deliquescent tendency besides being also too costly for this purpose.

The varieties, that are used for banana fig making, should, in addition to their juicy nature, also be heavy yielding and be easily grown anywhere even under adverse conditions. The varieties answering all the conditions are only very few. The best Madras varieties are *Pey kunnan*, *Kostha bontha*, *Poovan* and *Suganthi*. All these varieties can be easily grown under diverse soil and climatic conditions. *Pey kunnan* and *Kostha bontha* thrive even in alkaline soils though bananas in general are very susceptible to alkalinity.

Banana fig making by drying in the sun may be done during summer months or whenever there is a fairly long break in the monsoon. It should not be tried during the monsoon season when the unfinished products get mouldy and become unsuitable for the purpose.

A dehydrator for preparing banana figs quickly was tried at the Agricultural Research Station, Samalkot, Godavari District, during 1937-38 and compared with the sun-drying process. The figs of *Chakkarakeli* were ready in about 10 hours by the dehydrator at 54°C-65°C, while it took 5-6 days at 40°C-45°C by the sun-drying process. Though the finished product was obtained much quicker in the dehydrator the quality was found poor and the cost of production high.

Only well ripe banana fruits should be used for making figs; otherwise, the figs will be hard and less sweet even though the quantity obtained will be slightly high due to some starch left in the under-ripe fruits. In the variety *Pey kunnan* under-ripe fruits gave 28%, ripe fruits 24% and well ripe fruits 21.5% of figs. The last one was very soft, sweet and of the colour of honey.

The percentages of banana figs to fruits at different stages in the varieties *Chakkarakeli* and *Pey kunnan* are given below:—

	Percentage.	
	<i>Chakkarakeli</i>	<i>Pey kunnan</i>
The rachis (6" of peduncle, axis and 3" of axis of inflorescence above fruits) to unripe fruits in bunch soon after harvest.	11.3	6.7
Ripe fruits in hands to unripe fruits in hands	88.3	88.1
Pulp to ripe fruits in hands	65.9	76.2
Banana figs to pulp	27.6	30.25
Banana figs to bunch (with 6" of peduncle, central axis and 3" of axis of inflorescence above unripe fruits) soon after harvest	12.6	17.7
Banana figs to unripe fruits in hands	15.8	19.0
Banana figs to ripe fruits in hands	18.2	21.5

It will be seen from the above that *Pey kunnan* yields a higher percentage of figs than *Chakkarakeli*.

Banana fig is a highly concentrated food suitable for travellers. Weight for weight banana figs are more nourishing than wheat bread. A pint of milk and six ounces of banana figs make a good meal (Fawcett). In places where fresh bananas could not be easily and economically obtained, banana figs can very well take their place. If the banana figs are sufficiently advertised and popularized in parts of Northern India where bananas are not grown or easily obtained, a good market can be found for banana figs produced in South India.

Standardized bunches of 8 or more hands and occasionally of 7 are exported to America and Europe from the West Indies. The undersized bunches fetch only one-fourth the normal price and are therefore not exported. These bunches are therefore converted into banana figs with profit. There are several factories at work in Jamaica for banana fig manufacture. The figs used to be exported to European countries at 42 shillings per hundredweight. Banana figs were used as part of army rations in Austria; and for all purposes where it was of consequence to have food in small compass (Fawcett).

Analyses of the banana figs of varieties *Chakkarakeli* and *Pey kunnan*.*

		<i>Chakkarakeli.</i>	<i>Pey kunnan.</i>
Moisture	...	10.85	8.20
Ash	...	3.48	2.88
Proteins	...	5.48	2.91
Sugars	{ Reducing	...	43.29
	{ Non-reducing	...	53.68
Fat, fibre, etc.	...	10.66	1.05
	...	26.24	31.28
		100.00	100.00
Lime (CaO)	...	.116	.123
Magnesia (MgO)	...	.11	.194
Potash (K ₂ O)	...	.195	.141
Phosphoric acid (P ₂ O ₅)	...	.306	.202
Nitrogen	...	.82	.47

Banana flour. Banana flour is made from fully mature unripe bananas, i. e., before the starch is converted into sugar by ripening. Unripe fruits are peeled, cut into thin slices and sun-dried. It is difficult to peel green bananas, but with some experience it can be easily done. If the green bananas are thrown into scalding water (176°F) for four or five minutes the peel is easily removed. Ordinary steel knives should not be used as they turn the cut surfaces of bananas black; nickel blades or stainless knives should be used. These slices are dried in the sun for about four days when the percentage of water contained in them will be reduced from 70 to 15. These chips are then milled in flour mills and sifted. There are factories in the West Indies with vacuum apparatus for the manufacture of banana flour. The flour is packed in boxes or barrels lined with paper. It is also exported to England as banana chips as milling, sifting, etc., are better done there.

The percentage of banana flour to unripe fruits varies slightly with different varieties. The percentage of flour to unripe fruits in hands in the variety *Poovan* is 17.5 and in *Adakka kunnan* 21.2. The percentage of flour to unripe fruits in bunches in *Poovan* is 15.2 and in *Adakka kunnan* 18.3.

Statement showing the analyses of banana flours of five Madras varieties as compared with those of rice and wheat:*

	<i>Poovan</i>	<i>Pay ladan</i>	<i>Kunnan</i>	<i>Then-kunnan</i>	<i>Adakka kunnan</i>	<i>Rice</i>	<i>Wheat</i>
Moisture	10.9	10.3	10.5	10.8	10.2	11.6	12.3
Ash	2.5	2.2	2.5	2.0	3.0	1.2	0.6
Crude proteins	2.8	2.8	2.9	2.9	4.9	6.6	10.2
Ether extractives	0.8	0.5	0.6	0.4	0.9	0.1	1.3
Crude fibre	0.8	0.9	1.3	0.7	1.4	0.1	0.3
Carbo-hydrates	82.2	83.3	82.2	83.2	79.6	80.4	75.3
Total	100.00	100.00	100.00	100.00	100.00	100.0	100.00

* The analyses were done by the Government Agricultural Chemist, Coimbatore.

Banana flour is also known as banana meal. It is rich in carbohydrates and mineral matter, but poor in protein. The starch of banana is more easily digestible than cereal starches.

The British Medical Association recommends the use of banana flour in infant feeding. It is cheap and wholesome, possessing a high nutritive value. It can be made in a few minutes by mixing up a heaped table spoonful (one ounce) of banana flour with a pint of water and then boiling for five minutes. A gruel made in this way has excellent colloidal properties when added to milk in equal quantity; it thickens the milk and prevents formation of a leathery coagulum of casein and satisfies the appetite of hungry infants more effectually than simple milk dilutions. Banana gruel is particularly suited for patients recovering from typhoid fever and is excellent in cases of dysentery and similar abdominal complaints. In cases of chronic dyspepsia and gastritis properly prepared banana flour is easily digested.

Banana flour is a common infant food in the West Coast of the Madras Presidency (Malabar, Cochin and Travancore). The flour of the varieties *Adakka kunnan* and *Nendran* is used for this purpose. Non-juicy varieties are generally preferred. The flour of *Kunnan* series (*Adakka kunnan*, *Kunnan*, *Venneettin kunnan*, *Then kunnan* and *Thattilla kunnan*) is considered superior to that of other varieties. The flour of *Nendran* has a high percentage of calcium and phosphoric acid. The food stuffs and fodders of the West Coast are generally deficient in these two minerals; but nature has so adjusted the requirements of people by making this variety of banana an important article of food in this coastal region, while it is not much liked by people in other parts of the Presidency. The *Adakka kunnan* contains double the quantity of protein that is usually found in any other variety of banana and it is a happy coincidence that the flour of this variety has for long been in use in Malabar as an important infant food.

Bread and biscuits are made of banana flour in foreign countries with the addition of wheat flour. The banana bread is uniform in texture, permanently moist, of a golden colour, and very nutritious. Banana flour is particularly suitable for the manufacture of yeast used in breweries (Arguelles).

There is ample scope for the development of banana fig and banana flour making, as cottage industries in many parts of this Presidency where conditions favourable for their manufacture prevail.

The following are the various local names for some of the important varieties suitable for banana fig and flour making.

Chakkarakeli (*Musa paradisiaca* Linn. var., *Chakkarakeli*).

Shahaja in Isikki lands near Vizagapatam, *Saja aratti* in Simbachalam, *Tella chakkarakeli* in Tanuku, *Manch chakkarakeli* in Vellattur in Repalle taluq of the Guntur district, *Pedda chakkarakeli* in Siruvalanka, *Rajakili* in Pudupatnam near Sadras, *Kari uaxhai* in Trichinopoly, *Mysore Rasthali* in Mettupalayam, *Then*

kadali in Erode, *Rasthali* in Srivilliputtur, *Chakkara kadali* in Trichur, *Aa bals* in Virarajendrapet, *Raja vazhai* in Kulittali,

Largely grown in Godavari district.

Poovan (*Musa paradisiaca* Linn., var. *poovan*).

Vasana chettu in Gopalpur, *Ginni*, *Karpura chakkurakoli* in Piridi near Bobbili, *Chakkarakoli* in Velpur near Tanuku, *Karpura* in Peravalli near Tanuku, *Rasthali* in Challapalle, *Soan mowse* in Kurnool town, *Sugantham* in Kalava near Kurnool, *Yerra sugantham* in Giddalore, *Sugandhi* in Rampuram near Tungabhadra, *Rasa balai*, *Salem* in Hospet, *Bengala* in Allipuram near Nellore, *Yerra arotti* in Godugumuru near Chittoor, *Navarai* in Madurantakem, *Poo vazhai* in Modikuppam near Chittoor, *Raja vazhai* in Gudiyattam, *Dora vazhai* in Kallar Government Gardens, *Kallath vazhai* in Mettupalayam, *Erode poovan* in Coimbatore, *Puluppu kai*, *Korangu vazhai* in Pollachi, *Mysore poovan* in Gudalur, *Adukkunamarai* in Pannakkadu, *Pulneys*, *Kadali* in Thangachimadam, *Puliohan kadali* in Thisayanvilai, *Cheru kai* in Alwaye, *Palayankodan* in Trichur, *Mysore kadali* in Ponnampet, *Mysore bals*, *Mysore kadali* in Moodbidri, *Mysori* in Kumaranallore, *Mysore* in Mangalore, and *Cheena bals* in Bangalore, *Kari gaddi* in Chunnapatna, *Rari rasa bals* in Kyatsandra, *Kari bals* in Palhalli, *Othu rasa bals* in Nagavalli, *Kari puttu bals* in Jayacharmarajapura, *Vilayithi bals* in Kowsika, *Huli bals* and *Nanjangud bals* in Ambuga, in the Mysore State.

It is grown throughout the Presidency.

Pey kunnan (*Musa paradisiaca* Linn., var. *pey kunnan* K. C. Jacob).

Sambrani in Yercaud, *Shevaroy's*, *Awak legor* in Trichur.

Largely grown at Yercaud in the Shevaroy hills.

Nendran (*Musa paradisiaca* Linn., var. *nendran*).

Ettakka in Alwaye, *Chengazekodan* in Trichur, *Nendra bals* in Virarajendrapet, *Coorg*, *Thiruvonan*, *Thiruvonan* in Tellicherry.

Largely grown throughout the West Coast.

Adakka kunnan (*Musa paradisiaca* Linn., var. *adukka kunnan*).

Cheru kunnan in Trichur, *Pakada kunnan*, *Chara kunnan* in Kongad near Palghat, *Vennsettu kunnan*, *Mulli kunnan* in Perintalmanna, *De kunnan* in Manjeri, *Mundi kunnan*, *Vennser kunnan* in Pulamanthol near Pattambi.

Largely grown in the Malabar District.

Kunnan. (*Musa paradisiaca* Linn., var. *kunnan*).

Madras aratti in Piridi near Bobbili, *Chakkarakoli* in Isikki lands near Vizagapatam, *Ginni* in Chatikona summit, *Neechu* in Khandavalli near Tanuku, *Karpura chakkarakoli* in Velattur near Bhattiprolu, *Amritapani* in Siruvalanka, *Sanna akkulu chettu* in Nidubrolu, *Chinna sugandham* in Giddalore, *Chitti balai* in Kampli near Hospet, *Sugantha* in Musanur near Kavali, *Vellai kadali* in Sankarancoil, *Nar kadali* in Sendamaram, *Kannan* in Alwaye, *Valiya kunnan* in Trichur, *Jirika bals* in Kallamandkur near Moodbidri, *Tirunolli kadali* in Kasargod, *Adukkun poovan* in Nileshwar, *Adukkun* in Kurumathur near Taliparamba, *Nadan kunnan* in Perintalmanna, *Adukkun* in Tellicherry.

Largely grown throughout the West Coast.

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