

Millets in Ramanathapuram and Tirunelveli Districts with Special Reference to Spread of Strains

by

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Introduction: The term "Millets" is a collective name for eight different cereals grown mostly under rainfed conditions. The more important among them — *Cholam*, *Cumbu* and *Ragi* form the major millets and *Samai*, *Varagu*, *Kudiraivali*, *Tennai* and *Panivaragu* which are of lesser importance are called minor millets. The above mentioned cereals thrive in areas of low fertility and rainfall and form the staple food of the population in areas where they are extensively cultivated. Millets are also very important fodder crops and are grown practically in all the districts of the State, except in the heavy rainfall districts.

In the districts of Ramanathapuram and Tirunelveli millets are cultivated extensively under rainfed conditions while a small area is raised under irrigated conditions. The area under millets (rainfed and irrigated) is furnished below:

Millets Area in Ramanathapuram and Tirunelveli Districts.
(in acres)

Crops	Rainfed			Irrigated		
	Rama-natha-puram	Tirunel-veli	Total	Rama-natha-puram	Tirunel-veli	Total
Cholam	15,136	23,334	39,170	30,864	56,640	87,504
Cumbu	110,587	158,331	268,911	12,103	3,759	16,562
Ragi	12,757	19	12,776	63,813	24,801	88,684
Tennai	7,128	133	7,261	122	77	199
Varagu	9,905	4,594	14,499	54,405	496	54,405
Samai	29,214	54,405	83,619	146	217	363
Kudiraivali	30,410	43,759	74,179

From the above table, it is observed that *cumbu* is the crop extensively cultivated under rainfed conditions, i. e., over 2.5 lakhs of acres followed by *Cholam*, *Ragi*, *Samai*, *Varagu* and *Kudiraivali*. The important crops raised under irrigation are *Ragi*, *Cholam* and *Varagu*.

In four taluks in Ramanathapuram District, i. e., Sattur, Srivilliputhur, Aruppukottai and Mudukulathur and four taluks, i. e., Koilpatti, Sriyaikuntam, Nanguneri and Tenkasi in Tirunelveli district, millets occupy a very large area. In the other nine taluks, millets are not grown on an extensive scale.

Local Agricultural Practices: The two districts of Ramanathapuram and Tirunelveli are contiguous and form the southern end of the State. The climate, rainfall (28" per year) and agricultural practices are almost similar in the two districts, except for very minor variations. Rainfed crops are raised in the black soil areas immediately after the receipt of the north east monsoon rains. It is to be noted that rains are received slightly earlier in the Ramanathapuram district than in the Tirunelveli district, consequently, the area under *Varagu* and *Samai* is more in Ramanathapuram district.

The cultivation regimen of millets is the same as in other districts, except for certain practices which are peculiar to the tract and they are detailed below:

Cumbu: *Cumbu* is grown in the same field, year after year, without rotation and without any consequent reduction in yield. This practice is known as *Cumbu-adi-Cumbu*, and is peculiar to the tract. These fields are heavily manured — sheep penning at 1,000 per acre and 4–5 tons of farm yard manure, since *Cumbu* — a short duration crop of 90–95 days only — is grown year after year, there is not much drain on the manure. Every rich cultivator relegates one fourth of his area to *Cumbu-adi-Cumbu* and gets a return of 1,200 lb. to 1,500 lb. grain per acre.

Cholam: A peculiar variety of *Uholam*, known locally as "Irungu" *cholam* (*Sorghum dochna*) is grown exclusively for fodder purposes. The grain is dark brown in colour and is enclosed completely by the glumes. The grain does not thresh out easily and has a slightly bitter taste, hence this variety is not popular for grain purposes. For fodder, a very heavy seed rate of 80–100 lbs., per acre is adopted, and since no thinning is done, the stalks remain thin. The grain yield from such a crop is naturally poor. The dry straw yield is about 2500–3000 lb. per acre.

Attempts were made in the early years of the opening of the Agricultural Research Station, Koilpatti, to introduce other varieties of *Cholam* suitable for both grain and fodder purposes. A number of varieties, i. e., *Periamanjil Cholam* of Coimbatore, *Pacha jonna* of Guntur and Nandyal, *Tella jonna* of Bellary and sorghums from Bombay province and U. S. A. were tried, but it was found that none of them suit the conditions prevailing in the tract. Though the vegetative growth is satisfactory, they do not set seed due to want

of sufficient moisture in the soil, at the flowering time. The cultivation of *Cholam* for grain purposes in red soil areas under rainfed conditions, is a peculiar feature in the Tenkasi Taluk of Tirunelveli district. A large patch of red loamy soil of nearly 50,000 acres i. e., a semi circle with Courtallam as the centre, gets the benefit of both the south west and north east monsoons. In this area, with the receipt of stray showers during the months of January, February and March, lands are ploughed, manured, covered and kept ready for the receipt of summer showers during the month of April. As soon as rains are received in April, *Cholam* is sown broadcast at the rate of 20 lb. to the acre and covered with country plough. When the seedlings are about six inches in height, a thinning, weeding and hoeing is given. Till about the beginning of the first week in June, no rains are received. Thus from the date of sowing in the month of April to the first week of June, the crop passes through a critical period. The seedlings shrivel up and look parched due to drought and with the advent of the south west monsoon rains, the crop recovers and the growth during June–July is remarkable. If, instead of *Cholam*, any other crop is sown, it is almost sure that it would dry up. The *Cholam* crop comes to maturity in September. An acre yield of about 1,500 lb. is not unusual. The *Cholam* stalks are not cut as is usual in the other tracts, but the plants are pulled out so that the land can be easily got ready for the black gram crop to be sown in the north east monsoon season, i. e., in October. The blackgram crop is not manured and no preparatory cultivation like ploughing is given. The seeds of blackgram are sown and covered with the country plough. Ploughing and manuring, it is believed, result in the blackgram crop, growing bushy, without producing pods.

Ragi: *Ragi* is cultivated on an intensive scale, mostly under irrigation. Two crops — one during January–April and the other during March–June — are raised and both go by the name of “COEAI KEPPAI” or summer *ragi*. The crop grown during September–December goes by the name of “KALA KEPPAI” or main *ragi*. The area under summer *Ragi* is limited and usually short duration varieties with 90–110 days are preferred for this season. For the main season, longer duration varieties with a duration of 120–140 days are planted, since well irrigation is supplemented by the north east monsoon rains.

Varugu: This crop is raised on an extensive scale in Ramanathapuram district since the receipt of north east monsoon rain is slightly earlier than in Tirunelveli district. A peculiarity in the

Ramanathapuram district is that *Varagu* is grown regularly as an irrigated crop by transplanting seedlings in summer. Even rich cultivators prefer to have a course of *Varagu* rice.

Tenai: The area under this crop is very limited. It is grown as a mixture with cotton under rainfed conditions. When it is grown as a pure crop under irrigation from February–April, nurseries are raised and seedlings transplanted.

Spread of Improved Strains released from the Station: The strains of millets released at Coimbatore were tested at this station and out of the several selections and strains tried, only a very few suited the tract. Hence selection work on the important millets, i. e., 1) *Cumbu* (rainfed), (2) *Irungu* fodder (rainfed), (3) *Vellai Cholam* (irrigated), and (4) *Ragi* (irrigated) were taken up from the year 1930.

1. *Cumbu*: (rainfed) By selection work, an improved strain of *Cumbu* K1, giving 10% more than local, was released during the year 1934. This strain is very popular in all the *Cumbu* growing taluks and an area of 1,05,000 acres is estimated to be under this strain; the percentage of spread in Tirunelveli and Ramanathapuram being 41 and 36 percent respectively.

Breeding work on Maize in U. S. A. has resulted in a number of hybrid strains (giving more yield than either parents) being released for distribution. In a similar way, breeding work to produce hybrid *Cumbu* is in progress and results so far achieved are encouraging.

2. *Irungu Cholam*: Breeding work to improve the straw yield of *Irungu cholam* resulted in the release of *Irungu* K1, giving 14% more than local in the year 1934. Due to paucity of seed production, the area under spread is limited and is estimated to be 3,000 acres.

An extracted selection of *Cholam* from a cross between "Periamanjai" of Coimbatore and "Irungu" of Tirunelveli was received from the Millets and Pulses Specialist, Coimbatore and tried at the Agricultural Research Station, Koilpatti. This selection gave better yields of both grain and straw over "Irungu K1" and local *Irungu*. This selection has been renumbered after extensive trials as *Cholam* K3, and is under distribution, but the area under spread is limited due to want of sufficient seed, and is estimated at 400 acres. Special efforts are being made to increase the seed production

and bring more area under its cultivation. This strain has the grain qualities of *Periamanjai cholam* and the fodder qualities of *Irungu Cholam*.

3. *Ragi*: By selection, two strains K1 and K2, giving 14% more yield than local *Ragi*, have been released for distribution. *Ragi* K1 is green pigmented, while *Ragi* K2 is purple pigmented. *Ragi* K1 has a tendency to lodge at the time of harvest, while *Ragi* K2 does not lodge. Gradually, *Ragi* K1 is being replaced by *Ragi* K2. Attempts to get non-lodging green pigmented extracted types are being made by crossing *Ragi* K1 and K2. The area under spread of these two strains is estimated to be 47,000 acres, the percentage of spread in the Tirunelveli and Ramanathapuram districts being 60 and 50 percent respectively.

4. *Vellai Cholam*: By selection, a strain *Cholam* K2 has been released for distribution. This strain is shorter in duration than local *Cholam* by a week to ten days and gives an extra yield of 15% over local. The grain is pearly white in colour. This strain is very popular and the area under spread is estimated to be 60,000 acres, the percentage of spread in Tirunelveli and Ramanathapuram being 74 and 58 percent respectively.

NOTE: The area under improved strains, the area cultivated under each crop and the percentage of the area under improved strains to the total area are furnished in Appendix I.

Details regarding the strains of millets released from the Agricultural Research Station, Koilpatti are furnished in Appendix II.

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APPENDIX I.

Spread of Millet Strains in the tract.

Strains	Tirunelveli			Ramanathapuram		
	Total area	Covered by improved strains	Percentage of spread	Total area	Covered by improved strains	Percentage of spread
Cholam K2 Irrigated	56,640	42,000	74 %	30,864	18,000	58 %
Cumbu K1 Rainfed	158,331	65,000	41 %	110,587	40,000	36 %
Ragi K1 and K2 Irrigated	24,891	15,000	60 %	63,883	32,000	50 %

