

## Certain Peculiar Agricultural Practices in the Madras Presidency.

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Accounts of special and peculiar agricultural practices prevailing in the different parts of the Madras Presidency were collected sometime back in the office of the Director of Agriculture. It is seen that these practices suit the local conditions that prevail in the different places, obviously as a result of centuries of experience. Many of them, no doubt, would be equally suitable for other places having similar conditions. With this end in view the following compilation has been made in the hope that it would be both informatory and useful. It has been attempted to group the practices under (1) Crops and (2) Cultivation practices, but there is a certain amount of unavoidable overlapping on account of their close interdependence.

**Crops: (a) Paddy.** (1) *Dry nurseries in Kistna District.* Dry paddy nurseries are raised in sandy soils with liberal manuring, far ahead of the planting season. The seed rate adopted is  $8\frac{1}{2}$  lb. of seed per cent and seedlings from 2 cents of nursery plant an acre normally. This is about the lowest rate of seeding adopted for paddy. This practice is based on the facts that water is not available easily for raising nurseries, prior to the receipt of water in the canal and that early planting is advantageous and profitable in the locality. The need for reducing the seed bed area and the seed rate is obvious.

(2) *Semi dry paddy cultivation.* Water is received for the cultivation of paddy in August—September in parts of East Godavari, Chingleput, South Arcot, etc. The light soils are ploughed with the summer rains and paddy is sown broadcast or drilled with the early rains in June. Where the crop is drilled, intercultivating implements are worked in between the paddy rows to keep down the weeds. The crop is not irrigated for about 2 months. The fields are flooded on receipt of water in the tanks and small country ploughs are worked carefully to stir the soil and lightly disturb the paddy plants. The disturbed plants get re-established and make vigorous growth. Hereafter they are irrigated just like the ordinary wet crops. Wet paddy crops raised after the receipt of water in the tanks are generally poor in these tracts and hence early dry sowing is adopted.

(3) *Ratooning paddy.* Paddy is allowed to ratoon in single cropped wet lands in years when late rains are plentiful and water supply in the tanks is kept up. Certain varieties like *Peddampalai* and *Yerra sannam* are known to ratoon well and yield about 400 lb of grain per acre.

(4) *Deep water paddy.* A paddy variety, called *Koloivalai* is grown in the tank beds, on the Periskulam taluk of the Madura District. It has the reputation of being able to stand submersion in water. The variety is said to be very nutritious and is preferred for making puffed rice.

(5) *Seed and grain preservation* Paddy seeds are stored in South Canara in straw bundles which are more or less round shaped. These are called *Muras* and contain about 85 lb. of seeds. The bundles are plastered over with cowdung and stored over the fire place. South Canara has heavy rains and the atmosphere is highly humid and paddy seeds stored otherwise lose their vitality.

Paddy grains are stored in receptacles made of twisted paddy straw and the top of the receptacle is covered by nice paddy straw thatch.

(6) *Lowering the levels of wet lands* When paddy fields get silted up, the level of the fields has to be reduced occasionally to facilitate irrigation in parts of the Tanjore District. A series of long pits running along the length or width of the field are dug parallel to each other in summer. The pits are nine inches to a foot in depth and of varying width. The soil removed from the pits is used for filling up depressions and low level fields. During puddling in the season the fields get levelled up.

(7) *Dry crops in single cropped wet lands.* In certain parts of the Trichinopoly district the water supply is uncertain at the beginning of the season. In such places a groundnut crop is raised in the beginning and this is followed by paddy. Mixed crops of *cholam* and pulses are grown under similar conditions in parts of the Tinnevely District. Where water supply becomes uncertain for commencing a second crop of paddy, pulse crops—black gram and green gram—are raised. This may be possible in many of the single cropped wet lands also. If the pulse crop is sown just prior to the harvest of paddy and is established, it would come up with the moisture retained by the paddy fields.

(b) *Cholam.* (1) *Mixed cropping.* *Talaivirichan cholam*, a six month variety and *kullan cumbu*, a 3½ month variety are sown mixed in June with the advent of the south west monsoon in parts of the Salem District. Pulses like black gram, green gram and *D. lablab* are also mixed with the above in certain cases. *Cumbu* is harvested in September and *cholam* in December. The mixture gives some crop at least during adverse seasons. When the south-west monsoon is satisfactory and the north-east monsoon poor a fair *cumbu* crop is had. When both the monsoons are satisfactory, good yields of both *cumbu* and *cholam* are obtained.

(2) *Cholam—cucumber mixture.* *Cholam* and *nakka dosakoya*, a variety of cucumber, are sown together in the black soils of Naidyal. The cucumber is used as a vegetable when fresh and the surplus is sliced dried and preserved. The dry cucumber chips are fried in oil and used occasionally.

(3) *Transplanting cholam* *Cholam* is not normally transplanted, but it can be done. The onion crop in Dindigul comes to harvest in March and *cholam* seedlings are transplanted amidst the onion crop, 15 days prior to its harvest. This is a successful practice. The season for onions is December—March and for *cholam* March—June and the two seasons overlap and there is no time for preparing the land for the *cholam* crop after

the harvest of the onion. The above device works satisfactorily and the cholam crop is given an extra deep hoeing to make up for the want of the preparatory cultivation.

Cholam seedlings about 25 days old are transplanted in the central districts, with the main object of saving two or three irrigations.

(4) *Transplanting in dry lands.* Cholam and ragi seedlings are dibbled in plough furrows in parts of Vizagapatam and Salem. Cumbu is similarly transplanted in parts of Cuddapah. The dibbling of the seedlings is done generally when there is drizzly weather. This system permits long duration varieties being grown, where otherwise short duration varieties only would have to be sown directly. This system is in vogue in tracts where rainfall is received rather late.

(c) **Sugarcane** (1) *Saving cane setts.* In the Bobbili taluk of the Vizagapatam district the later tillers and the big sized watershoots (gor-mandisers) of sugarcane crop is not cut at the time of harvest of the cane crop at maturity. The fields are irrigated occasionally and the tillers left behind make fair growth during the interval between harvest and planting and provide seed material. The amount of seed material secured is not negligible in early varieties and in profusely tillering varieties. Further as the setts are obtained from immature material their germination is very satisfactory.

(2) *Sugarcane trash.* The sugarcane trash obtained at the time of cane harvest is used as bedding in the cattle stalls, in parts of Anakapalli. The trash serves as litter. It is gathered and spread over the young cane fields as a good surface mulch. This practice is said to save a few irrigations initially and induce good growth in the young canes.

(3) *Cane planting season.* Sugarcane is planted mainly in two seasons round about Coimbatore, in February—March and July—August, though planting may be done all the year round to provide chewing canes. The February—March planting is preferred where water supply is limited in the summer months. This crop is however subject to the heavy westerly winds during the south-west monsoon season and flowers during the north-east nonsoon. The July planted crop is however not subject to these disabilities, but the crop is full grown in summer and requires to be irrigated copiously, consequently an adequate water supply is required.

(4) *Cropping round sugarcane fields.* The sugarcane fields are planted all round with *agathi* (*Sesbania grandiflora*) in the Giddalore area of the Cuddapah District. The Agathi stems are well grown and provide props or putting up thatched pandals for jaggery boiling. The *agathi* leaves gathered by breaking off the side branches provide greens for the household for a large part of the year.

(d) **Plantains.** (1) *Inter-cropping in plantain area.* Plantains are planted 12—15 ft. apart round about Bhimilipatam in the Vizagapatam district and the crop is kept on the land for 5—6 years. In the first year no inter-crops are taken, the first one being either *pyru ragi* or chillies.

After the plantains put forth the bunches, three to four suckers only are retained and the leaves are periodically harvested. Inter-cropping the plantains is resorted to in this tract, as the garden land holdings are very small, generally less than an acre and the cultivators are anxious to make the most of the available land.

(2) *Inter planting plantains.* Plantain suckers are inter-planted in Turmeric fields during November in the Repalli taluk of the Guntur District. The plantain suckers establish themselves and make good growth after the turmeric is harvested in February—March. This practice permits quick succession of crops and saves time considerably.

(3) *Propping the plantains.* The plantains in Yellamanchili of the Vizagapatam district are supported by casurina props, struck vertically into the soil near the base of the plant at the rate of one per plant. The plant is tied to the prop at two or three places with plantain and palmyre fibres. Propping is resorted to as the cyclonic weather in November and May causes lodging and damage up to even 90% at times. Propping saves 50—60% of the plants. The plantain bunches in Godavari are supported by a fork made up of two bamboo poles tied together. By using single poles young plants are supported. It may be mentioned that the South Arcot cultivator plants the dwarfish 'Maruitius' variety to avoid damage by cyclonic winds.

(4) In *thella* and *karpura-chakrakeli* plantain garden of the Circars the common curry variety of plantains, *bontha* is planted all round. The *bontha* plantains are said to act as wind breaks, being more hardy and less liable to breakage than the *thella* and *karpura chakrakelis*.

(e) *Turmeric. Mixtures in turmeric fields.* Many crops, particularly vegetables are grown mixed with turmeric in all parts of the Presidency. Coriander and amaranthus are sown in the beds along with turmeric and the sides of the irrigation channels are planted to vegetables like brinjals, ladies fingers, radish, cluster beans, etc., in Tirupattur. Coriander and amaranthus are harvested by the time turmeric germinates and starts growing. The other vegetables begin to yield in course of time. By adopting this system of cultivation the ryot is enabled to get income continuously by the sale of vegetables. The income may range from Rs. 10 to Rs. 20 an acre and comes in handy for meeting the cultivation expenses on the turmeric crop.

Occasionally *agathi* also is planted along the irrigation channels. *Agathi* is allowed to grow till June, though turmeric is harvested in February—March. The *agathi* stems are well formed during harvest and are purchased by gardeners to serve as props for betel vines. The side branches of *agathi* are broken off as they are formed and sold for use as greens and cattle feed. *Agathi* leaves contain more protein than the other leguminous plants and are said to increase the secretion of milk in cows.

In the Hindupur taluk (Anantapur), 10 lb of coriander, 2 lb of mustard and 2 lb of fenugreek (per acre) are broadcasted, beds are formed and

turmeric is planted. On the top of this one lb. of radish and  $1\frac{1}{2}$  lb. of chilli seeds are dibbled. All the crops come to harvest within three months except chillies and turmeric. The fields are given a deep hoeing thereafter. It is said that the money realised by the sale of the minor produce meets the cost of cultivation of turmeric.

Ragi and mustard are grown as a mixture with turmeric in Badvel of the Cuddapah district. Castor is sown 10—15 feet apart in Proddattur to provide shade for the turmeric crop. Red gram is sown likewise in Rajampet.

(f) **Betel vine.** (1) Drumstick and *agathi* seeds are sown far in advance of planting betel vine to serve as standard for the betel vine in the Guntur district.

(2) Regular *pandals* with *cumbu* straw are put up in the Vizagapatam area and provide shade for the young betel vines.

(3) Betel vine is interplanted in the arecanut gardens near about Calicut. The areca trees serve as standards for the betel vine to cling on.

(g) **Fodder crops.** Sunnhemp is sown extensively in the Circars a week before the harvest of paddy in wet lands. The sunnhemp crop makes good growth with the moisture retained in the soil. The crop is harvested, when in flower, dried into hay and stacked with paddy straw in alternate layers. The leguminous hay enriches the paddy straw.

*Pillipesara*, horsegram, *cholam* and maize are also grown for fodder, either pure or mixed, in wet lands after the harvest of paddy. Black gram and green gram are also grown for grain similarly in wetlands.

(h) **Vegetables.** Brinjals are planted in November in parts of Vizagapatam. The harvest of the fruits is completed by July when gourds and other cucurbits are inter-planted. The cucurbit vines trail over the brinjal plants and there is not any need for putting up *pandals* for the cucurbits. This appears to be a device worth copying in other places as well.

**Cultural practices:** *Manuring.* The white encrustations (*Pati-sovudu*) from the old village sites are applied as a top dressing to brinjal and chilli crops in Circars. Old village site earth (*Poti-Mannu*) is applied to paddy fields in large quantities and its effect is said to last for 5—10 years. Ordinary samples of the earth contain one per cent in each of potash and phosphoric acid.

Tamarind seeds are applied to wet lands at 10—12 bags an acre in Bellary district for purposes of manure and for correcting the alkalinity of the soil. Tamarind leaves and husk are used similarly in parts of Salem district.

Silt is collected from river beds in Malabar coastal areas, where the water in the river is siltish, and applied to coconut trees with beneficial effect.

Gingelly is sown in wetlands after the harvest of the sugarcane as green manure for the succeeding paddy crop in the Hospet taluk of the Bellary district. Gingelly is preferred to sunnhemp, as the latter is highly susceptible to insect damage.

Sunnhemp is sown mixed with *ragi* and *varagu* in parts of Vizagapatam. The sunnhemp is a long duration variety. After the harvest of the cereal crop the sunnhemp is ploughed in as green manure for the succeeding paddy crop. The holdings are small in these areas and setting apart land for growing green manure is not feasible. A similar practice prevails in the North Arcot district also. *Kolingi* or Indigo is sown in the standing crop of *ragi* planted in December—January. The green manure crop is usually sown after the first hoeing for *ragi* and is later ploughed in at the time of preparing the land for the next paddy crop.

Indigo is also sown mixed with gingelly in parts of North Arcot during December. The first cutting of indigo taken after the harvest of gingelly is used for manuring the *Kar* paddy crop in May. The indigo stubbles make further growth and the second cutting taken in July—August is used for manuring the *somba* crop. Indigo is also sown in the standing tobacco crop at the time of hoeing in December. The indigo plants are cut in July and used as green leaf manure. Indigo is sown similarly in *ragi* and groundnut fields in different parts of the Presidency. Gingelly, indigo and mustard are sown mixed in wet lands after the harvest of the paddy crop in February—March in the Tanjore District

*Production of green manure seeds.* Sunnhemp is sown mixed with cotton, groundnut and red gram in the Vizagapatam district, with dry paddy, red gram and cotton in the Godavari district, and with *jonna* or other dry crops in the Guntur district. It is rarely grown as a pure seed crop in parts of Kistna, Guntur and Vizagapatam. Indigo is sown mixed with *tenai* or pure in the dry lands of the Nandyal valley for production of seed. *Daincha* is sown for seed in single cropped wet lands after the harvest of paddy in the Salem district.

*Cultivation.* Tobacco seedlings are planted rather widely in a second nursery in the Nuzvid area of the Kistna district, and eventually in the field proper, when the seedlings are well grown and sturdy. The double transplantation hardens the seedlings and the crop is enabled to withstand diseases better.

Paddy seedlings are planted likewise in a second nursery in parts of Nellore and Tinnevely districts in seasons when rains are late and water is not received in sufficient quantities in the tanks in time for taking up the planting of the main fields. This double transplantation arrests rank vegetative growth and enables long duration varieties being grown even in late seasons. This is particularly valuable in areas where short duration varieties fare badly when compared to the long duration season-bound varieties.

Chillies are transplanted in September and tobacco in October in the Gurazala taluk of the Guntur district. The gaps occurring in the chilli fields are filled up with tobacco seedlings in October, and the available space is thus fully utilised.

Groundnut and cotton are sown in the same line using the seed drill in parts of the Guntur district. It is claimed that this promotes the growth of the cotton crop.

Crops are sown in the Ceded districts with the help of country made seed drills called 'gorrus'. The *gorru* consists of a common beam to which a number of small plough bodies called tynes are attached. The tynes are connected to a seed hopper by means of bamboo or tin tubes and the seeds dropped in the hopper get distributed in the furrows marked by the *gorrus*. The seeds are covered by working a blade harrow or *guntaka* behind the *gorru*. Mixed crops are also sown with the drill. The common mixture of the Ceded districts is cotton and *tenai*. The central hole in the hopper is blocked and *tenai* seeds are dropped in the two end rows. The cotton is sown in central furrow with a separate bamboo feeder called 'Akkadi'. Thus two rows of *tenai* and one row of cotton alternating are sown together. Since the spaces in between the rows of crops are equal, the interspaces are hoed later with bullock hoes of suitable width. Considerable labour is saved in sowing, and intercultivating. There is saying in seed also. Further the seeds are all deposited at a uniform depth and germination is therefore uniform.

*Cholam* is occasionally sown in the Ceded districts in between the early season (*Mungari*) *tenai* lines with the aid of a small sized plough; the seeds are dropped in the plough furrows with an *akkadi*.

Tobacco and mustard seeds are mixed and sown in the nursery in parts of Ramachandrapur taluk of East Godavari. The tobacco seedlings are pulled out when they get ready. The mustard produced in the tobacco nursery is reported to be extremely good and is preferred for making mango pickles.

*Gogu* is sown mixed with dry paddy, cotton and red gram in the uplands of the Godavari and Kistna districts. *Gogu* serves as a leafy vegetable in the early stages and is used for the extraction of fibre later. The *gogu* leaves are fed to cattle in Guntur district.

Onions and chillies form a favourite mixture in the dry black soils of East Godavari district. The chilli crop is first planted in lines and the onions are dibbled later in September between the chilli lines after the first weeding. The onion crop comes to harvest in 3—3½ months.

Garlic is grown between the plantains in the Siruguppa taluk of the Bellary district, during the first year of the plantains.

A special variety of *Amaranthus* is sown mixed with *ragi*, *cholam*, etc., in dry lands in certain hilly parts of the Coimbatore district. *Amaranthus* is used as a green in the tender stages. Later, however, *Amaranthus* is allowed to set seed and fairly big sized seed heads are formed. The seeds are popped and consumed with jaggery.

The cultivation of Sidhout melons is confined to the Pennar river beds in the Cuddapah district. Small channels 9 inches wide and 10—15 ft. long are formed in the river beds and melon seedlings having two leaves are planted in the channels, in holes 1½ ft apart with a handful of cattle manure in each. Ten days later a mixture of bat's guano and cattle manure is applied round the plants. A week afterwards, neem cake is mixed with

either bat's guano or cattle manure in equal proportions and applied to the plants. The channels tend to get filled by this time. The next manuring is done a fortnight later. Small holes 4" x 4" are dug between the plants and filled with a mixture of neem cake and either bat's guano or cattle manure, and covered. The tips of the vines are pinched off to arrest further vegetative growth. The plants begin to flower by about the 45th day and the harvest of the fruits commences from about the 70th day after transplantation.

Tobacco is planted early in November in the stubbles immediately after the harvest of *ragi* in parts of the Periakulam taluk of the Madura district. Such early planted tobacco fields give a ratoon crop and the yield is nearly half that of the main crop.

Cumin is sown and chilli seeds are dibbled 2 ft. apart in the light black soils in parts of the Periakulam taluk, where there are summer drizzles. The crops are irrigated on alternate days. The cumin comes to harvest in 60 days and gives an income of nearly Rs. 150 an acre. The cumin crop is rather exhausting and fastidious and comes up only once in 4 or 5 years. Onions and chillies are grown mixed in a similar manner in the Andipati area.

A little water remains in the tanks at the time of the harvest of the *samba* paddy crop in the Bodinaickanoor area of the Periakulam taluk. *Ragi* and *cholam* crops are raised in the wetlands in April—May, utilising the limited supply of water in the tanks.

Castor seeds are dibbled in the main field bunds in the dry black soil areas immediately after cotton is sown in the Palni taluk of the Madura district. The castor pods are gathered in April—May and about 300 lb. of pods are obtained from an acre. The castor is pulled out along with the cotton crop.

Onions are planted on ridges in garden lands in September—October in the Palni taluk. Cambodia cotton seeds are also dibbled in the field 3 ft. apart both ways. The onion crop is harvested in about 3½ months and thereafter the Cambodia cotton is given a deep *mammottee* hoeing and is irrigated.

The villages on the Kodaikanal hills are higher above the paddy fields and carrying cattle manure from the villages to the fields is not feasible. The cattle dung pits are laid along the course of natural streams running from the village to the paddy fields. Cow dung alone is stored in these pits. When it is intended to manure the paddy fields the stream is diverted through the manure pits and the cow dung in the pits is kept stirred up. The ryots take turns and use the water from the stream that carries the cow dung in suspension and the whole paddy area is thereby manured.

Cambodia cotton is sown in February—March, after the harvest of paddy in wetlands, particularly in Ramnad and Tinnevely districts. Horse gram is intersown in May—June to serve as a green manure crop for the succeeding paddy crop.