

Survey of Fruit Growing in Madras State

By

J. SAMUEL SUNDARARAJ, B. Sc. (Ag.), D. I. II.

Fruit Assistant,

Fruit Research Station, Kodur P. O., Cuddapah Dt.

Introduction: Plant introduction and acclimatisation are two of the recognised methods of fostering plant industries and they have played a very important role in many lands with perennial crop culture, especially fruit growing. The diversity of fruit growing conditions as well as the vast range of varietal peculiarities in fruits necessitate a careful conduct of varietal tests in the main regions of every country. Where such variety testing grounds cannot be established in sufficient numbers, an investigation in the form of a survey to determine the varietal performance seems essential. In a State like that of Madras where the varieties and kinds of fruits are numerous, the variety testing grounds as well as the surveys have considerable value in delineating the optimum zone for each fruit. The survey can be relied upon to yield results of some value only when the varieties are true to name and the plant material is raised under known conditions and from trees of known parentage and performance. Such orchards which in the past were rare to find are now available for study after the advent of the nurseries managed by the Government. These nurseries have distributed in the past decade, known plant material of numerous kinds and varieties of fruits throughout the State, the orchards from which now yield reliable information on zonal preferences.

The object of the survey which was made during the course of the year in 1948-49 was to study the performances of known varieties and kinds of fruits in the various districts and to determine the optimum zones for their commercial cultivation.

The survey included visits to the orchards planted to material supplied by Government fruit nurseries and also to private orchards planted to material obtained from private nurseries. The particulars gathered could not be made exhaustive since most of the orchards were in the pre-bearing age. Moreover, due to lack of interest on the part of fruit growers amounting in many cases to gross neglect, as well as due to defective orchard practices the regional preferences of varieties could not be gauged as well as otherwise would have been possible. Nevertheless, the survey helped to bring out some of the out-standing defects in stocking and management of orchards and also yielded information of interest of practical value.

Kinds and varieties: From the enquiries and observations in several orchards of the state, supplemented by the information gathered from the performance at the Government Fruit Stations, it has been possible to draw up a list, showing the several kinds and varieties of fruits which are either promising or adaptable to the various regions in Madras State. The list is furnished in the enclosed statement.

Possibilities for extension: The possibilities for extension under each of the fruits or its varieties will depend not merely on the availability of suitable growing facilities but also on the market preferences. Taking the Madras State as a whole and judging roughly from the degree of dependence on fruit imports as well as on the nature of export trade, it seems possible to lay down a policy indicating broadly the targets for the extension in production of each of our commercial fruits. From a general consideration of the main features of fruit production in the State, a list of the more outstanding varieties and kinds of fruit that deserve special attention in the matter of increased production is presented in the enclosed statement.

Among the more important factors usually mentioned as affecting fruit growing are rainfall, soils, cultural and manurial treatments and pests and diseases. The survey has helped to bring out the role of each of the above factors in successful crop production and how the entire complex of the orchard undergoes a material change by a modification in any one or more of these. A number of instances of variable performances of orchards due to such influences has been recorded but since it is beyond the scope of this paper to deal at length on each of these, the salient features are summarised below :—

Effect of rainfall: From a study of the rainfall data collected in the State, it seems possible to state that mango is one of the most dependable of our commercial fruits, thriving in a rainfall range from about 20" to 150" per annum. Within this range, however, there is a difference in respect of varietal adaptability, varieties like Bennet Alphonso thriving in high rainfall areas while mid and late season varieties such as Baneshan, Bangalora and Neelum etc., being suited to rest of the State. In regard to Citrus, sweet oranges are definitely unsuitable to areas with a rainfall exceeding 100" while lemons are the most adaptable, being found to thrive in all parts of the State right from the sea level up to 6000' above sea level. The lime occupies an intermediate position between sweet orange and lemon being more accomodating than sweet oranges, though under heavy rainfall conditions it seems to show distress more than lemons. Banana is as adaptable as the mango and perhaps even more so, since this fruit thrives all over the State up-to an elevation of about 5,500' provided the sites are well sheltered on the higher elevations. Deciduous fruits like plums, pears and peaches are of commercial importance only at elevations above 5,000'.

Soils: In regard to soil, besides the observations recorded on the basis of rough study on texture of soils up to a depth of six feet in each of six feet in each of the orchards visited pH determinations were also made of soils in 49 orchards, with a view to correlate the tree performances of mainly Sathgudi orange. From the data collected, it appeared that soils which have pH of more than 8, are unsuitable for this fruit. The Citrus is more exactant in its soil requirements, requiring a uniform texture of soil of atleast six feet deep, with a water table, which is always below six feet in all parts of the year. It thrives best in loams preferably red, having a perfect drainage. Symptoms of water stagnation are detrimental for this fruit. Mango is not so specific as that of Citrus, though it exhibits stunted growth in very shallow soils and delayed bearing tendencies in water logged padugai lands of deltaic tract. Grapes have been found to be remunerative in deep, well drained loams and facilities for good drainage are essential in soils of close texture Miscellaneous fruits such as sapota, pomegranate, guava etc., have got a wide range of adoptability and sapota in particular has been found to withstand a certain amount of alkalinity.

Water table: The depth of water table is well known to be an important factor in determining the suitability of any particular site for fruit-growing and particularly so in respect of the Sathgudi orange. From a study of 115 orchards, with reference to depth of water table from the surface during the wettest period of the year, it was found that most of the "failures" of orchards could be attributed to soils with a permanent or fluctuating water table higher than six feet from the surface.

Cultural practices: The cultural practices in the orchard play the most vital role in influencing tree growth and bearing. The survey has emphasised an already well known fact that the existing orchard practices in private groves are, by and large extremely varied and unstandardised. Every aspect of orchard culture seems to be dependent almost entirely on the whims and fancies of the grower rather than on an intelligent understanding of the tree requirements. The aggregate loss from such avoidable mistakes seems to be assuming alarming proportions, recurring and multiplying all the while to the great detriment of the fruit industry. To add to this deplorable state of affairs is the ominous feature of the advice offered by unskilled touring parties of self-styled experts in fruit gardening.

Pest and diseases: Failure to take prompt and proper measures against pests and diseases has also been a known factor in reducing profits. Rational protective measures are conspicuous by their absence and this feature initiates against the usefulness of all the measures that the fruit growers may endeavour to put into practice.

New selections: The survey was also helpful to an extent in indicating some of the uncommon types of fruits which have originated as chance seedlings or as bud sports. Clonal progenies in a limited number of these have been raised in the Government Nursery, Kodur and distributed to different fruit centres in the districts. The following are the new selections made during the survey.

(1) A type of lime with pink flesh of fruit from Anantharajpet village, Cuddapah district.

(2) A type of lemon bearing bell shaped, medium sized fruits with a smooth skin and prolific bearer from Anantharajpet, Cuddapah district.

(3) A type of lime similar to number (1) from Kattamanchi village, Chittoor district.

(4) A pummelo reputed in quality, yielding about 250 fruits, pink fleshed from Hospet Taluk, Bellary Dt.,

(5) A pomegranate tree bearing about 400 fruits a year; pink fleshed of good quality from Yercaud, Salem district.

(6) A mango variety called "Salem Bangalora" of very good quality, mid season cropper and fibreless from Salem taluk, Salem district.

Conclusion: From the consideration of the facts set forth in the report, the following facts seem to deserve attention.

(1) Survey of this type at every five-year interval seem essential to appraise from time to time the changing features in fruit production.

(2) There is an immediate need for providing regularly well-informed technical guidance to the fruit growers, if the existing failures are to be prevented and the huge recurring loss from unsound methods of culture is to be avoided.

(3) Establishment of model orchards in a large number of fruit-growing centres to serve as visual demonstration centres will enhance the value of technical guidance provided by the regional fruit centres.

(4) Regulation and control of private fruit nursery trade is a paramount importance if the orchards are to be stocked with inherently high yielding trees of superior fruit quality.

Acknowledgment: The author's thanks are to Dr. D. C. NAIK, Headquarters Deputy Director of Agriculture (the then Fruit Specialist) for his valuable guidance during the survey and to Sri U. Narasinga Rao, B. Sc., Agri., Fruit Specialist for the help rendered in preparation of this report.

Kinds and Varieties of Fruits Recommended for Different Districts in Madras State.

District	Mango	Citrus	Bananas	Hill Fruits
Vizag	.. <i>Banshan, Chinnaswarnarekha, Cherukurasam</i> and Dondakoyalamma	Sathgudi and Batavian Loose jacket (Agency tracts). Limes. Lemons very successful at Araku	<i>Karpura Chakrakesi</i> , Mauritius, Komarati	
East Godavari	.. <i>Baneshan, Chinnaswarnarekha, Cherukurasam</i> , Pankalu, Kothapalli Kobbari	<i>Batavian</i> and Sathgudi	Thella Chakrakesi, <i>Karpura Chakrakesi</i> and Mauritius	
West Godavari	.. <i>Banshan; Chinnaswarnarekha, Cherukurasam</i> , Pankalu, Kothapalli Kobbari	<i>Batavian</i>	Thella Chakrakesi, <i>Karpura Chakrakesi</i> and Mauritius	
Krishna	.. <i>Baneshan, Cherukurasam</i> . Peddarasam and Kothapalli Kobbari	Limes; Lemons may merit a trial	<i>Mauritius</i>	
Guntur	.. <i>Baneshan, Rumani</i> , Chinnarasam, Peddarasam, Firan-giludwa and <i>Cherukurasam</i>	<i>Batavian</i> and Sathgudi	<i>Poovan</i>	
Nellore	.. <i>Baneshan</i> and <i>Neelum</i>	
Kurnool	.. <i>Baneshan, Rumani</i> , Kalepad, <i>Neelum</i> and <i>Peter</i>	Sathgudi and Mosambique	..	
Bellary	.. <i>Neelum, Peter</i> and <i>Baneshan</i>	..	<i>Poovan</i>	
Anantapur	.. <i>Baneshan, Rumani</i> Swarnarekha, Klador and <i>Neelum</i>	Sathgudi	..	
Cuddapah	.. <i>Klador, Baneshan, Neelum, Rumani</i> , Kalepad, <i>Alampur Baneshan</i> , Swarnarekha and <i>Cherukurasam</i>	<i>Sathgudi, Limes</i> , and lemon varieties	<i>Mauritius</i> , and Monthan	
Chittoor	.. <i>Baneshan, Rumani</i> , Kalepad and <i>Neelum</i>	Sathgudi	..	
Salem	.. <i>Gandu</i> (Alphonso), <i>Nadusalai</i> (Peter), Salem Bangalore, <i>Swarnarekha</i> and <i>Baneshan</i>	Sathgudi; Loose jacket on Yercaud	<i>Rasthali, Mauritius</i> , Monthan; Laden (for hills only)	
Chengleput	.. <i>Baneshan, Neelum, Rumani</i> , <i>Swarnarekha</i> and <i>Peter</i>	

District	Mango	Citrus	Bananas	Hill Fruits
Coimbatore	.. Baneshan, Nadusalai, Gundu and Swarnarekha	Lemon varieties	Poovan, Mauritius and Monthan	
North Arcot	.. Khuder, Peter, Neelum	Sathgudi and limes; Lemons may merit a trial	Mauritius, Poovan and Rasthali	
South Arcot	.. Baneshan and Neelum	..	Mauritius	
Tanjore	.. Rumani, Alphonso, Kalepad, Padiri and Neelum	Limes in Ayyampet area	Poovan, Rasthali, Mauritius and Monthan	
Trichy	.. Alphonso, Peter, Neelum, Rumani, Bancshan	..	Poovan, Rasthali, Mauritius Monthan and Nendran	
Madura	.. Baneshan, Swarnarekha and Neelum	Sathgudi; Loosejacket between 2,000—5,000 Ft.	Poovan, Rasthali, Mauritius and Monthan. Sirumalai and other hill bananas on hill slopes	
Ramnad	.. Baneshan, Rumani, Swarnarekha, Neelum, Panchavarnam	Sathgudi	Mauritius	
Tinnevelly	.. Neelum and Alphonso	Sathgudi; Loose jacket in high elevations Limes; Lemons merit a trial	Mauritius	
Malabar	.. Mundappa, Bennet Alphonso, Olour and Kalopad	Loose jacket in Wynad area only	Nendran and Neyypoovan	
South Kanara	.. Bennet Alphonso, Mundappa and Peiri	Lemon varieties	Nendran, Poovan, Rasthali, and Mauritius	
Nilgris		Loose jacket on the hill slopes and in Nilgiri and Wynad	Laden and Durai Vazhai upto 3,000' elevation	

Above 6,500' :

Plums—Hale, Ahu
Bokhara, Shiro
and Gaviota
Pears—English
pear varieties.
Peaches—Red
Shangei, Shah
Pasand and
Kilikrankie

District	Mango	Citrus	Bananas	Hill Fruits
				<p>Apples — Irish Peach, Signe Tillysh and All- sops Early <i>5,000 to 6,000:</i> Plums — Halo, Alu Bokhara, Shiro, Gaviota, Kelsey and Satsuma Pears—Keiffer Peaches — Red Shanghai, Sheh Pasand and Killikrankie Apples — Irish Peach, Rome Beauty and All- sop's Early <i>3,000 to 5,000:</i> Pear—Keiffer Avo- cado, Litchi, Passion Fruit, Tree tomato, cape goosberry, jack and Man- darins <i>1,200 to 3,000:</i> Mandarins, Pum- melo, Annona sp, Litchi, Jak and Avocado</p>

N. E.— The varieties in italic type are to be specially adopted for extended production.