https://doi.org/10.29321/MAJ.10.A04738

Nagari Oranges—Their past and present.*

By A. MUHAMMAD ALI, B. Sc. (Ag.),
Agricultural Demonstrator, Puttur.

Introduction. *Nagaram* and *nagari* orange, are other names for the *sathugudi* or the *chinee* orange. These names are derived from its original home—Karvetnagar town, popularly known as "Nagaram", the capital of the Karvetnagar zamindari. The famous *Khasa* (private) garden of the Rajah of Karvetnagar, was once reputed in the whole of the central districts, for the finest quality of *chinee* fruits it produced. All the trees, found in the original Karvetnagar zamindari, now comprising the revenue taluks of Tirutani and Puttur of the Chittoor district, are the descendants of those in the *khasa* garden. It is possible, that the *chinee* oranges found in the rest of the Chittoor district and the adjoining districts of Cuddapah and North Arcot, also claim their descent from the reputed original stock in the *Khasa* orchard. With the decline of the zamindari the *khasa* garden too gradually disappeared, and to-day not even a single *chinee* tree remains there to commemorate the origin, spread and history of the famous *sathugudi* orange of the Ceded districts. No record is also available to establish clearly, as to from where and how, this orange, first found its way to the *Khasa* garden. One theory has it, that, the fruit was first introduced into Palacole in N. Circars by the Dutch settlers and from there a few trees might have been introduced into Karvetnagar, by an enterprising zamindar.

Even after the disappearance of the *Khasa* garden, the Karvetnagar *chinee* fruits continued to enjoy a reputation for quality in the South Indian markets and they used to be sold at a premium in the Madras city. Inspite of this encouragement, paradoxically enough, the area under this has gradually declined in and around Karvetnagar town during the last few years. In this note an attempt is made to summarise the several uneconomic and bad orchard practices, which are believed to have been primarily responsible for the present restriction of the area under this fruit, almost to a stage of its wholesale elimination.

Soil. Tempted by good returns in the past, the *ryots* undertook, for a time, to extend the area under *chinee* cultivation in all kinds of soil with disastrous consequences for themselves and to the future of the *sathugudi* industry itself in this tract. In places where the soils were shallow with a hard subsoil layer, the trees continued their normal growth for about 10 to 15 years. Just when the yield should be normal the hard sub-soil layer began to tell upon the growth of the plant adversely and gradually the trees weakened, diseases like 'the die-back,' 'gummosis' etc. appeared and instead of the anticipated good yield, an unsightly and uneconomic orchard presented itself. In some places, the orchards were established in

* Paper read at the thirtieth College Day and Conference, of the M. A. S. Union, July, 1941.

low-lying lands with a high water table. Here again the result was equally disastrous and disappointing. The planting of the trees in loose soils with poor humus content was yet another defect which brought about the premature ruin of the *chinee* orange industry. In such soil, the growth was very poor, and after sometime the orchard had to be necessarily abandoned or grubbed out to make room for other agricultural crops.

Spacing. Normally orange plants are known to require an optimum spacing of about thirty feet for their full development and profitable performance. Strangely enough, the spacing adopted in most orchards in this tract was not more than eighteen feet, with the result the trees grew tall and lanky, with inadequate room for branch spread and consequent reduction of the bearing area to a considerable extent. In old orchards the roots had to crowd themselves in a limited zone. Thus cramped for space and artificially hindered in growth, the trees naturally declined in vigour and productivity at a very fast pace, becoming a liability to the owners.

Methods of propagation. Propagation by seedlings was the only method adopted in this tract. Whatever might be the care exercised in the selection of the parent tree, the seedling offsprings can never be relied upon to have the same character as the parent. Uneconomic bearing of an amazingly large number of trees and periodic crop failures are attributed to this method of propagation by seed. It is natural, therefore, that the interest of the grower very soon faded when most of his trees failed to produce profitable crops resulting in an increasing number of neglected orchards.

Orchard practices. Cultural: In the successful farming of fruits, careful cultural and pruning practices play a very important role. But the Nagaram grower of *sathugudi* rarely recognises or understands these essential principles. After the trees are planted they are left to themselves, except for an occasional ploughing to clear weeds during the flowering season and some irregular irrigation. Rank weed growth, in most orchards, shows that even the necessity for the removal of these do not engage the serious attention of the ryots.

Pruning. The trees are seldom pruned, and the presence of a mass of dead wood on the trees is a common sight in the majority of orchards. The neglect to prune off dead-wood in time often results in poor new growth and death of a greater number of twigs and the consequent lowering of yields. Too many orchards have been ruined by this neglect to attend to the needs of the trees in good time.

Root pruning. Root pruning is another injurious practice, that has brought ruin to a number of ryots. In a normal, but a shy bearing plantation root pruning usually forces yield for the first time. Encouraged by such visual results obtained in the first instance, the practice of root-pruning, was widely adopted, as an annual orchard practice, with the result that the yield was gradually reduced to practically nothing. The worst effect of this evil practice was very markedly felt in the case of one ryot in the Tirumandriyam

village of the Puttur taluk. Innocently falling a victim to an evil advice, he resorted to root pruning. Very soon, his trees became affected in a severe form by gummosis and the die-back diseases, and his orchard of 50 trees presented such a bad appearance that in 1938 he resolved to cut them down and release the area for agricultural purposes. Just then, the Agricultural Department came to his aid and by a carefully planned programme of treatment, the diseases were brought under control and gradually the yield too increased. In the year 1940 he was offered Rs. 600 for his crop. Unfortunately, with the gradual increase in yields, he forgot the previous history of his plantation or failed to realise adequately the harmful effects of his forcing methods for increasing fruit crop. During August last he once again resorted to root pruning. He dug deep round the plants, removed earth, dumped in green leaves and other nitrogenous manures and covered them with earth. In a few days, the good looking trees suddenly turned pale, immature fruits began to fall and his entire orchard relapsed to its original miserable condition. The flowering was practically nil in January last and today, he has become a wiser man and has learnt fully the evil effects of root pruning, though at the expense of his trees.

Irrigation. Most of the gardeners do not seem to know the proper method of irrigating the trees. They form small shallow basins round the trees and irrigate them sparingly but rather constantly. And the bulk of the space between the plants, where tender functioning roots are present, is left unirrigated. So much so, the plant growth is very much restricted for want of adequate quantity of water and the yield is reduced. Further, owing to the water constantly touching the stem diseases of the bark have appeared.

Another common defect observed is the abnormal postponement of the first irrigation for the year. Normally, the *chinee* trees flower in the last week of January. If proper *angam* (local) flowering is to be ensured it is necessary that the orchard should be given the first irrigation almost at that time. Unfortunately, this is seldom done. It is not uncommon to find the trees being irrigated as late as the end of February. Once the timely irrigation is not given the vegetative and the flower bud formation get impeded and the result is poor flowering. This phenomena is very commonly observed in this tract, due to the failure to irrigate the plants in time.

Manuring. Except sheep penning, no other manure is applied to the *chinee* trees. As a result of inadequate manuring, growth is diminished and the number and the size of fruits are found to be rather small.

Delayed harvest. With a view to secure high prices, the ryots have a tendency to delay the harvest. In most cases, picking is postponed to even as late as, the beginning of January. When the crop is kept on for long, the period of rest that is so very essential is either lost or minimised. Consequently the flowering in the next season is reduced. In their eagerness to obtain the best price for the crop the ryots forget the natural repercussions on the tree due to this delay and thereby help for a progressive deterioration in tree yields.

Diseases. The gardeners do not seem to have sufficiently understood the evil effects of gummosis It is a common sight to see trees die suddenly in the orchards. When the gum exudation commences, they ignore its appearance and it is only when the whole bark has been separated and the plant is dead, that the gardeners are attracted. 'Die-back' is another serious disease, which levies a heavy toll in Nagaram town. No precautions or remedies are being taken to keep this scourge within bounds or to root it out.

One ryot, a fairly important orange grower of the Keelampakkam village, who owns a garden of nearly 500 trees practised a very novel method in December 1940. He flooded the whole garden, ploughed it in puddle, spread indigo leaves, trampled them in and allowed the garden to dry up. At the end of February he commenced irrigation, with high hopes of getting a bumper crop. To his great distress neither there was adequate fresh growth nor flowering. In a few months, dead wood appeared and every tree was badly affected by gummosis and die-back. Having spoilt the condition of his trees he sought the help of the Agricultural Department when it was explained to him that his ploughing in puddle and trampling in of the green leaves, had not only disturbed the roots but had badly pruned them. Further the soil too had become hard. Hence the appearance of the diseases.

The General impressions in the tract. Owing to the several causes enumerated there are by far a greater number of uneconomic than economic orchards in this tract. A number of gardeners have wasted their fortune on raising, the up keep and the maintenance of orchards till they attained the bearing stage all the while hoping that after 10—12 years the orchard would become a paying proposition. Unfortunately, due to defective orcharding, the result was quite the reverse. Instead of good looking, well shaped, healthy trees, ill shaped, diseased plants presented themselves, and the return was far below their expectations Once the orchard was found to be uneconomic, instead of trying to remedy the defects, the gardeners grew desperate and neglected them. Due to this a belief has been created in this tract, that 'one who goes in for *chinee* cultivation is sure to court ruin.'

Conclusion. As stated in the beginning itself, the idea in presenting this note is to place before the intending *chinee* growers the several major defects observed in the original home of this orange, so that they might guard themselves against practising the same either wittingly or unwittingly. The point naturally arises as to what are the best methods to be adopted if good orchards are to be raised and are to be kept in a profitable condition. Want of space limits the discussion of these obviously important points. For the present the growers are recommended to seek the aid of the nearest officer of the Agricultural Department and follow his advice. The writer is highly grateful to Sri. K. C. Naik, Superintendent Fruit Research Station, Kodur, who gave valuable suggestions and criticisms.