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| 1. Rust. | <i>Hemeleia vestatrix.</i> | March
September | Anamalai
S. Malabar.
Nilgiris |
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Orange coloured spots on the under surface with corresponding brownish patch on the upper surface.

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| 2. Black rot. | <i>Pellicularia</i>
<i>Koleroga</i> | March
September | Anamalai.
Coorg. |
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Leaves covered on the under surface with greyish white membranous film. The leaves turn black get detached and hang suspended by fungus filaments.

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| 3. Sooty mould. | <i>Capnodium.</i> | November. | Malabar. |
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The leaves and twigs are covered over with a dense black crust made up of dark brown hyphae.

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| 4. Pink disease. | <i>Corticium sal-</i>
<i>monicolor.</i> | August | Bangalore. |
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Rose coloured crusts are found on the surface of twigs and stem. The leaves wither but do not drop off. The bark splits and peels off. Greyish white spots with reddish brown margin on the leaves and berries causing them to turn black, shrivel and drop down.

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| 5. Leaf-spot. | <i>Cercospora</i>
<i>coffeicola.</i> | July. | Kotagiri. |
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<https://doi.org/10.29321/MAJ.10.A01370>

A Note on Lemons at Kadayam—Tinnevelly District.

BY T. V. AYYASAMI AYYAR.

The village—Kadayam—is about a mile from the Kilakadayam Railway station. It is famous for the cultivation of lemons. Every year lemons to the value of over Rs. 10,000 are produced here, and also sent as far as Trivandrum in the west and Madras in the north east; it is the lemon of this place that is highly appreciated by consumers. For successful cultivation three important factors are necessary.

1. Rich surface soil with red gravelly sub soil. By rich soil is meant well tilled soil containing plant food.

2. Regular water supply.

3. Application of vegetable compost chiefly “kolingi compost.

SOIL:— Loose fine rich soil with red gravelly sub-soil. In this place there is red gravelly soil; this extends even below 2 feet from surface.

RAISING OF SEEDLINGS:—Small mud pots 9 inches in diameter at the top and 6 to 7 inches diameter at bottom and a foot deep are filled with fine rich soil and seeds are dibbled leaving nearly half an inch between seed and seed and watered. The watering is so regular that the soil never dries and for watering the rose can is used. It takes from 6 to 8 months to get seedlings 6 to 9 inches high and only 25 to 30 good seedlings are available from each pot

TRANSPLANTATION:—In a good rich soil beds 5 feet long and 4 feet broad are formed. These are manured with well decomposed cattle manure, ashes and with any vegetable compost and the seedlings are transplanted. The distance between the seedlings is from 6 to 9 inches. There should not be heavy rain at the time of transplantation and so the transplantation is done between June to August. In these beds the seedlings are allowed to grow to a height of 2 feet to 3 feet which may take from 2 to 3 years. The plants are then thinned $1\frac{1}{2}$ to 2 feet.

The thinned plants are then planted separately in rich soil leaving a space of $1\frac{1}{2}$ to 2 feet between plants and regularly watered so that the soil may be always moist. The transplantation is done here also from June to August. These plants and all the other plants also when they have grown to a height of 4 to 5 feet which may take even 3 years after transplantation are planted out eventually in the garden:

Pits $5' \times 5' \times 5'$ are dug. The distance between pits is nearly 20 feet. The soil that was removed is first thrown into the pit. Then a mixture of red earth, sand, tank silt, and well decomposed cattle manure is put into the pit up to the surface level and the plant which has grown to a height of 4 to 5 feet is planted. The seedlings are regularly watered so that the surface soil may not become hard for want of moisture. Six months after planting, kolingi compost or avaraj,—the former is more efficient,—is applied to the soil all round the seedling. The soil is dug with mammutti and the compost is applied and covered and watered. Then 3 months after the application of the vegetable

compost the droppings of the sheep are applied to the soil round the tree. Even in the first year the trees begin to bear plentifully. A well looked after lemon tree may even fetch up to Rs. 50 per year but this is exceptional. The application of the vegetable compost and the droppings of the sheep is done every year. A tree on an average yields from Rs. 10 to Rs. 30 per year and there are about 1000 lemon trees here. The average sale price of lemons is annas ten per 100.

Kinds :—There are two kinds; one kind possesses a hard rind and the other a smooth skin. The former variety keeps longer, is easier for transportation and is also better in quality than the latter.

*** Vitamins in relation to milk.**

BY M. P. KUNHI KUTTY L. AG.

Recent researches have shown that the diet of the human organism cannot be met entirely by an adequate supply of protein, fat, carbohydrates, inorganic salts and water. It is now established that in addition to these necessary constituents, certain unidentified principles known as accessory food factors must also be present in what is called "deficiency diseases." These accessory food factors are known as Vitamins. Their function seems to be to promote growth and maintain health. From the time of Leibig the great German Chemist, to the time of the discovery of vitamins, it had been established that the nutritive value of food, apart from its digestibility depended on its contents of protein, fat, carbohydrates and mineral salts. This discovery of vitamins has already displaced the theory of calories, which was fondly held by the old scientists. The famous reformers of diet believed that the nourishing value of food was in direct proportion to the amount of heat it generated within our bodies.

It was in 1906 that Professor Hopkins made some experiments which showed that rats could thrive if they were fed only on a well proportioned diet of protein fat and carbohydrates in a pure form. In Nature rats and other animals feed not on chemically purified food, but on all sorts of animal and vegetable

* Paper read at the M. A. S. U. Conference in July 1927