

base or foundation spray. Slight exceptions might be made in the case of varieties known to be susceptible to spray injury, but, if applied at the correct time and possibly a little nearer the delayed dormant stage than the green tip stage, no damage should result. As Bordeaux mixture is known to cause russet if applied later than the green tip stage, subsequent applications should be of lime-sulphur.

For the control of peach leaf-curl, Bordeaux mixture at strength 5/4/50 should be applied just as the buds begin to swell and before any leaves are exposed; otherwise damage might occur. If done thoroughly at this stage, no trouble should be experienced for the balance of the season.

Cultivation and Manuring

Cultivation should begin as soon as weather conditions are favourable and the soil is reasonably dry, the object being to reduce the soil to the tilth necessary for the conservation of moisture throughout the growing season.

Any attempt to cultivate when the soil is too wet will defeat this object and the trees will suffer. Green crops should be ploughed in as soon as possible so that the trees may obtain any benefits from these crops as soon as they start growth in the spring. By good cultivation the land will be thoroughly aerated, soil fertility improved, moisture conserved, and favourable conditions created which will assist the trees in the production of high quality fruit.

Quantities of plant feed are withdrawn from the soil every year by fruit trees, and unless this depletion is replaced by the application of manures and fertilisers the trees must eventually suffer in both growth and bearing capacity. No set manurial programme can be recommended for the whole of the Dominion, as much depends on the different class and nature of soils in the different districts, but generally speaking, a complete fertiliser containing the three elements most necessary—nitrogen, phosphoric acid, and potash—will be found the most beneficial for

both growth and production. The absence of any one of the essential plant foods is usually noticeable in the tree itself. As an example, fruit trees lacking in growth, with small foliage and premature dropping of foliage, points to a deficiency in nitrogen, while lack of colour, scorching of foliage, and weakened but production is usually associated with an insufficient supply of potash.

With the shortage of inorganic fertilisers, attention should be given to the organic fertilisers available. Blood and bone is a safe and reliable fertiliser, containing both nitrogen and phosphoric acid, and the addition of any potash available will provide a complete manure of much value. The addition of any green crops or decaying vegetable matter will provide humus and assist the micro-organisms in their work, as well as improving the texture of the soil and increasing its capacity for heat and the conservation of moisture.

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Citrus Notes

Citrus Rootstocks in New Zealand

THE rootstocks generally used in New Zealand at present are the sweet orange, the rough lemon (citronelle), the trifoliolate orange (*Poncirus trifoliata*), and, to a limited extent, the sour orange. Until the results of definite scientifically controlled experiments on a range of soil types are available, recommendations must be based on general observations.

These indicate that the sweet orange is the safest all round rootstock. It is recommended for sweet orange varieties and New Zealand grapefruit. Its chief weakness appears to be its susceptibility to collar rot. The trifoliolate orange can be recommended for mandarins and for sweet orange varieties if the soil retains moisture during the summer months. In general, trees budded on this stock should be planted closer together, 16 to 18 ft. should be adequate. The quality of fruit on this stock is outstanding.

The rough lemon (citronelle) can still be recommended as the standard stock for lemons, including the hybrid "Meyer" lemon.

The sour orange must at present be classified with "Cleopatra" mandarin and double-worked stocks as worthy of trial, but it is not yet proved commercially.

Throughout the citrus belt in New Zealand there are citrus trees of good

quality, but it is essential that occupiers of properties should be conversant with such particulars in regard

Reminders for the Month

Complete the planting of citrus and shelter trees.

Turn under leguminous or other cover crops.

Apply the spring dressing of manure.

Overhaul the spray equipment.

Harvest sweet orange varieties when mature.

Harvest N.Z. grapefruit for dessert purposes if sufficiently tree-ripened.

to the trees as root stock upon which worked, name of variety, age, soil, and annual crop over a period of at least three or more years.

In order that persons interested may learn to recognise rootstock and variety, the following hints are given. If the tree, especially orange, is very vigorous and upright in its growth, with little or no fruit for its age, and no union is visible, it is probably a seedling. *Poncirus trifoliata* (trifoliolate orange) rootstock is characterised by mottled bark and flanging. Rough lemon (citronelle) stock also exhibits

flanging but no mottling, and sweet orange as a rootstock is generally round and even. If a root is cut and the cut end exposed to the air, it will generally break into foliage, and the characteristic orange, lemon, or trifoliolate appearance will be recognised.

The recognition of varieties presents a greater problem, and will be dealt with in greater detail.

Lemons

Lemons, in order of their preference, under New Zealand conditions, are:—

(1) **Genoa**.—A thornless semi-dwarf tree well furnished with laterals. It is a good cropper all the year round. The fruit is exceptionally uniform in shape, being oblong and pointed at both ends, with very small pith and 7 to 10 regular sections.

(2) **Villa Franca**.—This variety has the advantage of being an early bearer and also of bearing its main crop in summer. Its branches are shorter jointed and less drooping than those of Eureka, and the tree is thus better suited to exposed conditions. The fruit has a pointed apex and rounded base. There are 11 well-defined and regular sections, and there are generally more seeds present.

(3) **Lisbon**.—A thorny tree of the short-thorned strain, vigorous grower, well furnished with fruiting laterals