

Citrus Notes.

Sowing Down the Cover Crop.

IF the 3 per cent. summer oil has not yet been applied to citrus trees it should be done as soon as possible, as March is the last month of the current season for a thorough application of oil sprays to control scale insects.

The pruning of lemon-trees should be carried out before the onset of the colder months. By experience with "bare poled" trees it has been noted that the best months for pruning are from November to March, and now that the trees are practically clear of heavy crops a suitable opportunity for pruning is provided. At whatever time of the year pruning is done on a lemon-tree some fruit must be sacrificed, but a well-pruned tree will carry a better crop of rub-free fruits.

In view of the winds experienced in all citrus districts it is extremely difficult to shelter an orchard adequately. This can be overcome to some extent if the leaders and laterals in a tree are well spaced, the vigorous upright "sucker" branches in the centre of the tree removed, and the long, slender, lateral branches cut back to stronger wood which is capable of carrying a crop without its being blown around by every wind or weighed down and swept along the surface of the ground.

Adequate Pruning.

Too much stress cannot be laid upon the necessity for adequate pruning. If New Zealand grapefruit or sweet-orange trees are inclined to bear small fruit pruning at this time of the year, if not too

drastic, will prove beneficial. Few growers neglect manuring, but many neglect pruning.

During the next few weeks citrus orchardists should endeavour to sow down the "green manure" or cover crop. In young orchards the blue lupin is an extremely useful crop for regular use each winter until the citrus trees come into bearing. This is one of the best soil-bearing crops, and is vital in the young orchard. Sow at the rate of 2 bushels to 2½ bushels per acre and 4 cwt. to 5 cwt. superphosphate per acre.

In some districts the soil appears to become lupin-sick and it is necessary to turn to some other cover crop. This is also the position when trees begin cropping heavily, as it is difficult to pick the crops from June to August when a good stand of lupins is in the orchard. It is sound practice to sow alternate lands one year and the bare lands the following year. By this method pickers and implements can work between the trees without adversely affecting the green-manure crop.

An alternative method is to sow a green-manure crop which does not grow to any height and which is not much affected by the monthly picking operations. Such crops are Austrian winter peas, vetches, red clover, and *Lotus angustissimus*. The last two are equally suitable as permanent cover crops. When small seed is used it is best to mix it with the superphosphate before broadcasting. Whatever green-manuring crop is chosen, February-March is the period

for sowing down. Sow at approximately the same rate as lupins for the peas, and at 10 lb. per acre for *Lotus angustissimus* or red clover.

Permanent Sward.

Some of the leading citrus-growers, especially on the lighter soils or on slopes, are putting their citrus groves down in permanent sward. This is to be recommended if a leguminous crop is sown down and kept cut during the summer months whenever dry conditions set in during any season. Humus or organic matter is essential to the successful growing of citrus fruits, and the sowing-down of a permanent crop can be safely recommended in established groves, especially when trees are of such a size as to impede cultivation implements. If such "cover crop" be kept cut and the trees mulched the tilth of the soil will be improved.

Soil-erosion will be reduced and the nitrogen content in the soil will be built up instead of being depleted.

It is well to remember, however, that the above is not a recommendation towards rank weed-growth in an orchard. Weed-growth during the winter months is better than clean cultivation, but weeds generally induce nitrogen starvation in the trees. Whatever method is adopted by a grower, the aim must be the improvement of the tilth of the citrus-orchard soils, and this can best be done by a leguminous cover crop in some form or other.

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Viticulture.

Phylloxera-resistant Stocks.

(Continued from December issue.)

The Solonis.

THE Solonis or Novo-Mexicana, according to Viala, is a natural hybrid Riparia-Candicans. Millardet thinks its origin is more complicated and that Riparia, Candicans, and Rupestris composed its make up.

It is found along the banks of the Red River, a tributary of the Mississippi, in the north-west of Texas and in New Mexico in regions belonging to the cretaceous formation. It is also found

in Colorado. Along the Red River it grows in very rich, red, sandy soil—very often wet and always damp. In the Panhandle of Texas, quoting Viala and Pechoutre, the soils in which the Solonis grow vigorously are dark to blackish-red and fine and sandy, with numerous flakes of mica distributed through it. The subsoil is formed of flaked yellow clay. The Solonis under these soil conditions develops a very vigorous growth and thick trunk.

The Solonis played a very important role in the reconstitution of the French vineyards during the first periods of the phylloxera crisis. Its vigorous growth and relative resistance to chlorosis in calcareous soils, combined with its tendency to root and take grafts easily and its affinity for vinefera (European sorts), led to its being adopted in many of the vineyards.

After a time it was found that the Solonis was not sufficiently resistant to