

A common cause of unnecessarily and regrettably poor results in pasture establishment is the sowing of the seed at too late a date in the fall of the year. March sowings widely are to be recommended.

—*R. P. Connell, Fields Division, Palmerston North.*

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## THE ORCHARD.

### Spraying.

FOR the control of codling moth and leaf-roller caterpillar in mid-season and late varieties of fruit, it still is necessary in many localities to continue spraying with arsenate of lead, at the rate of  $1\frac{1}{2}$  lb. to 100 gallons of water. All codling-infected fruits should be picked and destroyed regularly.

At this period of the year conditions are frequently favourable for the development of black-spot, and, therefore, a careful watch should be kept in clean orchards to detect the first indications of the appearance of this disease. In some localities this late infection often appears between the middle of February and the third week in March. Apply lime-sulphur (polysulphide content 15 per cent.) 1-180. When red mite or apple-leaf hopper are in evidence add nicotine sulphate 40 per cent., 1-800, or spray with summer-oil (1-80) two applications. An interval of from seven to ten days between the applications is desirable. At least fourteen days should be allowed to elapse before applying summer-oil following a sulphur spray.

Stone-fruit affected with any fungous disease should be sprayed, as soon as the fruit is gathered, with Bordeaux mixture 3-4-50. Brown-rot-infected fruit should not be allowed to be about the ground, but should be gathered and destroyed.

### Drainage.

As opportunity offers, the drainage of heavy retentive soils should be attended to, as badly drained soil is not profitable orchard land. In well-drained land the soil is more congenial for the roots of the trees in the spring and during wet seasons than is the case in wet cold undrained land. Where drainage is necessary, it should not be put off for another year, but should be attended to as soon as possible.

Drainage allows the land to be worked earlier in the spring, makes it easier to work down to a fine tilth, and also prevents the souring of the soil. Tile drains, though more expensive, are the most permanent type of drain and give the best results in the orchard. The diameter of tiles for main drains should be at least 4 in. Soft boggy places in an orchard are often caused through seepage of water from a higher level, and in such cases a cross-drain located above the orchard and of sufficient depth usually cuts off the seepage water. After draining the land it should be well limed in the autumn or early winter. Existing open drains should be cleaned out, and the outlets to pipe-drains cleared so as to let the water pass freely away. Broken pipes should be replaced with new ones.

### Budding.

Budding may still be practised on trees in which the sap is flowing freely.

### Harvesting.

Mid-season varieties of stone and pip fruits are at or are nearing the stage of maturity when they are in a fit condition for picking for the respective markets or for storage. Picking and handling of fruit is a phase of orchard-work which requires much skill. The percentage of loss and wastage due to bruises and skin punctures caused at picking and in the subsequent handlings is much greater than it should be, and is striking evidence of the need of greater care in handling the fruit. A fact that should not be lost sight of is that the product of the year's work is being handled. A satisfactory realization is largely dependent on the condition in which