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Suberisation of cut potatao setts

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Note the poor germination from freshly-cut setts (right foreground) compared with the even growth of the suberised setts

SUBERISATION OF CUT POTATO SETTS

By Officers of the Vegetable Section

WHEN freshly-cut potato setts are planted out, the cut surface often comes into contact with soil-borne organisms, some of which tend to induce rotting of the setts, and a consequent poor germination. These rotting organisms are especially numerous in ground which is used for growing potatoes year after year.

It is possible, by certain established practices, to induce the development of a protective layer of cork cells over the exposed cut surface, which will form an effective barrier against decay organisms. The healing of the cut surface is called callousing or suberisation—the name being derived from the exudate of the cut potato surface called suberin. This chemical under moist conditions makes a continuous layer over the surface, which on drying forms a protective cover.

Under favourable conditions of temperature and moisture, this process of callousing can take place in the soil after planting. However, in many cases, soil conditions at the time of planting, particularly during summer are conducive to

the build up of decay organisms and rotting may take place before callousing can be effected. The recommended method for inducing suberisation is to place the freshly cut setts into wet bags for 24 to 48 hours.

The importance of this protective layer on the cut surfaces of potato setts has been demonstrated in a trial carried out by Mr. G. P. Ayres, a potato grower at Bornholm.

Comparison was made between a plot of potatoes planted with freshly cut setts, and another plot planted with setts that were kept under wet bags for four days prior to planting.

The latter treatment resulted in 94 per cent. of the setts germinating, and pro-

ducing an even, strong and vigorous stand, whereas freshly cut and planted setts gave an uneven stand with 43 per cent. of the plants missing. The difference can be clearly seen in the accompanying photograph.

Examination disclosed that the "misses" were due to rotting of the setts.

Although not tested in the trial, from experimental work carried out, it could

safely be assumed that the use of zinc oxide would have further improved this better germination. Zinc oxide has fungicidal properties and its use in conjunction with the wet bag treatment is recommended by the Department of Agriculture. The chemical is used as an instantaneous dip and the solution is prepared by adding zinc oxide to water at the rate of 5 oz. to the gallon.

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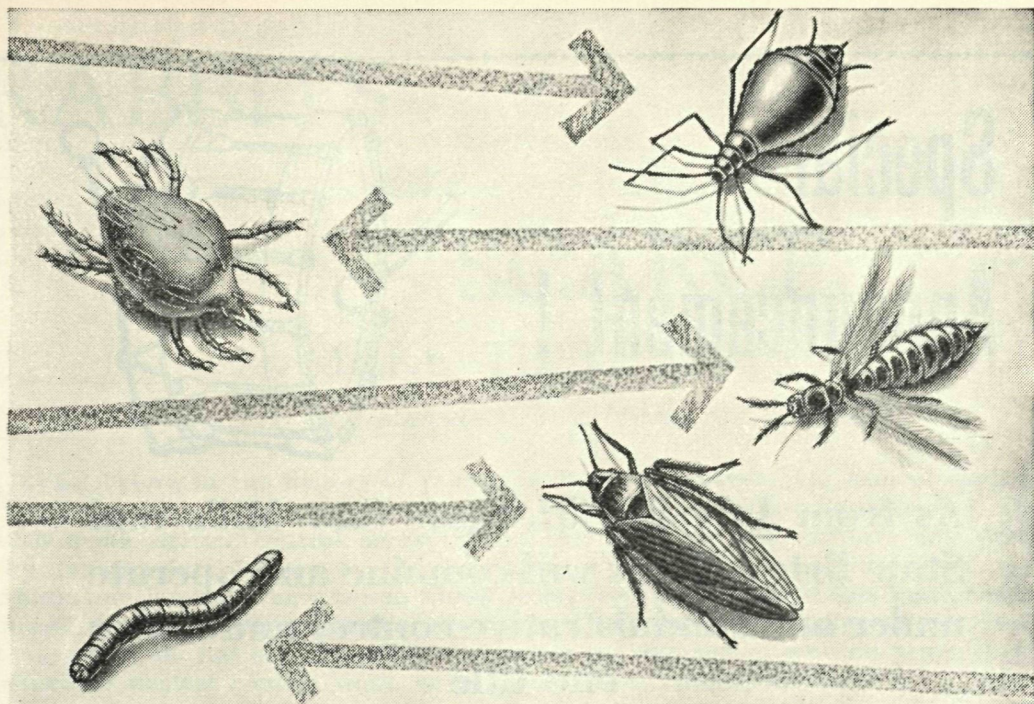
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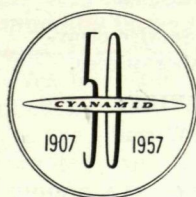
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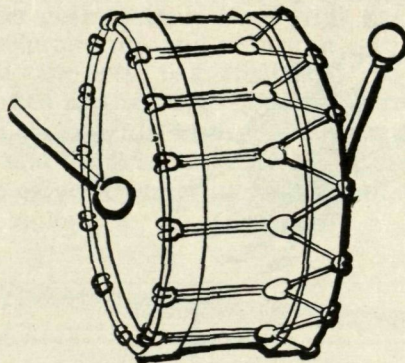
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