

EFFECT OF FERTILIZERS ON COLD-STORAGE QUALITY OF APPLES

The data were generally consistent with previous results obtained in a year of heavy crop. Nitrogenous fertilizer was responsible for a rise in breakdown and some reduction in wilt, unless balanced by phosphate and potash. With Dunn's Favourite and Jonathan, however, the differences are not as great as in a light-crop year. The storage quality of Delicious was again little affected by manurial treatment.

COLD-STORAGE QUALITY OF COLOURED STRAINS OF APPLES

A high-coloured strain of Cox's Orange, one of Jonathan, and two or three of Delicious were at least equal to the standard types in storage quality, but the other red strains were distinctly inferior.

EFFECT OF ROOTSTOCK ON COLD-STORAGE QUALITY

Some variation in storage quality from tree to tree made assessment of the results difficult in some instances. It was clear, however, that the storage of Delicious is still unaffected by rootstock influence, that M I rootstock is rather better than M XII, M XV, or Northern Spy for Granny Smith, and very much better for Cox's Orange. M XII was the best stock for Jonathan.

FRUIT RESEARCH

Officer in Charge: Mr. L. W. TILLER

The new research orchard at Earnsclough, Central Otago, is now in course of development, and the Plant Diseases Division is collaborating with the Auckland Industrial Development Laboratories, the Dominion Physical Laboratory, and the Meteorological Office on the frost-control project.

At the Appleby Research Orchard an additional area of about 8 acres is being brought under cultivation for subsequent planting to provide much-needed material for spray, rootstock, variety, and pruning investigations.

RESEARCH ORCHARD, APPLEBY

(a) *Manurial Investigations*.—On all varieties of apples under test—viz., Cox's Orange, Dunn's Favourite, Jonathan, Delicious, and Sturmer—the initial importance of nitrogenous fertilizer and the still greater significance of the necessity for phosphate and potash in addition have again been strikingly demonstrated. Many trees in plots receiving unbalanced manuring are showing symptoms of ill health in varying degrees, and a Sturmer tree in an unmanured plot has died from general debility and final attack by the silver-leaf fungus.

(b) *Rootstock Trials*.—With the varieties Jonathan, Red Delicious, and Granny Smith, the rootstock M XII has given the maximum growth, and M XV is only a little inferior. With Cox's Orange, M XV is slightly in advance of M XII in growth. Northern Spy occupies an intermediate position throughout, and M I is characteristically semi-dwarfing. In yield, Northern Spy stock is still in the lead, except with Jonathan, on which M XII is maintaining its superiority.

(c) *Varietal Trials*.—Observations have continued on a large number of hybrid varieties and strains of standard varieties. One or two of those that have already fruited show some merit, but no accurate assessment can be made till all trees are in regular bearing. The Plant Chemistry Laboratory has examined the vitamin C content of some of these fruits, and one or two are moderately good, although most of the others are fairly low.

(d) *Spraying Trials*.—These form part of the fruit work of the Plant Diseases Division.