

LEMON-CURING.

Since the commencement of this work at the Dominion Laboratory a total of four curing-runs has been performed in the air-conditioned cabinets erected for the purpose, and a large number of variations in conditioning have been investigated. This has involved the examination and individual measurement of some six thousand lemons and well over one hundred comprehensive analyses of representative parcels of fruit.

As a result of these experiments a wider understanding of the mechanism of curing has been attained, some excellent fruit has been turned out, and tentative optimal conditions of curing have been established.

The investigations have brought clearly to light, however, the necessity for very considerable improvement at the production end. Particularly is this so in regard to reduction of spore loading on the fruit during the growing, harvesting, and pre-curing period. If the fruit is not reasonably free from potential sources of infection it is not possible to accord it optimum curing conditions without risking high incidence of fungous disease.

UNFERMENTED FRUIT JUICE.

Widespread interest has been aroused among the fruitgrowers of New Zealand as a result of the extensive developments in the manufacture of unfermented fruit juices on the Continent and its introduction into England. The product would appear to offer a valuable and profitable outlet for low-grade fruits for which there is at present no economic market.

In co-operation with a commercial manufacturer of this type of juice in New Zealand it has been possible for the Department of Scientific and Industrial Research to initiate a series of tests to determine the suitability of various methods of manufacture for New Zealand apple varieties. Six of the main varieties are being processed, and six different modifications of the process are being tried with each variety.

FRUIT COLD STORAGE.

Fruit Cold-storage Committee.—Messrs. J. A. Campbell (Chairman), H. G. Apsey, W. Benzie, F. R. Callaghan, J. T. Cross, W. K. Dallas, F. W. Grainger, J. L. Mandeno, Sir Theodore Rigg, A. M. Robertson, H. E. Stephens, L. W. Tiller, and H. C. Heays (Acting Secretary). Also, Mr. R. Sutherland rendered valuable service as a member of this Committee up to the day of his untimely death in December, 1937.

The Committee appreciatively acknowledges the helpful co-operation of and services rendered by both Dr. A. J. M. Smith, of the Cambridge Low Temperature Research Station, and Mr. N. L. Wright, the Scientific Liaison Officer in England; the overseas and the local shipping companies, including their officers and engineers; the New Zealand Fruit-export Control Board; the Fruitgrowers' Federation; the Horticulture Division of the Department of Agriculture; the Wellington Harbour Board; and the managing directors of certain cool-stores. Mr. L. W. Tiller, Fruit Research Officer, is worthy of special mention not only for the work he achieved while in England, but also for the comprehensive and informative reports which he has officially submitted since his return to New Zealand.

INFORMATION FROM ABROAD.

As is usual, valuable information received from abroad regarding the handling, storage, and transport of food has from time to time been made available by the Department and has been most helpful to individual members of the Advisory Committee for their work in general.

EXPERIMENTAL GAS-STORE.

The small three-chamber experimental refrigerated gas-store, built early in 1937 adjacent to the Dominion Laboratory, has been operating throughout the year 1937-38 and has functioned splendidly. In the interests of fruit and vegetable storage research this store will, for an indefinite period, be carrying "all that it can hold," but the restricted capacity, to some extent, is likely to retard progress and limit the scope of the experimental work.

EXPERIMENTAL CONSIGNMENTS TO ENGLAND IN THE 1937 SEASON.

- (1) *The Influence of Position on Tree on Incidence of Storage Disorders in Cox's Orange Pippins.*

Fruit was taken from two contrasting positions on the tree, one being fully exposed to sunlight and the other well shaded, and two pickings were made. Pit was practically the only form of wastage showing in the fruit on arrival in London, and this increased appreciably during the three weeks following discharge, while a considerable amount of breakdown and some fungus developed in fruit of the second picking. Conclusions are briefly as follows:—

- (a) In both shipments pit was very much more severe in shaded fruits. This conflicts with the results of the previous two years' overseas experiments and with the findings of Long Ashton Research Station, but is in accord with an experiment carried out by the Research Orchard, Appleby, in 1935.
- (b) Pit-development was less severe in the second picking than in the first.