

of the car, 38 degrees F. By using the 5 per cent of salt mixture a temperature of 25 degrees F. was secured near the tanks, and 32 degrees F. in the centre of the car. While the 5 per cent mixture seemed to give a temperature too low for fruit, it should be kept in mind that the tests were made in the middle of April when the outside temperature ranges from 40 degrees F. to 65 degrees F. With ten tons of warm fruit in the car and an outside temperature of from 60 degrees F. to 90 degrees F. this low temperature would not be obtained (fig. 1).

Following up this work in the summer of 1914 with a shipment of fruit from Summerland to Vancouver, B.C., a brine tank car was used with slatted floors and with 5 per cent of salt incorporated with crushed ice in the tanks. The shipment arrived in Vancouver in good condition. The temperatures were low and there was no evidence of freezing.

DEMONSTRATIONS WITH BRINE TANK CARS IN 1915.

With the co-operation of the Canadian Pacific and the Grand Trunk railways, arrangements were made to use brine tank refrigerators for two cars of fruit that were purchased for experimental shipment from Grimsby to Winnipeg during the past season, in order to carry the work further, using the salt mixture with pre-cooled fruit.

Crushed ice with 5 per cent of salt was placed in the tanks of the cars. The fruit was pre-cooled to 40° F. and 45° F. As is the customary practice at the pre-cooling plant with all shipments of pre-cooled fruits slatted false floors were placed in the cars. A thermograph was placed on the floor against the ice tanks to record the lowest temperatures during transit and one was placed on top of the load of fruit in the centre of the car to record the highest temperature to which the fruit would be exposed while in the car. The fruit was loaded and braced in the usual manner and the doors sealed with sulphite paper. On September 20, car No. 284024 C.P. (fig. 2) was shipped to Winnipeg, requiring four and one-half days to reach its destination. On September 23, car No. 340053 G.T.P. (fig. 3) was shipped to the same point requiring approximately five days to reach its destination. Block ice without salt was used for re-icing during transit.

Mr. A. H. Flaek, Chief Fruit Inspector for the prairie provinces, inspected the shipments and reported that they arrived there in perfect condition. No injury whatever was to be seen from low temperatures and the highest temperature was as low as is ordinarily secured in refrigerator shipments. Copies of the thermograph records are herewith shown, with the exception of that from the instrument on the floor near the bunkers of the car No. 284024 C.P. which failed to record.

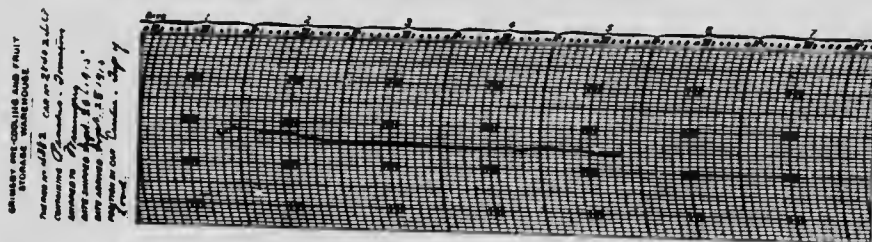


FIG. 2.—Thermograph record. Temperature record, top of load of fruit, centre of car No. C.P. 284024.

Conclusions.

When using block ice without salt in brine tank cars, the fruit growers have just cause for complaint on account of high temperatures.

The use of 5 per cent of salt with crushed ice for the initial icing in conjunction with slatted false floors improved the temperature conditions in brine tank cars.