

THE USE OF BRINE TANK REFRIGERATOR CARS FOR FRUIT SHIPMENTS

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Growers and shippers of fruits and vegetables have strongly objected to the brine tank refrigerator car for the shipment of their products. Their objections are fairly based upon unsatisfactory experiences and heavy losses incurred owing to high temperatures in shipments made with this type of refrigerator car. The railways of Canada have found this car admirable for shipping such perishable produce as poultry, meats and dairy products that require low temperatures, and, as the shipping of fruits covers only a portion of the year, and a dual purpose car has been required, they have favored its adoption. With shippers and consignees ruling against, and often refusing to accept these cars for shipment, and the railways increasing their supply, a problem has been presented to the Department of Agriculture which has resolved itself into the work of making the brine tank refrigerator car efficient for the shipment of fruits and vegetables. Since the season of 1913, when the investigational work was started, great progress has been made toward this end, so that at the present time many very satisfactory shipments of tender fruits are being made in brine tank cars, and shippers who understand the proper methods of using them are accepting them for such shipments without complaint.

In using the brine tank refrigerator car for shipments of dressed meats or poultry, it has been customary to use from 10 per cent to 20 per cent of crushed rock salt mixed with the ice. This melts the ice rapidly, removing the heat from the interior of the car and causing temperatures to fall below freezing. By the continued use of salt in re-icing, freezing temperatures are maintained in the car during transit even in hot weather. When fruit shipments were undertaken in these cars, the use of salt was omitted, through the supposed danger of freezing, the ice being put in the tanks in block form. Similar to the method of icing the bunker or block-ice type of car. Herein lies the cause which has led to the unpopularity of brine tank cars among fruit shippers.

When the ice is placed in the tanks in large blocks, melting takes place very slowly, because it is in a separate compartment, completely shut off from the hot air that would normally circulate from the warm fruit, melting not taking place until the heat has been transmitted through the iron tanks. It should be more clearly understood that ice has to melt to have its refrigeration made available for the cooling of a refrigerator car in just as real a sense as coal has to burn to make its heat available. The result of such methods of icing the brine tank car gave very high temperatures with a consequent deterioration of the fruit. Thermographs placed in brine tank cars iced in this way show that the temperature seldom goes below 50° F. The thermograph record shown below is a fair sample of such shipments. This shipment was made

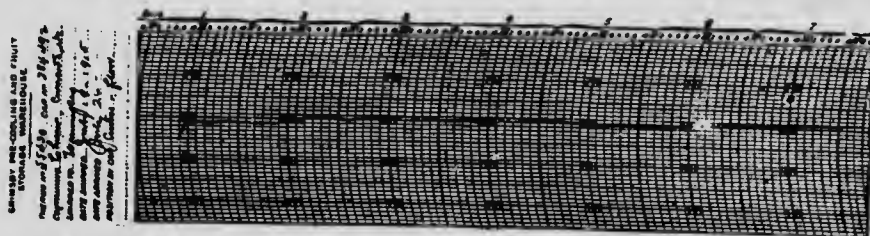


Fig. 1. Temperature in a brine tank car, in which no salt was used. Car No. 284,492 C.P.
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