

Distribution

Transportation

Modes of transport used to move fresh horticultural produce from farm to market include trucks, planes, trains and ships. Trucks carry the major proportion of fruits and vegetables in New Zealand. Air transport is mainly used for sending highly perishable and valuable products (e.g. berries and tropical fruits) to faraway markets, or to supply small amounts during periods of high prices and strong demand.

Temperature Control

As noted previously (refer TIS 9) low temperature storage is important for delaying deterioration of horticultural produce. Therefore refrigerated containers on trucks, trains and ships are often used to transport fruits and vegetables. To be effective, air in the refrigerated container should be of a uniform low temperature, and should be circulated around and through the packed produce. Loads should also be stacked in such a way as to permit good air circulation. In this way, heat produced by the respiring produce, heat conducted in through the vehicle's outside walls and heat from outside air getting into the container can be absorbed. Air freighted produce is not typically transported in refrigerated containers.

Mixed Loads

Different types of produce are frequently transported together in the same truck or container. They are often housed in packages of different sizes and shapes, which are also often stacked differently. Mixed loads should not be packed too tightly, as this restricts the movement of air around the truck or container, resulting in hot or cold spots. When the products in a mixed load have differing optimum storage temperatures, temperature settings should be chosen to protect the most perishable, or most valuable, product in the load.

In addition, fruits and vegetables that produce large amounts of ethylene (e.g. apples and pears) should not be transported, or stored, with fruits and vegetables that are very sensitive to ethylene (e.g. lettuce and kiwifruit).

Wholesalers and Retailers

Wholesalers and retailers are an important link in the distribution chain which moves fresh produce from grower to consumer. Frequently they handle a large number of different types of fruits and vegetables.

Unfortunately many wholesalers and retailers have only one cool-room and the set temperature is unlikely to provide the best storage conditions for all of the products stored there. Similarly products are often displayed for sale at room temperature for several hours, or even days, resulting in loss of shelf-life. Rough handling of produce can also occur.

Problems in Distribution

Produce from the grower is frequently not of uniform quality. Fruits and vegetables are often immature, overripe or at different levels of maturity, and therefore require extra attention and space.

Transportation problems such as poor temperature management or physical damage in transit add to losses.

Further losses occur at wholesale and retail markets, where facilities are often inadequate for proper product handling, temperature maintenance, control of ethylene concentrations and sanitation. Lack of adequate staff training can add to such problems.

Most of these problems can be alleviated by careful management throughout the distribution chain and well trained staff.