

What changes are prone to occur in the production of quick-frozen fruits and vegetables

Detail Introduction :

At present, convenient quick-frozen foods have entered our lives, especially quick-frozen fruits and vegetables. So do you know what changes have taken place in the production of quick-frozen fruits and vegetables?



1. Collapse of cells.

Vacuoles are cells that contain a lot of water in plant tissues. During the freezing process of quick-frozen fruits and vegetables, it is easy to freeze into large ice crystals, resulting in greater pressure, and cells are easily damaged by rupture. On the other hand, the cell walls of plant tissues are relatively thick and inelastic, and are easily punctured or burst by large ice crystals. Freezing treatment increases the permeability of cell membranes or cell walls to moisture and ions.

2. Mechanical damage.

The first formation of ice crystals is the free water in the intercellular space, which generally contains soluble substances and has a high freezing point. However, the intracellular protoplast remains supercooled and the supercooled water in the cell has a higher vapor pressure and free energy than the ice crystals in the cell, thus prompting the intracellular water to move to the intercellular space and continuously build intercellular space ice nuclei. At the same time, the ice crystals formed in the intercellular space become larger and larger, resulting in mechanical extrusion, causing the separation of the originally combined cells. After thawing, it cannot be restored to its original state, and it cannot absorb the water produced by the melting of ice crystals and flow out the juice, and the tissue becomes soft.