

# Freeze-vacuum-dried varieties processing flow

## Detail Introduction :

1. Selection of raw materials. Leafy vegetables should not exceed 24 hours from harvesting to processing. Yellow and rotten parts are manually selected and graded.
2. Cleaning. Remove soil and other impurities from the surface of vegetables. To remove pesticide residues, it is generally necessary to soak in 1.55%-1% hydrochloric acid solution or 0.05%-0.1% potassium permanganate or 600 mg/kg bleaching powder for several minutes of sterilization, and then rinse with clean water.
3. Peel. Root vegetables should be peeled. Export products generally require manual peeling or mechanical peeling. After peeling, they must be put into clean water or color protectant immediately to prevent browning.
4. Cut to shape. Cut the vegetables into certain shapes (grains, flakes), and the vegetables that are easily oxidized and brown after being cut should be immersed in the color protection solution.
5. Blanching. Generally, hot water is used for blanching, and the water temperature varies with the variety of vegetables, generally above 100 °C; the time varies from a few seconds to a few minutes. When blanching, you can add salt, sugar, organic acid, and other substances to the water to change the color and increase the hardness of the vegetables.
6. Cool down. After blanching, it should be cooled immediately (water-cooled or ice-cold). The shorter the cooling time, the better.
7. Drain. After cooling, some water droplets will remain on the surface of the vegetables, which is not conducive to freezing. Making the frozen vegetable agglomerate is easy, which is not conducive to the subsequent vacuum drying. The method generally adopts centrifugal drying.
8. Freeze. The drained material is quickly frozen, and the freezing temperature is generally below -30 °C for the subsequent vacuum drying.
9. Vacuum dry. The pre-frozen vegetables are put into a vacuum container, and the pressure in the container is reduced to below the triple point using a vacuum system. The heating system supplies heat to the material so that the moisture gradually evaporates.
10. Freeze-dried products should be sorted immediately to remove impurities and other foreign products, accurately weighed according to packaging requirements and put into bags to be sealed.
11. Package. Vacuum-packed in double-layer plastic bags. Due to the oxidative browning of the product, it should be packed with nitrogen and then put into a carton for storage.