

# Comparison of dehydrated and freeze-dried foods

## Detail Introduction :

Many people think of dehydration and freeze-drying as the same thing. Not really; they are very different processes. This article compares the two processes and their effects on food.

**Dehydration process**  
No matter what method of food preservation is used, moisture needs to be removed. Dehydration is a commonly used method. Dehydration has been a way of keeping food fresh for thousands of years, dating back to at least 12,000 BC. The Romans and Middle Eastern people used to put fruits and vegetables in a house, then fire-roasted and smoked them to make dry food.

Modern dehydration technology has made it simple to use machines to circulate hot and cold air through food. This removes most of the moisture. The temperature is controlled enough to remove moisture without wilt and harden the food.

## Freeze drying process

Freeze-drying is a relatively new modern preservation process. However, it should be known that you can freeze-dry at home without high-tech equipment. Some reports say freeze-drying originated in the Inca Empire. But more reliable sources show that freeze-drying was invented during World War II when it was used to preserve blood plasma, medicines, and later army food.

The lyophilization process is relatively simple. Food is placed on large shelves inside the vacuum chamber. The temperature drops below freezing and then gradually increases. Moisture in food is converted from solid form to gas, thus preserving food structure and nutritional value.

## main difference

**Moisture** - The main goal of food preservation is to remove moisture, so food does not spoil and grow mold. Dehydration removes 90-95% of the water, while freeze-drying removes 98-99%. Therefore, the shelf life of freeze-dried foods can be longer.

**Shelf Life** - Moisture removal rate directly affects shelf life. Dehydrated foods such as dried fruits, vegetables, and powders have a shelf life of about 15-20 years; dehydrated foods such as honey, sugar, salt, hard-boiled eggs, and oats have a shelf life of more than 30 years. On the other hand, frozen, dehydrated foods have a longer shelf life than dried fruits and vegetables, lasting 25-30 years.

**Nutrient Facts** — Freeze drying retains most vitamins and minerals, according to a U.S. Institute of Health study. But compared with fresh fruits and vegetables, freeze-dried foods lack some vitamins, such as vitamin C, which breaks down faster. Dehydration does not change dietary fiber or iron content. However, dehydration breaks down vitamins and minerals during preservation, so the nutritional value is not as high as freeze-dried foods. Dehydration can lead to the loss of vitamins A and C, niacin, riboflavin, and thiamine.

**Appearance vs. Structure** - One of the main differences between dehydrated and freeze-dried foods is their appearance and structure. Dehydrated foods are often shriveled and hard, while freeze-dried foods are often plump and soft.

appearance. Dehydrated food will become brittle and hard, while frozen, dehydrated food will become soft and moist. Taste is another difference. Freeze-dried foods are much lighter in weight than dehydrated foods. Weight is another difference. Freeze-dried foods are much lighter in weight than dehydrated foods.

Cooking - Dehydrated foods need to be cooked and eaten. However, only boiled water is required for freeze-dried food. Add hot or cold water and wait at least 5 minutes before eating.

Price - In general, dehydrated foods are cheaper than cold-dried foods. Both freeze-dried and dehydrated foods have pros and cons, and if you're on a tight budget, dehydrated foods are the better option.