

# Research on food frying technology

In recent years, with the rapid development of the food industry, fried foods have been widely involved in children's food, fast food, meat-filled food, frozen food, microwave food and pasta products.

Food frying technology continues to increase, production scale continues to expand, and frying equipment is moving toward factory, serialization and intelligence.

Among them, the typical continuous fryer has evolved from a simple type in the 1980s to a modern intelligent [microwave drying machine](#).

First, [food fried technology](#)

There are many kinds of food frying technology. According to the air pressure during frying, it can be divided into normal pressure frying and vacuum frying. According to the method of frying, it can be divided into continuous frying and intermittent frying.

## 1. Normal pressure fried



Atmospheric frying [1] means that the internal pressure of the fryer is standard atmospheric pressure, which is the most commonly used frying technique. The advantages are that the processing is convenient, the processed product has good brittleness and good flavor, and the disadvantage is that the nutrition and natural color loss are greatly lost during the frying process. Normal temperature frying is more suitable for frying foods such as fried pastries and bread.

## 2. Vacuum frying

The absolute pressure of vacuum frying is lower than atmospheric pressure and is subjected to frying processing in the absence of oxygen. The food processed by this technology can retain the flavor and nutrients of the raw materials to the utmost extent, and effectively prevent the oxidative deterioration of the edible fats and oils. The features of this technology are as follows:

It can reduce the evaporation temperature of water in the material. Compared with atmospheric pressure frying, the heat energy consumption is relatively small, the frying temperature is greatly reduced, and the loss of heat sensitive components such as vitamins in food can be reduced, which is beneficial to maintaining the nutrient content of food and avoiding food. Coking.

It can cause an environment of lack of oxygen, can effectively kill bacteria and some harmful microorganisms, reduce the oxidation rate of materials and frying oil, provide conditions to prevent "browning" of materials, inhibit moldy and bacterial infection of materials, and is beneficial to The product storage period is extended.

At a sufficiently low pressure, the material structure will have a certain bulking effect due to the reduction of external pressure. The vacuum also shortens the time of material impregnation, degassing and dewatering.

By means of the pressure difference, the movement of the material molecules in the material and the gas diffusion are accelerated, thereby improving the speed and uniformity of the material processing.

## 3. Intermittent frying

When the food is fried by this technique, the frying oil is first heated to a specified temperature, and then the material is fed to the frying equipment. After the processing is completed, the product is taken out and new materials to be fried are added. Since the feed of the material is intermittent, it is called intermittent frying technology. The application of this technology is relatively common, and its advantage is that the technical content is relatively low, which is suitable for small-scale production; the disadvantage is that the product causes original heat loss during the feeding process, and takes a long time.

## 4. Continuous frying

When the food is fried by the technique, the feeding of the material is continuous, and after the material is fed into the fryer, the mesh belt moves in the frying oil, and then the processed product is output from the outlet. Due to the products processed by this technology

With consistent frying temperature and time, the product has a constant appearance, flavor, texture and shelf life, as well as a good oil filtration effect, which can reduce the content of fried odor and free fatty acids.