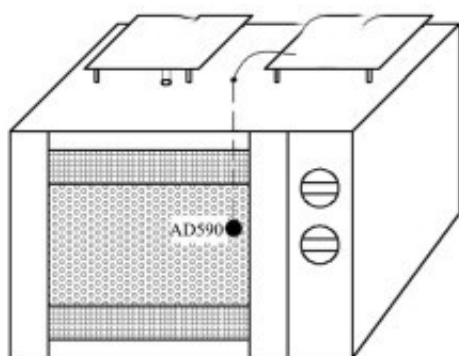


# Effect of Different Combination Drying Methods on the Quality of Juicy Crisps

**Abstract** In order to study the effect of different combination drying methods on the quality of peach chips, [microwave drying equipment](#) was used as the basis and control, and it was combined with hot air, microwave and air flow to compare the drying experiment and quality test.



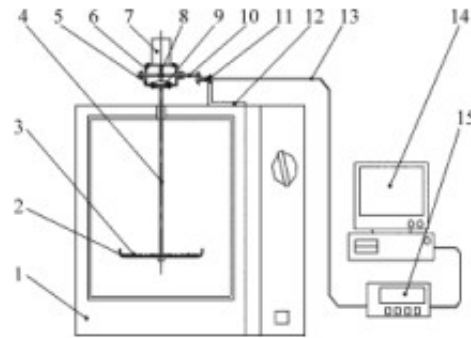
Schematic diagram of microwave drying temperature control system

The results showed that the color change of the freeze-dried-microwave chip samples was the largest, and the comprehensive color difference  $\Delta E$  value was significantly higher than the other three groups (p

The moisture absorption rate of the lyophilized-microwave group was significantly lower than that of the other three groups. The moisture absorption rate of the lyophilized group was the highest; the hardness and brittleness of the lyophilized-microwave group were much higher than those of the other three groups, and the lyophilized group was the smallest; The results of microscopic morphology observation can better reflect the differences in the above qualities of peach chips. Among the 4 groups of peach chips, the freeze-dry-microwave group had the worst comprehensive quality, and the freeze-dried group had the best, while the other two groups had the overall quality in the middle.

**Key words:** [peach microwave drying](#); chip; freeze-drying; combined drying

Peach is a genus of Rosaceae and Prunus. It is native to China and has a long history. The peach juice is rich in tender juice, rich in flavor, sweet and sweet, rich in nutrients, and has health care effects such as skin, stomach, lungs and phlegm. It is known as the “Queen of Fruits” and is well received by the market. welcome. Peach in China is mainly fresh food, but peach is a climacteric high-moisture fruit. It is hot weather during maturity, poor storability after harvest, short shelf life, extremely perishable and deteriorating, and chilling at low temperatures. It is difficult to store fresh-keeping [The process of drying fresh peaches into peach peach chips is an effective way to enrich the processing of peaches and to increase the value of the



processing of peaches.

At present, there are many drying methods for fruit and vegetable applications in production, mainly including hot air drying, vacuum freeze drying, vacuum drying, microwave drying, air flow puffing drying, heat pump drying, etc., wherein vacuum freeze drying technology can better preserve the color and fragrance of fresh materials. It is an internationally recognized method for producing high-quality, high-value-added dehydrated foods, but it has shortcomings such as long drying time, high energy consumption, and high product cost.

In recent years, some scholars have combined freeze drying with hot air, microwave and other drying methods to study the joint drying characteristics and product quality of bamboo shoots, apples, carrots, Taihu silver fish, sea and other fruits and vegetables and aquatic products. The reasonable combination of freeze drying and other drying methods can avoid and reduce the disadvantages of using freeze-dried products, which can shorten the drying time, reduce the process energy consumption and obtain suitable drying quality.

At present, there have been reports on the drying process of peaches. The drying methods involved mainly include differential pressure expansion, far infrared drying, microwave drying, hot air drying, etc., while the combination of freeze drying and other drying methods still affects the quality of peach chips. No reports have been reported. In this study, a typical peach variety was used as the raw material, based on the vacuum freeze-drying method, and combined with hot air, microwave, and air-expansion methods to study the color and shrinkage of different combinations of freeze-drying methods for peach chips. The influence of hygroscopicity, texture and microstructure on the structure, in order to provide a technical basis for the drying and processing of peach chips.