

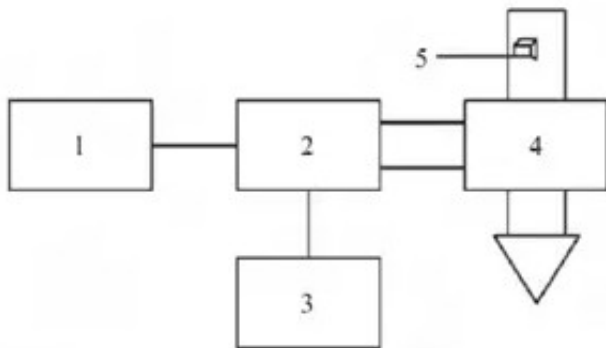
# Research progress on vacuum processing technology of fruit and vegetable chips

Abstract: The characteristics, research progress and process conditions of vacuum processing technology of vacuum frying, variable temperature and pressure expansion, [microwave drying equipment](#) and freeze drying are reviewed.

Analyze and compare the advantages and disadvantages of these kinds of fruit and vegetable vacuum processing methods, and point out the current defects and shortcomings of the fruit and vegetable chip processing industry. Based on this, the countermeasures and suggestions for the research breakthrough of the future fruit and vegetable chip processing industry breakthrough are put forward, which has certain reference value.

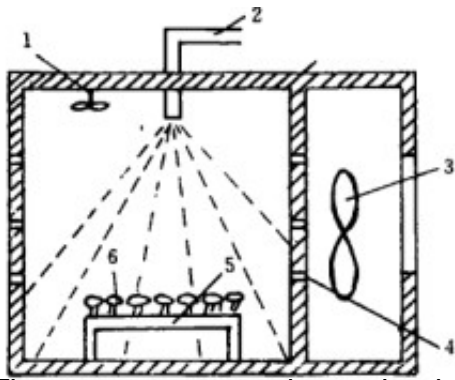
Key words: [fruit and vegetable chips microwave drying](#), vacuum frying, variable temperature differential pressure puffing, vacuum microwave drying, vacuum freeze drying

Fruit and vegetable chips are crispy natural foods made from fruits and vegetables and processed through certain dehydration techniques. Traditional methods for processing fruit and vegetable chips include hot air drying, osmotic dehydration, and frying. It not only causes a large loss of nutrients, but also seriously affects the color and flavor of fruit and vegetable chips.



In recent years, in order to better preserve its nutrients, color and flavor, people have carried out extensive research on the vacuum dehydration processing technology of fruit and vegetable chips. The vacuum processing technology of fruit and vegetable chips mainly includes vacuum frying, vacuum microwave drying, variable temperature differential pressure expansion, vacuum freeze drying and the like.

Fruit and vegetable raw materials undergo different physical and chemical changes during different vacuum drying processes, such as color, texture, puffing rate, flavor and nutrients. Therefore, in order to improve the quality of fruit and vegetable chips, this paper reviews and prospects the research progress of vacuum processing methods for fruit and vegetable chips.



The vacuum processing technology of fruit and vegetable chips has its own advantages and disadvantages, which are suitable for different raw materials and products. At present, there are two common key technical bottlenecks in the vacuum processing technology of fruit and vegetable chips.

First, the versatility of each processing technology is not strong, and the process conditions of different raw materials require targeted optimization research; second, the degree of automation of the processing process is not high, and the labor intensity is large.

At this stage, research hotspots mainly focus on process optimization of various fruit and vegetable raw materials, lack of engineering application research and equipment development of various new technologies and new processes, resulting in slow development of fruit and vegetable chip processing technology. The research hotspots related to the processing of fruit and vegetable chips will focus on the research on the basic characteristics of fruit and vegetable and the development of automated equipment, solve the technical bottlenecks in the processing of fruit and vegetable chips, and make the fruit and vegetable chips industry develop faster and better.