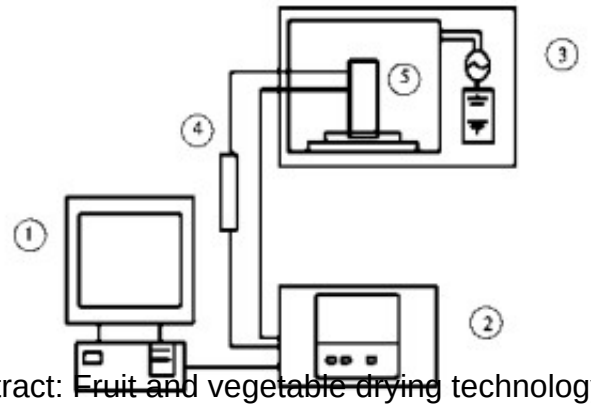
Current status and development prospects of fruit and vegetable drying processing technology in China



Abstract: Fruit and vegetable drying technology is a relatively common deep processing technology for fruits and vegetables. Drying fruits and vegetables with different processing techniques can increase farmers' income, improve farmers' quality of life, and even have a great impact on China's agricultural economy. This paper introduces the existing dry processing technology of fruits and vegetables, such as microwave drying equipment, vacuum freeze drying technology and variable temperature differential pressure expansion technology, and gives an example of joint drying technology. Finally, the development direction of fruit and vegetable drying technology is discussed.

Key words: microwave drying of fruits and vegetables; drying of fruits and vegetables; joint drying

China is the world's largest fruit and vegetable production and processing country, and the fruit and vegetable industry is the second largest agricultural pillar industry after the grain industry. According to relevant data, in 2013, China's fruit planting area was 11.8 million hm2, with a total output of about 228 million tons; vegetable planting area was 19.76 million hm2, and the total output was 679 million tons.

In China, although fruit and vegetable cultivation has a long history, there are many problems in the fruit and vegetable processing industry. For example, the processing depth is not enough, the technical equipment is backward, and the product variety is single. According to relevant data, the processing rate of fruits in China is only 3%, and the processing rate of vegetables is only 3.57%. Fruit and vegetable only have about 20% postpartum loss. According to statistics, more than 90% of China's fruits and vegetables are used for fresh sale. In developed countries,

fruits and vegetables used for fresh sale only account for 30% to 50% of the total output.

Different degrees of deep processing of fruits and vegetables can greatly mention the added value of fruits and vegetables, and reduce waste and pollution in fresh and fresh fruits and vegetables. Dried fruits and vegetables are one of the main forms of fruit and vegetable processing. Drying fruits and vegetables can not only realize the comprehensive utilization of resources and the loss and appreciation of products, but also increase farmers' income and promote the steady and rapid development of fruit and vegetable planting industry.

Dried fruits and vegetables refers to a processing method that uses a certain dried fruit and vegetable technology to remove the water of fresh fruits and vegetables, and preserves the raw materials in a state of low water content. Drying is a general term for drying and dehydration. The product is called dried fruit. Or dried vegetables. Common fruit and vegetable drying technologies include hot air drying technology, vacuum frying technology, vacuum freeze drying technology, vacuum drying technology, microwave drying technology, and differential pressure puffing drying technology.

Drying of fruits and vegetables is an effective means to increase the added value of fruits and vegetables. Different drying processing technologies have different advantages and disadvantages. The most suitable drying technology is selected according to the characteristics of the raw materials, and the best products are obtained with the minimum energy consumption and the highest drying efficiency.

The development trend of fruit and vegetable drying processing technology is joint drying processing technology. The combined drying technology can better control the entire drying process and has the advantages of improving product quality, improving production efficiency,

and saving production costs. The research direction of future joint drying technology is to accurately determine the moisture content of the conversion drying method, continuously improve the theoretical and mathematical models of the combined drying technology, improve the automation control degree of the combined drying technology process, and optimize the conversion connection technology of the drying methods of the combined drying equipment. To achieve efficient and rapid industrial production of combined drying technology.