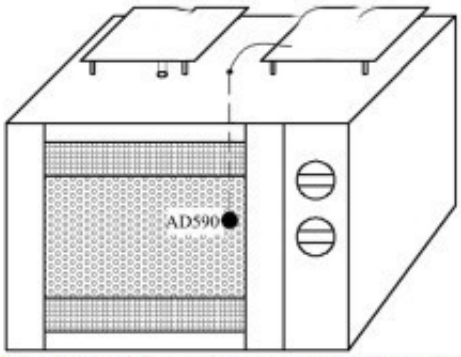
Development of Food Drying Technology



Schematic diagram of microwave drying temperature control system

Absrtact: The important role of drying technology in the future development and its important position in processing are analyzed, and the advantages and disadvantages of various drying methods so far are introduced, so as to compare with microwave drying equipment with the best development prospects. Although there are still many problems in microwave vacuum drying, its wide application and affirmation with the industry still lay the foundation of microwave authenticity. As the status of air drying, the automation level of microwave vacuum drying technology is constantly improving, microwave vacuum drying technology will be more widely used in food production.

Key words: microwave vacuum; drying technology; food microwave drying

With the development of society, drying has been involved in more and more fields, especially in food preservation, which has become an important means and an important processing technology. And nowadays people's requirements for food are gradually increasing, and people pay more attention to color, aroma and taste, so a comprehensive drying processing technology is needed.

As a big agricultural country with inconvenient transportation and backward processing technology, postpartum losses are especially huge in economy. Compared with the post-harvest processing technology of developed countries, there has been a significant gap of 2-5 times. Therefore, drying of fruit and vegetable food after harvest is of great significance.

In the international market, the consumption of freeze-dried food is also increasing year by year: over 5 million tons in the United States, over 1.6 million tons in Japan and over 1.5 million tons in France. Much of the freeze-dried food in these countries is imported from other countries. In retrospect, our country has abundant products and suitable environment, which is very suitable for fruit and vegetable growth. For the large developing country with 1.3 billion people, our demand for dried food is sure to increase more obviously year by year. Therefore, the drying technology with broad prospects is very worthy of our study.

Compared with the drying method mentioned above, microwave drying has obvious advantages in heating speed and time, or its efficiency is obviously higher than the drying technology mentioned above, but its shortcomings are also relatively obvious: uneven heating leads to

excessive local temperature, which will greatly reduce the quality and nutritional flavor of processed products. Therefore, microwave drying technology combining the advantages of microwave drying and vacuum drying has gradually become the latest development trend of drying technology.

According to the development of drying technology, microwave vacuum occupies a great space for development. It is possible to replace other drying methods such as freeze-drying from its characteristics of fast, high efficiency and low temperature. However, the problem of imperfect mathematical modeling still needs to be solved, which lays a foundation for future automation control. How to obtain the best dehydration and drying products with low cost and low energy consumption is an urgent problem in drying technology research.