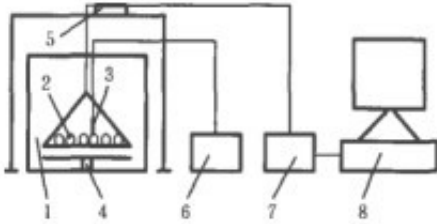


Development of New Drying Technology for Agricultural Products

Abstract: Drying technology is a very important part in the processing, storage and transportation of agricultural products in China. The drying industry of agricultural products in China has been gradually rising in recent years, and now the technology is becoming more and more mature.



This paper introduces the development status of drying industry of agricultural products in China, emphatically introduces the development status of several new drying technologies, such as [microwave drying equipment](#), vacuum freeze drying, warm air drying, variable temperature and pressure differential expansion drying, microwave vacuum drying, radio frequency drying technology, and analyses and compares several typical drying technologies with traditional drying technologies, as well as future drying technologies. The development direction is prospected.

Key words: [microwave drying of agricultural products](#); new drying technology; process development

In recent years, with the advent of the information age, China's economy has developed vigorously, people's living standards have improved significantly, energy conservation and emission reduction, green safety and environmental protection has gradually become a topic of daily concern. The drying technology of agricultural products in our country has experienced the development process of starting at the initial stage in our country, importing and absorbing from abroad, technological innovation, research and development, and gradually becoming mature.

Although our country has made great progress in this field through the unremitting efforts of several generations of researchers, compared with the advanced level of the world in various periods, there is still a gap that is difficult to overcome.

According to the principle of drying technology, the drying technology of agricultural products can be divided into microwave drying, vacuum freeze drying, warm air drying, variable temperature and pressure differential expansion drying and so on.

Microwave is a kind of electromagnetic wave with high frequency in physics. Its wavelength varies from 1 mm to 1 m, and its frequency is generally 30 to 300 MHz. Microwave has short period of electric field oscillation and strong penetration ability. Microwave generator is the core equipment of microwave drying equipment. It is mostly used in the drying of chemical products, agricultural and sideline products, household goods, building materials, and wood paper

products. To a certain extent, microwave drying can also be used for disinfection and sterilization of food, agricultural and sideline products.

As early as the 1960s, many foreign countries have done a lot of theoretical analysis and Experimental Research on microwave drying technology. The research on microwave drying technology in our country started relatively late. Nowadays, there are only a few decades of history, and a lot of research and application achievements have been made. Drying technology is widely used in agricultural by-products, food industry, engineering building materials, pharmaceutical industry and so on.

Compared with traditional drying methods, microwave drying has the advantages of short drying time, energy saving and emission reduction, high production efficiency, uniform drying, no pollution to the environment in the production process, high product quality, easy to realize automatic control, and the direction of heat conduction in the drying process is the same as that of water diffusion. Therefore, it is more and more welcomed by factories in production practice.