Progress in the application of microwave drying technology in ginseng processing

Abstract: Microwave drying technology has been widely used in people's participation in work. It is characterized by high efficiency, sterilization and energy saving.

This paper elaborates on the effective and rational use of microwave drying equipment in people's participation through three typical cases. It is indicated that the microwave drying technology is effectively utilized in the pre-treatment of the active ingredient extraction of ginseng in the human participation process. This technology has great implications for the future pharmaceutical and food processing industries.

Key words: ginseng microwave drying; foam separation method; high performance liquid chromatography

Ginseng, a perennial herb, is a medicinal material of the Northeast and is widely used in the processing and production of food and medicine.

Microwave drying technology is an auxiliary method for extracting, drying and sterilizing by microwave. Nowadays it is widely used in order to prevent early deterioration of food for storage, usually using ultraviolet lamp, steam, high pressure, cobalt 60, ozone, nitrogen, and addition. Preservatives and other methods for sterilization, microwave drying technology has opened up an ideal way to simultaneously sterilize materials inside and outside, without destroying nutrients.

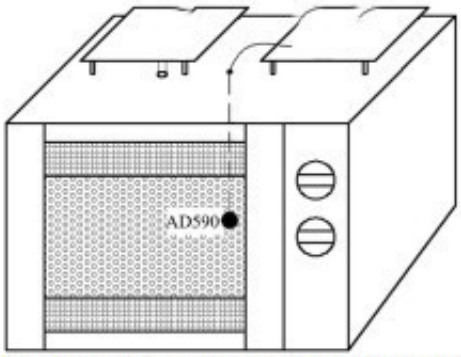
In the past 30 years, a lot of research has been carried out on foods, especially bagged and bottled foods. Microwave irradiation is used for rapid temperature sterilization. Better taste, color and nutrients are maintained compared to conventional methods. The microwave drying technology of food in China has been adopted by more and more food manufacturers.

Compared with other drying methods, microwave drying is characterized by high efficiency, energy saving and economy. If the microwave drying process is adopted, systematic research should be carried out in combination with the characteristics and equipment of the variety to clarify its applicability and process conditions.

Microwave drying is better for homogeneous systems, and mass transfer heat transfer is better.

For heterogeneous systems, mass transfer heat transfer is affected by microwave drying process. The properties of materials and their applicability to microwave technology should be considered. Based on the results of comparative studies of specific varieties.

Changes to the drying process should be based on adequate research to determine the type of change and conduct a corresponding change study.



Schematic diagram of microwave drying temperature control system

The consistency of the quality of the drug or food before and after the change should be studied. The chemical composition (including the overall composition evaluation, fingerprint and other indicators) before and after the change, the physical and chemical properties of the dry material and their extent, as well as the impact on the subsequent preparation process, should be studied. Or the possible impact of the absorption and utilization of food ingredients, and pay attention to the impact of the application of microwave technology on the effectiveness and safety of drugs.