

Smashing spicy spice microwave sterilization process

China is a big country with Xinxiang seasoning resources. Its variety, production and sales rank among the top in the world. It is a big country in the production of spicy flavorings and a major exporter. Xinxiang seasoning plays an important role in home and restaurant cooking.

[Microwave drying machinery](#) and equipment sterilization.



In the past, the bacteriostatic and bactericidal measures could not keep up, and the processing level was also as high as 8×10^5 cfu / g. With the improvement of people's living standards, the requirements for food hygiene have been continuously raised, and the requirements for bacterial content have been put forward, especially for export. For countries such as Japan, the requirements for imported spices are generally $< 5\ 000$ cfu / g, and the coliform group is negative. Therefore, it is necessary to improve the production quality of the deep processing products of Xinxiang seasoning.

In the 1990s, various methods such as thermal sterilization, chemical sterilization, irradiation sterilization, microwave sterilization, and ultra-high pressure sterilization have appeared in the methods of food sterilization.

International microwave technology began to apply and study microwaves in the food industry in the 1940s. It

has thermal effects, non-thermal effects and penetrability. Therefore, microwave sterilization has lower sterilization temperature and maximum food retention when the same effect is achieved. The color scent and active ingredients do not produce any harmful substances, the sterilization is uniform and thorough, the product is safe and reliable, and the storage period is long.

After the 21st century, domestic microwave sterilization has been applied in many foods, and all of them have achieved good results that cannot be compared with traditional sterilization methods. However, seasoning powders are usually also sterilized by irradiation [but irradiation can change the taste of the food and is harmful to the human body. Microwave sterilization has become the preferred sterilization method for food producers in the smashing of spices.

The [microwave sterilization](#) effect is determined by the microwave equipment and the microwave process. If the microwave equipment is operated online with the upstream and downstream equipment, the advantages of on-line sterilization under normal temperature and normal pressure conditions can be unmatched by other commonly used sterilization methods.

At the beginning of the 21st century, microwave equipment has been developed in China's food production, but there are few microwave equipments that can achieve better bactericidal effect (sterilization rate over 90%) in flavored foods. Our company has successfully developed a tunnel production. Microwave sterilization equipment and a laboratory-specific microwave sterilization equipment.

We first used the laboratory-specific microwave sterilization to study the sterilization process of chili powder and allspice powder, and then tested it in the microwave sterilization equipment for tunnel production. The results were quite satisfactory.

Materials that are not pretreated often contain more microorganisms. For example, the activity of microorganisms may also produce some secondary metabolites. Although it can be solved by microwave, it needs rehydration and then drying, and it takes a long time. Microwave sterilization time will affect the quality of Xinxiang seasoning. Therefore, microwave sterilization is suitable as a post-sterilization step, and requires the cooperation of the previous process (cleaning, heat sterilization, etc.).

The tunnel type microwave sterilization equipment can be connected to the production line and installed in the workshop, which is very convenient to use. Through the online operation of the same upstream and downstream equipment, the online sterilization operation of Xinxiang seasoning under normal temperature and normal pressure conditions is carried out. Change the combination of dispersive and cumbersome pretreatment processes, improve the deep processing level of spicy seasonings, and promote the modernization of condiment production. It plays a revolutionary role in realizing the linkage of condiment pretreatment

equipment and the automation of production operations.

This is unmatched by other commonly used sterilization methods. The microwave sterilization technology can also be used for sterilization of other industries such as Chinese medicine pharmaceuticals and powder foods.