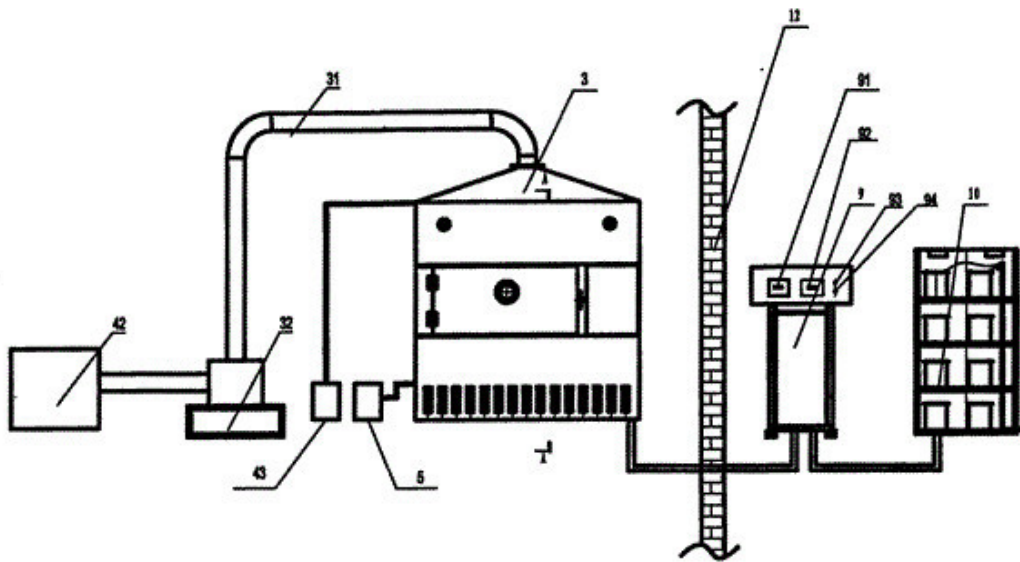


Application of Microwave Drying and Sterilization Technology in Traditional Chinese Medicine



ABSTRACT: Compared with traditional drying methods of traditional Chinese medicine, microwave technology not only has the characteristics of simple operation, fast, good effect, good appearance and low energy consumption, but also has excellent sterilization effect while drying. In this paper, the characteristics and influencing factors of [microwave drying equipment](#) and sterilization technology are briefly described. The application of microwave drying technology in the field of traditional Chinese medicine is summarized. The existing problems and prospects of current research on safety (microwave radiation and microwave residues) are put forward.

Key words: [microwave drying of traditional Chinese medicine](#); microwave sterilization; traditional



Chinese medicine; microwave radiation; review

Insect borer and mildew are important factors affecting the quality of traditional Chinese medicine, which are caused by high humidity of materials and inappropriate environmental

temperature. Therefore, drying and sterilization are an important part of the processing of traditional Chinese medicine. The common drying methods are sun-drying, air-drying/shade-drying, hot-air drying, freeze-drying and so on. In practical work, appropriate drying methods should be selected according to the specific conditions and the nature of traditional Chinese medicine.

Microwave drying and sterilization technology is a rising method in recent years. It has the advantages of uniform product, good quality, fast speed, wide applicability, low temperature operation, safety, reliability, high efficiency and energy saving, easy to realize automation, continuous operation and meet the requirements of environmental protection, and has good sterilization effect. This paper reviews the application of microwave technology in the field of traditional Chinese medicine.

Microwave technology has unique advantages in drug drying and sterilization. It has the characteristics of high efficiency, good effect, strong controllability, low noise and relatively small volume of equipment. Moreover, various technologies are becoming more and more mature. It is a very worthwhile method to develop and standardize, but there are still some problems to be solved.

(1) Microwave drying and sterilization technology has been widely used in the field of traditional Chinese medicines. Although there are reports on the drying effect of microwave drying on single Chinese medicines at home and abroad, there is a lack of systematic research on the effects of different kinds of Chinese medicines.

(2) There is no report on microwave sterilization of traditional Chinese medicine tablets, traditional Chinese medicines and decoction pieces of traditional Chinese medicine.

(3) Whether traditional Chinese medicines of different pharmacodynamic properties, origins and textures are suitable for microwave drying and sterilization remains to be explored.

(4) Microwave has reflective characteristics. Whether there is a hidden danger of microwave residue after the equipment stops in the cavity, such as whether the residual microwave has an impact on drugs or follow-up products, needs further study.