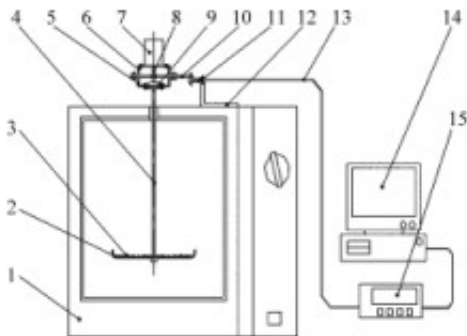


Microwave drying characteristics of corn and its effect on quality



?Abstract? In view of the problems of hot air drying in corn, the self-made microwave drying test system was used to study the microwave drying characteristics and drying conditions of dried microwave power and energy consumption after using different drying power, heating time and supporting process. The influence of unit mass power consumption, temperature, average water loss rate on corn kernel germination rate, crack rate and starch yield during microwave drying of corn was analyzed, and the process parameters affecting microwave drying corn and corn [microwave drying equipment](#) were determined. The optimal process flow.

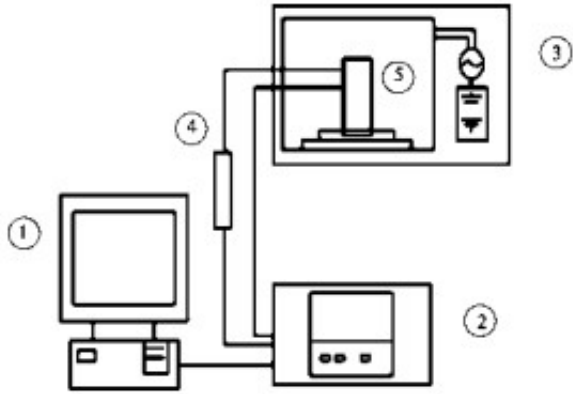
The results show that the [microwave drying of corn](#) is mainly in the constant-speed drying stage. The application of microwave technology can not only dry the corn grain quickly and economically, but also maintain its seed value and improve its quality.

Keywords: microwave drying corn drying characteristics quality

introduction

Due to the weather, the moisture content of corn is high when harvested. If it cannot be dried in time, it will cause deterioration and mildew, which will seriously affect the yield and quality of corn. The traditional hot air drying method, when the material is heated before drying, the drying effect is poor and the drying quality is poor, especially the corn kernel is large, the unit specific area is small, the grain cortex structure is tight and smooth, and the water is not easily transferred from the inside to the outside of the grain.

Especially under the action of high temperature medium, the moisture of the corn seed epidermis is rapidly vaporized, the moisture under the epidermis can not be transferred in time, causing the pressure to rise, causing the skin to burst, the starch gelatinization, the starch yield decreased, and the quality of the corn after drying is significantly reduced. .



Microwave drying is different from hot air and other drying methods. Due to its unique heating characteristics, materials drying speed, short time, high quality after drying and high heat utilization rate are getting more and more attention in the fields of medicine, food industry and agricultural product processing. application.

Foreign countries have started research on microwave drying of grain and fruits and vegetables more than a decade ago. In recent years, there have been reports on microwave drying in rice, rapeseed and litchi, and some have been successfully applied and achieved significant economic benefits. However, there are not many reports on the microwave drying research of corn, especially the microwave drying characteristics of corn are still unclear. Therefore, the microwave drying test was carried out to analyze the microwave drying characteristics of corn and its effect on the quality and energy consumption after drying, and further explore the application of microwave technology in corn drying.