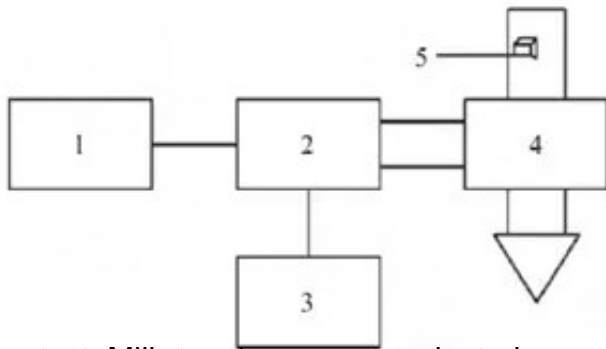


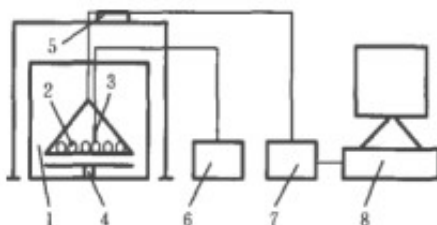
Effects of microwave drying on nutrition and quality characteristics of millet and Chinese yam



Abstract: Millet and yam were selected as main raw materials to study the effects of temperature and loading capacity of [microwave drying equipment](#) on drying rate, chroma, rehydration ratio and content of functional components. The results showed that the drying rate of millet and yam was higher and the rehydration ratio was suitable when the drying temperature was 50 C, 5.70 g/mL and 5.30 g/mL respectively; the chroma was better, and the ΔE was 12.36 and 11.39 respectively; when the loading capacity was 300 g, the drying rate of millet and yam was higher, and the rehydration ratio was suitable, which was 3.32 and 2.93 g/mL respectively; the chroma was better, and ΔE was 11.39. Was 13.48 and 12.41 respectively, and the loss of carotene and polysaccharide in millet was less, 0.052 and 0.59 mg/100g respectively.

Key words: [microwave drying millet](#); yam; nutrition and quality characteristics

Microwave drying has the characteristics of high efficiency, high speed and low temperature. It can retain the inherent color, aroma, taste and nutritional elements of food, and the product has good structure and rehydration. Millet is a traditional miscellaneous grain in China. It is the seed of cereal millet, a grass plant of the genus *Cyperus*. It is rich in nutrients and has high digestion and absorption rate. The contents of carotene, vitamin, calcium, magnesium, iron and phosphorus in Millet are higher than those in other cereals. It is a good dietary food.



However, China's millet intensive processing technology is still in a weak link. From the current consumption habits, the existing millet products can not meet the diversified needs of the market, which puts forward new requirements for millet processing. *Dioscorea opposita* is rich in

protein, vitamins, trace elements and mucopolysaccharides. It is a food with high nutritional value and is also a traditional Chinese medicine and food homology.

However, owing to its unique viscous substances, excessive moisture content and irregular individual shape, *Dioscorea opposita* has the problems of short storage time and unable to withstand long-distance transportation. The deep processing of Chinese yam can not only solve the above problems, but also increase the added value of products.

The effects of microwave drying temperature and loading capacity on the quality of millet and yam were studied in this paper. The loss of thermosensitive functional components in traditional drying process was reduced, which provided theoretical basis and technical support for the industrialized production of millet and yam in low temperature preservation and drying.