

# Effect of microwave drying on Ginger

## 2 results and analysis

2.1 The effect of different microwave drying conditions on the yield of ginger powder was studied by three experiments, and the average value was obtained in different microwave drying conditions.

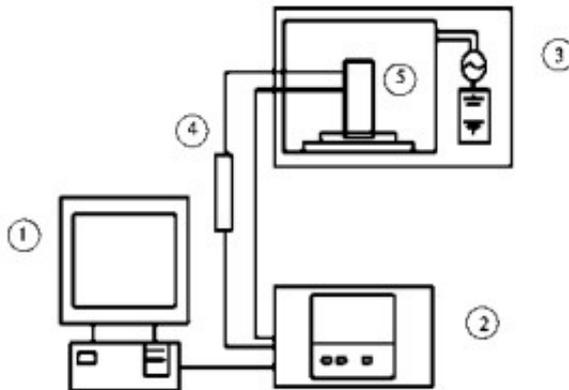
The yield of ginger powder under treatment conditions was studied.

Repeat three experiments, according to the characteristics of ginger powder and the safety of the experiment, the best way of ginger cutting and microwave treatment conditions were obtained.

### Evaluation of sensory quality of 2.1.2 ginger powder

Ten experienced judges were selected to evaluate the sensory properties of ginger powder under different microwave drying conditions.

The yield of ginger powder is the ratio between the quality and the pre drying quality of ginger processed after drying. Yield reflects the cost of production products, high yield, low cost, so the production process generally requires that the yield of products can not be too low. The different yield is due to the different microwave drying conditions and drying degree, resulting in different moisture content and nutrient loss in ginger powder. The yield of microwave drying at 800 W and 16 min differs greatly from that of microwave drying at 480 W and 20 min. The yield of microwave drying at 320 W and 36 min differs slightly from that of microwave drying at 160 W



and 52 min.

### 2.2 effects of different [microwave drying equipment](#) on sensory quality of ginger powder

#### Determination of bulk density of 1.3.4 ginger powder

A small cylinder with a volume of 10 mL is used for measurement. Loading 2.0~2.5 mL sample each time and continuously vibrating the measuring cylinder to reduce the gap. Until the load is 10 mL, the mass is then called mass. Repeated measurement

Take 3 times and take the average.

#### Determination of the ability of 1.3.5 microwave drying equipment for ginger

A sample of 2 G is added to the centrifuge tube, which is said to be in excess of mass, and gradually added water. Each time the sample is stirred with a glass rod and added to the slurry until the sample is dehydrated, the glass rod is dried on the wall of the tube, centrifuged at a speed of 2 000 r/min for 10 minutes, and the supernatant is poured out; if there is no supernatant, water should be stirred and then centrifuged until there is a small amount of supernatant. Repeat 3 times and take the average.

The appearance of ginger powder prepared by microwave drying at 320 W and 36 min was

obviously superior to that of other microwave drying treatments. The microwave drying conditions were 480 W, 20 min, 320 W, 36 min, 160 W, 52 min, respectively, and the odor of ginger powder was obviously better than that of other treatment conditions. Due to the high power of microwave drying, the ability to withstand more in the same unit area, temperature rise, ginger browning more serious, thus affecting the appearance and smell of ginger, while the taste and tissue state are not significantly affected by power.

### 2.3 effect of different microwave drying conditions on bulk density of ginger powder

The average value of ginger powder was obtained through three experiments, and the result of the accumulation density of ginger powder under different microwave drying conditions was obtained.

There was no difference in the hydration ability of ginger powder obtained at 20 min, but the hydration ability was the lowest; the hydration ability of ginger powder obtained at 320 W, 36 min and 160 W, 52 min by microwave drying was the same; and the hydration ability of ginger powder obtained at 480 W and 20 min by microwave drying was the strongest. The drying conditions were 800 W, 16 min and 640 W, and the lowest hydration capacity was 20 min. The results showed that microwave drying treatment at 800 W, 16 min, 640 W, 20 min had the strongest damage to the protein properties of ginger powder, while microwave drying treatment at 480 W, 20 min had the least damage to the protein properties, and the quality of ginger kept better. The food safety index is