

Effects of different drying methods on the functional properties of peanut protein

Peanut protein was dried by hot air drying, vacuum drying, [microwave drying equipment](#) and microwave combined with vacuum drying. The functional properties of peanut protein (oil absorption, water holding, emulsifying, foaming and foaming stability) were compared in different drying methods. Influence. Experiments show that microwave combined with vacuum drying of peanut protein not only has short drying time, but also has good functional properties. Microwave combined with vacuum drying is a suitable method for drying peanut protein.

Keywords drying method peanut protein functional properties

Peanut protein contains 8 kinds of essential amino acids, the biological value (BV) is 58, the protein efficacy ratio (PER) is 117, the pure digestion rate is 87%, easy to be digested and absorbed by the human body. Peanut protein has good water absorption, water retention, oil absorption, emulsification and other properties, can be added to ham, sausage, lunch meat and

There are many kinds of peanut protein products, including powdered peanut protein.

However, in the processing of peanut protein powder, drying treatment is needed. Different drying methods will have different effects on the function of peanut protein. There are many reports on the drying methods of peanut protein. The comparison of the influence of properties is rarely reported in the literature. Therefore, the hot air drying, vacuum drying, microwave drying and microwave drying combined with vacuum drying were used to dry peanut protein, and the effects of different drying methods on the functional characteristics of peanut protein were compared.

1 materials and equipment

1.1 materials and equipment peanuts, marketed.

Electric Heating Constant Temperature Blasting Drying Box, Shandong Weifang Medical Group Co., Ltd. Medical Device Factory; ZKF035 Electric Heating Vacuum Drying Box, Shanghai Experimental Instrument Factory Limited; WD800 Microwave Oven, Shunde Qulanshi Microwave Electrical Appliances Co., Ltd.

1.2 experimental method

Extraction of peanut protein concentrate from 1.2.1

Peanut kernel was crushed and degreased with petroleum ether in Soxhlet extractor. The degreased peanut powder was extracted with 10 times water at 50 ~C for 30 times.

Min, stirring speed is controlled at 30 R / min to 50 R / min, and then

the pH value was adjusted to the isoelectric point (4.5) by 2 mol/L hydrochloric acid. After the protein was precipitated, the whey water was separated by centrifuge, and the precipitate was washed twice. Finally, the protein concentrate was separated by centrifuge and dried by different drying methods.

1.2.2 [peanut microwave drying equipment](#)

Four drying methods were adopted, namely, hot air drying (RD), vacuum drying (VD),

microwave drying (MD) and microwave combined vacuum drying (MD-VD), with RD hot air temperature of 70, VD drying temperature of 40, MD drying power of 750 W, moisture content of the sample to about 6 g/100 g, MD-VD drying. The moisture content of the sample was dried to about 15 g/100 g, and then the moisture content of the sample was dried to about 6 g/100 G by vacuum drying.