

Study on New Technology of Peanut Seed Coating by Microwave Heating

Peanut kernel is one of the most important vegetable oil and protein resources, and it is the most widely studied oil seed used to produce edible protein in the world. In addition to simple processing, peanuts can be edible. After deep processing, peanuts can also be made into a variety of food and health food with rich nutrition, good color and flavor. [Peanuts Roasting And Coating Machine](#)

However, we can not ignore the adverse effects of peanut seed coat in processing. Because seed coat contains catechol, tannin and many kinds of pigments, it will make the color of peanut products darker. [Microwave drying machinery and equipment](#)

The germ attached to seed coat contains four bitter components, such as saponins, which seriously affects the taste and appearance of peanut products [2]. In addition, the seed coat contains a lot of dust and microorganisms, so most peanut products (such as peanut beverage, peanut tissue protein, peanut butter, peanut candy, peanut tofu, etc.) need to be peeled (with germ removed). The existing peanut kernel peeling processes are: dry peeling (baking) and wet peeling.



Method of peeling, rotary peeling, air impact peeling, alkali peeling, hydrogen peroxide peeling. However, due to the limitation of equipment and technology, most small and medium-sized enterprises often adopt high temperature (138 C) [3] baking method to peel peanut products, but because the fat content of peanut kernels is as high as 45%, baking method is easy to accelerate the souring of peanut kernels oil, which will shorten the shelf life of peanut products and reduce peanut production. Nutritional value of the product. In addition, if the baking temperature is too high, it will destroy the effective ingredient VK of Ningxue tablets in red clothes, and reduce the utilization value of by-product red clothes and the nutrient content of bad food [4]. In this paper, the microwave peeling technology of peanut kernels is studied in order to achieve shorter peeling time, higher peeling efficiency and as far as possible to reduce the peeling rate. Low oil peroxide ratio of peanut products can produce high quality peanut

products, so as to optimize the process and improve the comprehensive processing and utilization of peanut kernels.

1 materials and methods 1.1.1 Raw materials and reagent materials: commercial peanut kernels; reagents: sodium hydroxide, sodium chloride, chloroform-glacial acetic acid mixture (2:3), saturated potassium iodide, 0.01N sodium thiosulfate standard solution, 0.5% starch indicator are all analytical pure. 1.1.2 main instruments Baking oven GZX-DH-S Shanghai Yuejin Medical Instruments Factory; Microwave oven Midea KE23B-W, 800W, 2450MHZ Shunde Meimei Microwave Oven Manufacturing Co., Ltd; Centrifuge 800 Centrifugal Precipitator Shanghai Surgical Instruments Factory 10; Pulper haichu380A Shanghai Saikang Electrical Appliances Co., Ltd. 1.2 experimental method 1.2.1 Microwave Baking Peeling Method

Value [2]. Because the microwave heating time is short, the sterilization temperature is low, and the selected peanut kernels are laid flat on the plate, the corresponding microwave firepower is adjusted, the peanut kernels are heated in the microwave oven for different times, then taken out and let it completely cool, rubbed the peanut kernels to make the seed coat fall off, and blown off the seed coat by an electric fan. 1.2.2 Freezing-Microwave Baking Peeling Method Put the selected peanut kernels in the freezing room of the refrigerator, take them out at certain intervals, adjust the corresponding microwave firepower, bake them in the microwave oven for different times, then let them cool completely, rub the peanut kernels to make the seed coat fall off, and blow the seed coat off with an electric fan. 1.2.3 roasting and peeling method

The selected peanut kernels were laid flat in the oven, and the corresponding temperature was adjusted for baking. The results were determined at intervals of a certain time. When the seed coat is easy to remove, it should be completely cooled, rubbed peanut kernels to make the seed coat fall off, and blown off the seed coat with an electric fan. 1.2.4 alkali solution peeling method

A certain concentration of NaOH solution was heated to the corresponding temperature. The selected peanut kernels were put into the alkali solution and stirred continuously. After a short time, they were quickly poured into the steel sieve and washed with tap water until there was no residual alkali solution. Then the peanut kernels were rubbed gently to make the seed coat fall off. The alkali solution was adjusted and reused.

1.2.5 Determination of peroxide value of oils and fats. 2 results and discussion 2.1 Determination of technological parameters of microwave drying peeling method Microwave drying peeling method is to heat peanut kernels by microwave. The innermost layer of peanut kernels is first dried, and the evaporation of water in the innermost layer migrates to the outer layer of the subinner layer or the outer layer of the subinner layer, so that the volume of seed coat and seed kernels changes little, so that the seed coat breaks and the seed kernels are separated, so as to achieve the purpose of peeling.