



EXTRACTION OF OIL BY PRESSING

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Abstract

The article provides information on the theoretical basis of the process of pressing oil, the process of pressing in the production of vegetable oils, as well as pressing on continuous auger presses.

Keywords: The liquid part-oil, vegetable oils, pressing machine, oil industry.

Introduction

Pressing is the process of extracting oil from a greasy product. Unrefined oil is oil that has been squeezed out of a press. Kunjara is a remnant of fried oil. The Zeer chamber is the main part of the pressing machine. Residual oil is the amount of oil left in the pan after the oil has been squeezed out of the frying pan [1-7]. In the oil industry, various designs of auger presses are currently used to extract oils from raw materials. Initially, they were installed only in pressing plants, and later, with the advent of advanced extraction, the extraction of oils before extraction in auger presses became one of the main technological processes in the production of vegetable oils.

The Main Part

The roast is crispy and porous. As a result of its compression on all sides, two interrelated processes take place:

- 1) The liquid part-oil is separated;
- 2) The solid particles stick together to form a briquette.

The separation of the oils from the gel part can be described as follows. The frying pan contains a large amount of oil on the top and inside, and the particles are separated from each other by air cavities.



Initially, as a result of compression on all sides of the roast, although the particles are deformed and certain parts of them stick together, the air is mainly squeezed out and the distance between the layers of particles is reduced. The gaps on the surface of the particles are filled with oil [5-9]. The bulk of the oil is squeezed as the particles combine and deform. As the inner surface parts of the particles approach, oil begins to separate from their inner surface. As the inner and outer parts of the particles approach, the gaps between them fill with oil.

As mentioned earlier, the monomolecular oil layer on the surface of the particles has the highest binding energy. As the distance from the surface decreases, the binding energy decreases, so the velocity between the flow of oil being squeezed is greater, the layers closer to the surface are immobile, and therefore the distance between the particles is reduced [10-19].

As the cross-section of the channels between the particles suddenly decreases, the squeezing of the oil stops as the surfaces come closer together to form a monomolecular oil layer, because the adsorbed oil film does not compress. In practice, the oil residue is greater than the oil held by the monomolecular layers, as the oil film breaks and the contact between the pieces is broken. In addition, the oil is encapsulated as the particles combine [20-27].

The process by which the roasting particles combine to form a briquette is as follows: at the beginning of the pressing process, the particles come closer together, reducing the gaps between them. The physical meaning of the oil extraction process is the same as that of hydraulic presses, and is maintained in the case of auger presses. The specifics of the process in auger presses are shown below [28-31].

The prepared roast has the following technological parameters before feeding to the pressing machine:

Results

The temperature of the product after the 1st stage roasting is 80-850 C, humidity is 9-11% for all oilseeds except cotton seeds, 11.5-13.5% for 1-3 sorts of seed varieties for cotton seeds , For 4 varieties of seeds should be 13.5–15.5%. The steaming and humidification process takes 15-20 seconds as fast as possible. After roasting, ie after the 2nd stage of roasting, the roasting temperature should not exceed 100-1050C.



For low-grade seeds, it should be 5-100 C below the indicated level. The moisture content, if the product is prepared for pressing, should be around 5.5, complete without extraction, and 3-4% or 2.5-3%, depending on the type of pressing machine used for pressing. In this case, the temperature of the roast is higher than that of the forpress, and is 110-120 °C. At the same time, the amount of shell in the product is limited, so that the amount of shell in the roast for sunflower seeds does not exceed 8-10%, and the amount of shell in the seed of cottonseed husk is 15% for 1-3 varieties, 17% for 4 varieties. should not increase. Round 2, Round 2, lasts an average of 50-60 minutes will be around. Regardless of the method by which the finished frying product is squeezed, the oil is mechanically separated by applying the required pressure to the product. It is known that the main parts of a pressing machine consist of a pressing shaft and zeer chambers. the volume of product transferred begins to shrink due to shrinkage. From this point on, the closer the frying particles get to each other, the larger they get closer to each other. First of all, the outer surfaces and pores of the surface are compressed, and the oil droplets located there begin to be squeezed out. This event occurs mainly at the end of Sector 1 of the Zeer Camera [29-31]. As the product moves to Section 2, the particles continue to converge. The product's internal cavities are now compressed under the pressure created by the volumes that hold the oil, and the oil in the product moves from the inner layers to the surface through the cavities and pores in the product. By the end of Section 2, most of the oil in the product will be squeezed out. As the product progresses to section 3 of the zeer chamber, the particles continue to coalesce to such an extent that they now begin to form a solid cube that is attached to the woven roast.

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