

Processing technology of shea butter



Through the experiment of [microwave drying](#) equipment for Shea butter, we realize that because of the characteristics of this kind of tropical woody soft oil with high oil content, we can not fully apply the commonly used oil preparation technology and equipment in our country. Some of them are minor principles, but they affect the overall situation and affect the safe, stable and low-consumption operation of the equipment.

Material delivery

[Shea butter oil machine](#) is transported by hoist and horizontal winch after crushing raw materials. Because of its high oil content and soft wall contamination, it is often contaminated with bucket, blade and pipe wall. Tropical operation may become more serious due to failure and difficulty in cleaning. It is suggested that vertical winch and horizontal scraper conveyor be used in actual production.

Crushing and crushing of raw materials

At the beginning of the experiment, we encountered the problem of excessive powder consumption caused by too dry raw materials, disc dental plate crusher and hammer cake crusher. Later, the water content of raw materials was adjusted in the conditioning pot, and the improved double-groove roller crusher was used to crush the cake twice, while the single-pair tooth roller crusher was used to crush the cake together.

Quenching and tempering and pressing oil

Whether pre-pressing or secondary pressing, the billet must be heated and conditioned to regulate moisture and temperature. At the beginning of feeding, the feed flow should not be too large before the temperature of the chamber has risen. Using the two-layer auxiliary steaming and frying pan brought by the oil press, the material is easy to agglomerate, and the lower outlet is often blocked, so it can be replaced by a higher one-layer auxiliary steaming and frying pan.

Filtration and purification of crude oil

It was also found that filtration and decolorization would cause loss of unsaponifiable substances in shea butter, but the effect of filtration was not significant, and decolorization had a greater impact. Therefore, in order to protect the nutritional components and active substances such as unsaponifiable substances in oils and fats, refinement should also be appropriate. For the refinement of shea butter crude oil by double helix low-temperature pressing, pure physical methods such as multiple filtration can be used.

Transportation and storage of oil products

Shea butter has a high melting point and solidifies quickly at room temperature, which brings trouble to the transportation and storage of oil products. In actual production, heating sleeve can be installed on the pipeline and heating device can be installed in clarifying tank, filtering tank and product tank. However, heating temperature must be controlled to prevent safety accidents due to excessive local temperature. In addition, shea butter contains a lot of unsaturated fatty acids, especially linoleic acid and linolenic acid, which are easy to oxidize. Therefore, necessary antioxidant measures should be taken during storage, such as adding a small amount of antioxidant, nitrogen-filled protection and so on.

Control of acid value and peroxide value of finished products

The acid value and peroxide value of finished oil are relatively high, which is related to processing raw materials.

The acid value and peroxide value of the crude oil are high. The production of natural refined shea butter by low-temperature pressing also needs to strictly control the acid value, peroxide value and mildew rate of raw materials. Therefore, the harvesting, drying, selection and storage of raw materials are particularly important.

Concluding remarks

Microwave drying mechanical equipment pressing process can effectively reduce the residual oil in the pressed cake, and can be continuously operated, the output is much larger than the other two pressing methods, the quality of the produced oil and cake is better, the nutrients and active substances such as unsaponifiable substances in the oil are fully retained, and the technological route is short, green ring. The operation is relatively simple and is the best choice for continuous production of natural Shea butter.

Because of the limitation of the test conditions, there are many shortcomings in this test. The output of the oil press and the yield of the product oil have not been determined through the normal production assessment. The output and the yield of crude oil are judged separately according to the crushing mode of the test raw materials, the yield of crushed cake and the residual oil of the final crushed cake, and the number of subsequent refining processes of crude oil. The yield and quality of crude oil and cake were not comprehensively tested, but sensory comparison was made according to the change of color before and after crushing, which needs further study and improvement.