



STAGES AND TECHNOLOGIES FOR OBTAINING COTTONSEED OIL

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ABSTRACT

This article describes the process of producing cottonseed oil; all stages of obtaining purified cotton seeds for pressing them and obtaining oil are considered.

Key words

Cotton, lint , technological process for obtaining cottonseed oil, cleaning, exfoliation, softening, tableting, frying pan, pressing

Before obtaining cottonseed oil, there are many stages and technological processes preceding this process. Studying these processes and identifying problems at each stage greatly affects the quality of the cottonseed oil itself. And so the very initial stages on the path to obtaining oil is the collection and processing of raw cotton. One of the first technological processes is the cleaning of cotton from small and large quarrels, then the long cotton fibers are separated from the seeds, this process is called ginning , but after ginning , small fluff remains on the seeds, which is called lint . This linter is removed from the seeds during the cotton seed linting process . Linting damages the seeds to some extent. Therefore, today, reducing damage in this process is considered one of the problems under study.

The seeds are then sorted by quality and divided into two groups, the first for sowing and the second for the production of cottonseed oil. They vary in the degree of damage, since high quality seeds are required for sowing.

Cleaning

The purpose of purification is to remove various impurities in cotton seed, including light, heavy and wet impurities, and improve the purity of cotton seed, and then improve the pressing efficiency of cottonseed oil. In addition, cleaning can also reduce the damage to cottonseed oil production equipment and prolong the service life of the equipment. Cotton seed cleaning equipment is mainly a wind separator.

Exfoliation



Дисковая шелушитель



Валковая дробилка

Cotton seed peeling equipment

There are two common equipment for hulling cotton seeds: disc huller and roller crusher. The disc huller is suitable for small-scale processing of cotton seeds, and the price is economical. Roller crusher is also used for dehulling cotton seeds and also plays a role in crushing. The roller crusher is suitable for large volume processing of cotton seeds, such as more than 50 tons/day.

Separation of cores and shells



**Сито для разделения
ядер и обложки**



Сито цилиндра

Equipment for separating cores and shells

hull separation is to separate the kernels and hulls of cotton seeds and improve the efficiency of cottonseed oil pressing. If the processing volume of cotton seed is more than 50 tons/day, then the kernel -hull separating sieve and the cylinder sieve should be used for two sievings, which can result in a more complete separation of the kernel and hull. If the volume is less than 50 tons/day, then only a sieve is needed to separate the kernels and shells .

Softening

Because the hardness of cotton seed kernels after separating the kernels and hulls is different, it is necessary to use a softening kettle to soften the cotton seeds. If the amount of cotton seed processing is relatively small, this step can be skipped.

Tableting

The equipment used for pelletizing cotton seeds is a pelletizing machine. It can destroy the cell structure and increase the surface area of cotton seeds to make the frying effect more better.

brazier

The roaster can adjust the temperature and humidity of cotton seeds to improve the efficiency of pressing cottonseed oils.

Pressing _

The cottonseed oil production equipment used in the pressing process is a press machine. Before pressing, the temperature of cotton seeds requires 120°C. After pressing, cottonseed oil can be obtained. Because pressed cottonseed oil contains impurities such as gossypol , cottonseed oil must be refined.

These equipment are considered to wear out quickly because they work under high pressure and in constant contact with moisture and oil. Nowadays, equipment for pressing cotton seeds is being studied by scientists; the shortcomings in them and their wear and tear, in particular, are being widely studied by scientists of our republic.

The operating principle of an oil press is based on the movement of a screw shaft pressing on the raw material. The crushed seeds are fed into the grain chamber, where the spinning takes place. The amount of raw material can be adjusted to ensure high productivity without overloading the press.

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