METHODS OF CLEANING MICELLES IN THE PRODUCTION OF VEGETABLE OILS

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Abstract: *This article provides information on how to remove scale from the extractor by various methods.*

Key words: *micelle, oil, distillation, cleaning, layer cleaning, temperature, humidity.*

Study of "Technology of production of vegetable oils", the rational technology of processing of oil raw materials and, in turn, increase the yield of oil, as well as the production of quality shrot or kunjara, as well as a small loss of biologically active, useful components allows you to provide. This technology is possible only if you have an in-depth knowledge of the physiological and biochemical properties of oilseeds, ways of their processing, the impact of various factors on the components of the seed and their processing products, and correct technological processes. can only be done when you can manage.

It is known that the micelles released from the extractor during extraction contain about 0.4-2% of residual slag clots. Therefore, before distillation of the missella, the sediment in the missella solidifies under the influence of heat inside the pipes of the heater and the distillation apparatus, which slows down the heat exchange process in the apparatus. the mold stops the distillation process altogether, which can be mechanically cleaned by removing the heater or distiller tubes, but this work forces the distillation system to stop for a long time and consume a large mechanical cocktail. Due to this, the missella obtained from the extractor is cleaned of scale in various ways. One of the simplest methods:

Search method. This method involves the deposition of particles under the influence of their own weight on the bottom of the container in which the micelle is stored, which uses the gravitational forces of the particles. The method is used in industry only occasionally because of its extremely long completion time.

Another method is to separate the fuzzy missella by centrifugal force. In this case, a separator operating in any liquid system is used to clean the missella, and the sediment is separated from the missella liquid due to the centrifugal force generated. The duration of this method is very short, but because the highly despersible particles are difficult to separate from the micelles, the cleaned micelles still have some shrot residue.

The filtration method is performed by passing the fuzzy missella through the filter surface. Although this method requires a lot of manual labor, the most common and filtered missella allows you to clean almost all shrot particles. A variety of fabrics can be used for filtration, including yarn, synthetic fibers, or filter paper. Whatever type of material is used, they are not considered a filter surface, but only a barrier that forms a filter surface.

From these methods, it can be seen that in method 1, the missella is at rest, and the dispersed particles are in motion, and in method 2, both the missella and the dispersed particles are in motion at the same time. In Method 3, the dispersed particles are at rest and the dispersion medium is in motion. Purified and suitable for distillation, the missella should be clear and the amount of sediment should not exceed 0.2%.

During distillation, the solvent should be completely separated from the oil as soon as possible and at a minimum temperature. The complete dissolution of the solvent is controlled by the flash temperature of the extracted oil. Reducing the distillation time and temperature will improve the quality of the oil obtained, reduce heat consumption and increase the efficiency of the device.

The efficiency of distillation can be increased by choosing the right temperature and method of driving the solvent from Missella. From the point of view of molecular-kinetic theory, the mechanism of the process of vapor formation is as follows. Molecules of liquid close to the heating surface fly into the space above the liquid at high speed, breaking away from the rest of the molecules and becoming free. Each evaporating molecule dissipates some of the heat energy introduced from the outside, eliminating the gravitational force of the liquid and the resistance to external pressure.

When the Missella is heated with a closed vapor, there is only one component on the vapor cavity - the solvent vapor, and this process consists of simple evaporation, which in practice takes the form of boiling or evaporation.

During boiling, the partial pressure of the solvent vapor changes to a solvent vapor at a temperature equal to the ambient pressure. However, evaporation by boiling is not enough to completely dissolve the solvent, as the boiling point of the micelle increases as the concentration increases. As a result, the quality of the oil may deteriorate and thermal decomposition may occur. During evaporation, the solvent changes from a liquid state to a vapor state even when the partial pressure of the solvent vapor is less than the ambient pressure. However, this will slow down the solvent drive. In order to speed up the evaporation process and reduce the temperature at which the solvent is completely driven from the micelles, open water vapor is introduced into the drive at atmospheric pressure or under vacuum.

The use of open water vapor to dissolve the solvent reduces the vapor concentration of the solvent on the missella, i.e., reduces the partial pressure of the solvent vapors, and reduces the boiling point of the missella, speeding up and facilitating the driving process.

Cleaning the Missella: Until recently, the cleaning of missella was carried out in frame or cartridge filters. Due to the need to clean these filters frequently, large amounts of gasoline vapors could be released when the equipment was opened in the extraction shop, creating a more fire-hazardous situation. Currently, almost all extraction shops have introduced micelle cleaning using drum or disc filters.

In this method of filtration, the fine particles in the micelles first pass through the holes in the filter barrier, and then, when the holes begin to clog, sit on the filter and collect, forming a filter layer. As a result, only clear missella begins to pass through the filter. Thus, the resulting sediment layer acts as the main filtering barrier. In the sedimentary layer, the missella passes through holes - capillary channels with variable cross-sections and various curves. The small size of the pores in the filter barrier and sediment layer, as well as the low velocity of the liquid phase in the pores, lead to laminar filtration. Under these conditions, the filtration rate is in any case directly proportional to the pressure difference, but inversely proportional to the missella viscosity and the total hydraulic resistance of the sediment layer with the filter barrier.

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