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IMPORTANCE OF MISSELLA REFINING TECHNOLOGY FOR VEGETABLE OILS

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Abstract
This article discusses the importance of the technology of refining vegetable oils in the form of missella

Keywords: missella, solvent, hexane, refining, hydromechanical, anthranilic acid, gossypol, phosphatide, viscosity, solid phase, accompanying substances.

Introduction

The fact that the growth of food production in the world lags behind the growth of the population and needs is a testament to the scale of work that needs to be done in this area.

The opinion of the President of our country on the need to attract advanced agro-industrial technologies to agriculture, develop and reconstruct agricultural infrastructure, irrigation and reclamation systems, introduce new technologies to attract foreign investment and enter world markets deserves attention [1-3].

In the world today, an acceptable level of food industry plays an important role in ensuring food security and meeting the food needs of the population. Therefore, the sustainability of local food and raw material production, the delivery of food products in the range set by consumption standards remains one of the main tasks.

There is a need to further develop economic reforms in the national economy of the country, especially in the joint-stock company "Uzpakhtayog", which plays an important role in ensuring food security.

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Every year, long-term government programs are developed, which determine the prospects of the industry and are adopted for many years. It should be noted that the goals and objectives of the state programs aimed at increasing the volume of oil and gas production are crucial for the current and future development of our country [4-9].

The extraction results in the formation of a missella in the form of a volatile solvent, oil, oil-containing substances, and solid particles of various sizes from the material being extracted. The missella is processed to separate it into oil and solvent, as well as to separate the solid phase from its contents.

The development of modern refining techniques solves complex problems, and vegetable oils are purified from accompanying substances, and the resulting products are used as food and for technical purposes. Extraction of phosphatides from vegetable oils is widely used in industry as food and feed. There are many ways to extract steroids and vitamins from fat. A method for separating gossypol from cottonseed oil as an independent product has also been developed [10-13].

There is a great demand for solid and high-liquefaction oils, which are needed daily in the industry. There are not many sources of natural solid fats and they are limited to animal fats.

Different refining methods are used depending on the composition, quality and application of the oil. Depending on the nature of the main processes and the effect of reagents on the refining process, they are divided into 3 groups.

1. Hydromechanical (physical)
2. Physicochemical (chemical)
3. Mass exchanger (physicochemical).

Unrefined cottonseed oil contains 0.1 to 2% gossypol and its compounds, which darken the colour of the oil.

Gossypol reacts with sodium to form gossypol sodium. It dissolves in water and is easily separated from the oil. The products of the change in gossypol are broken down by the absorption of soapstock [12-14].

If the content of gossypol in the oil exceeds 0.5%, it is treated with anthranilic acid. This process can be done in oil and missella. Cottonseed oil plays an important role in the balance of refined oils. It is very difficult to refine this oil.

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Processing with anthranilic acid is recommended only if the content of native gossypol in the oil is higher than 0.5%. The same thing applies to grease and micelles. Refining of oil in missella is usually carried out in oil refineries by extraction.

With the help of anthranilic acid up to 90% of gossypol and its derivatives can be extracted from the oil (missella). Antranylate gossypol and unreacted anthranilic acid residues are lost when the oil is processed with alkali. The amount of anthranilic acid is 0.53% for every 1% of gossypol.

After the separation of gossypol with anthranilic acid, the colour of the oil decreases by about two times, the amount of gossypol decreases by 5-10 times, the number of acids decreases by 0.5-1 mg of KOH and phosphatides by 3-6 times.

Separation of missella oil mixtures before exposure to heat in distillers has a positive effect on the colour of the oil obtained. This is especially important in the production of cottonseed oil, as its composition in the gossypol undergoes significant changes during steam-heat treatment. The relatively low viscosity of the missella compared to the oil makes the soap easy and quick to separate. This is especially important when refining cottonseed oil. Therefore, recently a lot of attention is paid to the methods of refining cottonseed oil in the following solvents: acetone, hexane, gasoline, methyl and ethyl alcohols, mixtures of various solvents: isopropyl alcohol + hexane, ammonia + hexane (alcohol) and so on.

The use of solvents reduces the viscosity of the soap and allows the soapstock to separate quickly from the oil. For example, cottonseed oil with a specific gravity of 0.9075 has a specific gravity of 0.7528 in a 40% solution of N-hexane. Respectively, the absolute viscosity is 37.4 g/cm h, while the viscosity of 40% missella (N-hexane) is 1.4 g/cm h.

The technology of treatment of cottonseed oil with an aqueous-alcoholic solution of alkali has been developed. Good results were obtained when 15-50% pentanol, butanol, propanol and ethyl alcohol were used relative to the total amount of alkali used. Refining improves when the alcohol concentration is not less than 15%.

ISSN: 2776-0987 Volume 3, Issue 1, Jan., 2022

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