



PROBLEMS AND SOLUTIONS OF OILSEEDS AND THEIR PROCESSING CULTIVATED IN OUR REPUBLIC

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ABSTRACT

This article focuses on the theoretical foundations of non-traditional essential oils, including rape, soybean, linseed, sesame, melon seeds, fruit seeds and other oilseeds, as well as the process of separation of crushed oil from these seeds and the two-step printing process. The results of the research. It also increases oil production by 3-4% of total oil. Eco-friendly, oil-rich oils and oilseed products are produced for the human body

Keywords: *unconventional oils, melons, seeds for fruit presses, cold presses, mineral and organic matter, vitamins.*

INTRODUCTION

In recent years, 152,400 hectares of low-yielding, heavy water and cotton fields have been cut down, and the need for food has been met by planting vegetables, melons, oils and fodder crops and intensive orchards and vineyards. price stability in the markets.

Introduction of scientific and innovative approaches to solving existing problems, further deepening economic reforms in the sector, ensuring food security and increasing exports, rational placement of fruit and vegetable, melons, legumes, oils and fodder crops, intensive orchards. A number of activities are underway.

Adequate intake of vegetables and melons is crucial for a person's longevity. Therefore, a sharp increase in the production of fruits, vegetables, melons is a pressing issue for today. These products contain high levels of vitamins, enzymes, protein, fats, carbohydrates and mineral salts essential for the normal development and functioning of the human body. Vitamins act as catalysts in the human body and therefore play an important role in metabolism.

Lack or lack of vitamins in foods can lead to metabolic disorders and autoimmune disorders in the human body. For this reason, the Government has reduced the area under cotton cultivation for the cultivation of fruits, vegetables and melons. First, it will provide the population with a variety of vitamins rich in vitamins, and, secondly, will provide non-traditional raw materials for the oil and fat industry.

As you know, there are more than 240 oil and fat producing enterprises in the country. Today, the main raw material for these enterprises is cotton seeds, which process an average of 1.2 million tons of technical cotton seeds per year and produce around 200,000 tons of cotton oil. In addition, an average of 200-250 thousand tons of soy and sunflower seeds are imported annually, and about 80,000 tons of vegetable oil is supplied to the population.

Despite the increase in the production of oilseeds, the demand for vegetable oils is growing as a result of the population and industrial needs, thus importing 150-180 thousand tons of ready-made oils a year.

Currently, oilseed seeds can be divided into two groups. The main oilseeds are: cotton seeds, sunflower, soybeans, lettuce

Non-traditional seeds: sesame, flax, rape, peanuts, almond melons (watermelon, melon, squash, tomato), fruit grains (apricots, peaches, cherries, plums, etc.).

All vegetable oils contain natural oxidation inhibitors - antioxidants, some of which have energetic effects among themselves (for example, tocopherols and phospholipids). The mechanism of action of antioxidants is reduced by the concentration of inactive radicals depending on the formation of their inactive forms [1,2].

The study of quality indicators, physical and chemical properties and factors affecting the oxidation of fats allows us to develop new technology and technological methods for adding vitamins, flavors and other additives to refined cottonseed oil.

During the process of deodorization and deodorization of new types of flavoring substances, such substances as spices, olives, basil are used to supplement the oils produced in the industrial environment. It is important to improve the quality of food and improve the quality of the population's diet into the diet of proteins, lipids, minerals, vitamins, and new, unconventional foods with high nutritional, taste and healing properties [3]. The most promising types of non-traditional raw materials are rape oil. Fatty acids are expressed in polyunsaturated fatty acids that play an important role in regulating fat metabolism, lowering cholesterol levels, eliminating thrombosis, and a number of other diseases including neoplastic.

Proteins from buttermilk, such as soya protein, are similar to egg and milk proteins. After peeling the seeds, they are free of substances that reduce their digestion.

Rape cake contains 37-40% protein, 10-15% nutrients, 7.5-10% fat, which recommends expanding the dietary base of the food industry, including increasing the dietary fiber content in the diet. It accelerates the intake of food through the gastrointestinal tract, reduces the concentration and exposure time of harmful substances, and prevents the absorption of toxins in the body, especially heavy metals and radionuclides. Therefore, the use of rape and melon seed oils to enrich food with fiber is very relevant and desirable.

Because calcium, phosphorus, magnesium, copper and manganese are present in rape cake, its nutritional value is higher than soybean. Also significant amounts of calcium - 68, phosphorus - 75, magnesium - 62, manganese - 54, copper - 74, riboflavin, folic acid and thiamine. Raspberry oil contains natural antioxidants - tocopherol (Vitamin E), phenolic compounds and tannins, but at the same time anti-nutrients: glucosinolates, plums and phytic acids. Glucosinolate levels of different varieties vary in the range of 0.03-1.5%, and their acidity content is not higher than 3%.

The most valuable properties are the flax seeds and the active ingredient in the cake obtained after fat removal. Especially in large quantities - Vitamin B1, Vitamin E. Among the minerals and trace elements in the cake are calcium, phosphorus, potassium, sodium, magnesium, iron, chromium, aluminum, cobalt, molybdenum, nickel. There is also omega-3 acid.

Sesame oil is made from sesame seeds. The sesame cake contains high calcium, zinc, magnesium, potassium, iron, phosphorus, B group vitamins and high quality proteins and fats, carbohydrates, vitamins (high in vitamin E) and minerals. It also contains essential and insignificant amino acids, dietary fiber, and polyunsaturated fatty acids.

Pumpkin seeds contain up to 50% of the protein, so it is a valuable food product. In addition, it is rich in fiber (up to 20%), dietary fiber, essential oils, vitamins B1, B2, B6, B9, E, RR. Contains potassium, manganese, zinc,

iron, phosphorus and other fatty acids. Pumpkin pie is recommended to be included in the diet of people with diabetes, atherosclerosis and obesity.

Improving the quality of food can improve the dietary composition of the population using fresh, unconventional foods, including proteins, lipids, minerals, vitamins, and plant nutrients with high nutritional, taste and therapeutic properties. The use of this kind of non-traditional raw materials in the production of new varieties of vegetable oils, spreads, mayonnaise and other condensed products, as well as bakery and bakery products is very effective.

Purpose of the research: To study the types of oilseeds grown in the Republic and to develop technology for the production of ecologically pure oils based on the structure of oil seeds.

Research objects and methods: Traditional and non-traditional oils, oils and pressing processes in the Republic.

Results: Large oil and fat industry extracts oil mainly from cotton seeds, sunflower, soybean and mulberry seeds by the method of forpress-extraction. The technology is first of all hydrothermal treatment of alloy; Forpresses are compressed with a low quality primary oil under low pressure; extracts oil (mistsella) from solvent extracted from cake extracts.

This method has the following advantages:

- In hydrothermal processing, enzymes are inactivated, the viscosity of the oil changes with the adhesion of the particles in the gel, that is, the formation of a convenient structure for the separation of fat;
- lightly refined by the composition of the oil separated by the forpress method and later used for consumption;
- maximum extraction of crude oil by the extraction method should be less than 1%.

Forpress-extraction method is effective because it allows complete separation of oil, but industrial technology, in turn, has the following disadvantages:

- During hydrothermal treatment the raw material is processed at high temperature (105-110 ° C). This process inactivates the enzymes (lipases, glucosidase decomposition - glucosidase, etc.), stops the activity of microorganisms, and burns in certain layers due to the low heat conductivity of granulated particles. The higher the temperature, the faster the rate of burns and oxidation processes;
- When the cotton seeds are processed, add the shea butter to the level of 15-17% to normalize the structure of the granary before roasting. As a result, not only is it a convenient structural breakdown for oil separation, however, most of the coloring and waxes contained in the shell are transferred to the oil during subsequent processing, and the oil color becomes worse. Reduction of protein content in% of the total amount of graft;
- During extraction, many of the gel particles, including colorants, are dissolved into mistsella;
- additional heat energy is used to separate the solvent from the mistsella and cranberries and to deodorize the oil;
- solvent losses are 0.8-1.0% and are environmentally friendly;
- Extraction oil is used mainly for technical purposes.

As a result of the above changes, the quality of press and extraction oils deteriorates. Excessive alkaline expenditure results in a loss of productivity in the process of refining the oils.

Grape production is technologically good, but it has disadvantages in animal nutrition.

Due to the high fat content of oils and cake from non-conventional oils, the biologically active substances necessary for the human body cannot be processed at large enterprises. The first reason is a lack of raw

materials, and secondly, when the seeds are processed at large plants, the active substances in the raw materials are decomposed.

At this point, an important thought arises. Under market conditions, large-scale enterprises face problems with raw materials and transportation. Small businesses do not have the ability to extract oil by extraction method. This is primarily due to the capital expenditure on the construction of special equipment, and secondly on the issues of establishing environmentally friendly production facilities, high technology and fire safety, and high energy costs.

The analysis of trends in the development of livestock and oil-and-gas industry by presenting the aforementioned issues and literature reveals the need for oil-spinning technology to increase the efficiency and productivity of small businesses in a market economy. The two-step printing method is usually used to achieve the maximum oil production in the printing method (Figure 1).

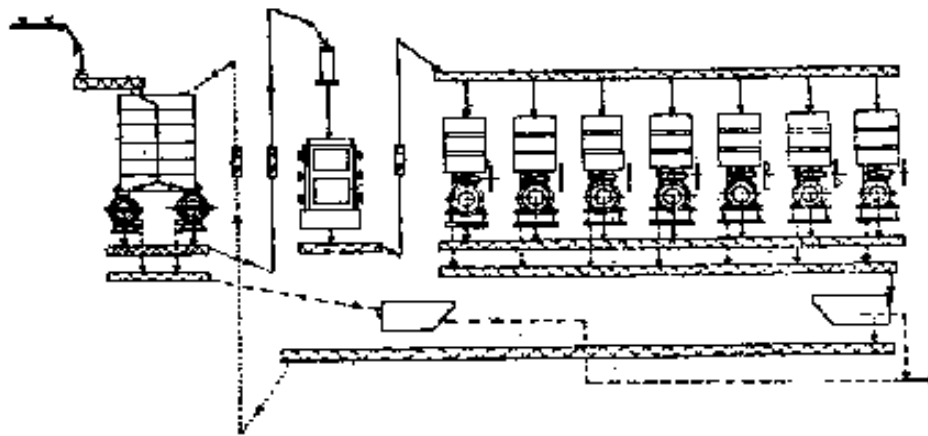


Figure 1. Two-stage oil extraction scheme

According to this method, the oilseed seeds are grinded to a level of 55-60% through a 1 mm sieve and hydrothermal treatment is carried out until the humidity is 11.5-17.0% and the temperature is 70-80 ° C. It is then roasted in 4-5 steam boilers at a temperature of 90-100 ° C until the humidity reaches 4.5-6.0%. The finished oil is removed from the ready-made hammer in the press. Acid content of extracted oil 2,0-2,5 mg KON, color 15-20. one. is allowed.

After the first stage, the cake will contain up to 16-18% of fat. The cake is grinding on the grinding screws and then on the roller coaster. The process of roasting is continued at a temperature of 110-120 ° C until the moisture content is 3.0-4.0% and the second stage oil is extracted on the extilizers. The color of the oil is 15-25 girls. one. up to 2.0-3.0 mg of acid, and sunflower oil content should not exceed 7-8% [4].

We aim to technologically improve this process in our research. Early studies have found that sunflower oil can be significantly lowered after roasting the first-round sunflower by 12-14% based on ancient welding and Skipin's methods in the mid-twentieth century. [5]

According to the proposed method, the first step is to produce cold pressed oil without the use of roasting process. In this way, sunflower oil can be reduced to 20%. In the second stage, the moisture content of the pancakes is increased to 12-14%, the frying process is carried out at a temperature of 90-100 ° C and the humidity is maintained for 5-6%. In the second step, the oil is squeezed out on the shafts. This method produces the following results when producing oil:

- In primary lubrication process, no crunch is exposed to high temperatures and high quality oil is obtained;
- Due to the high content of water in the roasting process, the oil inside the casing is formed by the reduction of mechanical volume and, in addition, by the exchange of water, as in conventional technologies;
- Sunflower oil content is 5-6%, and nutritional value increases.
- The full amount of oil may be used for consumption, depending on the quality.

Conclusion. We aim to conduct research on the preparation of cranberries for oil separation, namely the process of preparation for milling and the two-step printing method. This is because, for example, oilseed oil, for example, in oil presses; The total fat content of sesame seeds is 50%, 30% of which is produced by oil pressing, and the remainder is cake, which is a major problem in the production of healing oils.

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