

**RESEARCH ON THE PREPARATION OF A FRYING COMPOSITION FOR THE CHIPS PRODUCTION INDUSTRY BASED ON LOCAL RAW MATERIALS****Saidvaliyev Saidazim Saidamirkhanovich**

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**Annotation:** This research is devoted to the development of a frying composition for the chips production industry based on local raw materials and the study of its quality indicators. The main goal of the research is to reduce dependence on imports, create a frying oil composition that is economically efficient and meets technological requirements. In the process of work, mixtures of local vegetable oils, including cottonseed, sunflower and linseed oils in various proportions, were selected and their physicochemical, heat resistance and oxidation resistance properties were analyzed. The stability of the oil during frying, its effect on the color, texture, oil absorption and organoleptic characteristics of the chips product were evaluated. The results obtained showed that a correctly selected composition allows to improve the quality of the product and reduce the cost of production. The results of the study serve as a scientific and practical basis for the introduction of effective, environmentally friendly and local resource-based frying compositions in chip production enterprises.

**Keywords:** frying composition, chip products, local raw materials, vegetable oils, food technology, thermal stability, quality indicators.

In recent years, the increasing demand for fast food products in the food industry has led to a sharp increase in the production of chip products. Chips have become one of the most widely consumed products not only by young people, but also by consumers of different age groups. However, the quality, origin and economic efficiency of frying oils, which are one of the main technological factors in the production of these products, remain an urgent problem. In most cases, chip production enterprises use imported frying oils, which leads to an increase in the cost of products and dependence on foreign markets.

Therefore, the development of frying compositions based on local raw materials, the study of their physicochemical and technological properties is one of the important scientific and practical tasks of today. This article discusses the preparation of a frying composition for chip

products based on local vegetable oils, the study of its properties and the possibilities of its application on an industrial scale.

The technology for the production of chip products consists of several consecutive stages, including the processes of preparing raw materials, cutting, washing, drying and deep-frying. Among these stages, the deep-frying process is the main factor determining the final quality of the product.

During frying, the moisture in the raw material evaporates rapidly under the influence of high temperatures (160–190 °C), creating a characteristic crispy texture on the surface of the product. At the same time, the quality of the oil determines the color, taste, smell and shelf life of the product. If the frying oil is prone to oxidation or has low thermal stability, an unpleasant odor, bitterness and harmful compounds may form in the product.[6]

Frying oils used in the production of chips must meet a number of technological and hygienic requirements. First of all, the oil must be resistant to high temperatures and slowly undergo oxidation processes. In addition, the oil must have a low foaming rate and a high smoke point.[1]

Another important requirement is that the oil must have a neutral taste and smell. This allows the natural taste of the chips to be preserved. It is also important that the frying oil is not excessively absorbed by the product, that is, the oil absorption coefficient is low. All these requirements are ensured by the correct selection of the frying composition.

Vegetable oils, which are widely grown and processed in Uzbekistan, create great opportunities for creating local frying compositions. In particular, cottonseed oil, sunflower oil, soybean and linseed oils are distinguished by their chemical composition and availability.

Cottonseed oil has a high smoke point and is stable during frying. Sunflower oil gives the product a pleasant color and a light taste. Linseed oil is rich in biologically active substances, especially The oil is rich in omega-3 fatty acids, which add functional properties to the composition. By mixing these oils in certain proportions, it is possible to create an optimal frying composition.[2]

During the research, several variants of frying compositions were developed. Each variant was prepared on the basis of local vegetable oils in different proportions. The resulting compositions were analyzed for the following indicators:

acidity number;

peroxide number;

smoke point;

thermal stability;

oxidation resistance level.[3]

In addition, potato chips were fried in each composition, and the organoleptic indicators of the finished product - color, taste, aroma, texture and oil absorption level - were evaluated.

As a result of the conducted studies, the frying composition prepared on the basis of cottonseed and sunflower oils demonstrated high thermal stability. A slow increase in the peroxide number was observed in this composition, which allows the oil to be reused for a long time.

Although the biological value of the compositions with the addition of linseed oil was increased, their tendency to oxidation was found to be slightly higher. Therefore, it was recommended to use linseed oil in limited quantities. The prepared chips had a crispy texture and were distinguished by a uniform and pleasant color.[4]

One of the main advantages of frying compositions based on local raw materials is economic efficiency. The use of local oils compared to imported oils significantly reduces the cost of the product. In addition, the use of local resources reduces transportation costs and serves to reduce the environmental load.

From an ecological point of view, the use of local raw materials reduces the carbon footprint and is consistent with the principles of sustainable production. This is important for the modern food industry.[6]

In conclusion, the conducted studies have shown that frying compositions based on local vegetable oils can be successfully used in the chip production industry. The correctly selected ratio of oils ensures the stability of the frying process, improves product quality and increases economic efficiency.

The results of this study serve as a scientific and practical basis for the introduction of import-substituting, high-quality and environmentally friendly frying compositions in chip production enterprises. In the future, it is promising to conduct additional research in this area, enrich frying oils and improve their functional properties.

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