

TECHNOLOGY OF EXTRACTING OIL FROM EGG YOLK AND ITS PRACTICAL SIGNIFICANCE

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Abstract: This article examines the technology of extracting oil from egg yolk, its physicochemical properties, and the possibilities of its application in the food, cosmetic, and pharmaceutical industries. During the research process, a laboratory-scale extraction method was used to obtain oil from egg yolk. The results showed that egg yolk contains a high proportion of lipid components and that the oil obtained from it is rich in biologically active compounds. The research findings expand the possibilities for the effective utilization of egg yolk oil.

Keywords: egg yolk, oil extraction, lipids, food technology, biologically active compounds.

Introduction

Eggs are one of the biologically valuable products that occupy an important place in the human diet. In particular, egg yolk is rich in various lipids, phospholipids, triglycerides, and fat-soluble vitamins. Egg yolk contains an average of 30–35% fat, making it a promising raw material for oil extraction. In recent years, the demand for oils rich in natural biologically active compounds has been increasing. For this reason, improving the technology for extracting oil from egg yolk holds significant scientific and practical importance. The main objective of this study is to investigate the technology of extracting oil from egg yolk and to evaluate the properties of the obtained oil.

Research Methods

The research was conducted under laboratory conditions. Fresh chicken eggs were used as the raw material in the experiment.

Experimental Procedure:

1. Preparation of Raw Material

-The eggs were cleaned, and the egg white and yolk were separated. The yolks were collected in a separate container.

2. Drying process:

-The yolks were dried at a temperature of 50–60 °C to reduce their moisture content.

3. Grinding:

-The dried yolks were ground into a powder using a grinder.

Extraction Method

The extraction process was carried out using an organic solvent (such as ethanol or hexane) to isolate the oil.

Filtration and Solvent Removal

After the extraction process, the mixture was filtered, and the solvent was subsequently evaporated. As a result, pure egg yolk oil was obtained. During the study, the color, odor, and consistency of the obtained oil were observed.

Results

As a result of the study, a certain amount of natural oil was successfully extracted from egg yolk. It was determined that the obtained oil possesses the following properties:

- 1,color – light yellow or golden;
- 2,odor – characteristic egg aroma;
- 3,consistency – semi-liquid state.

The laboratory experiment demonstrated that the efficiency of oil extraction from egg yolk depends on the moisture content of the raw material and the extraction conditions. The oil extraction efficiency was higher when using dried yolks.

Discussion

The research results confirm that egg yolk is a raw material rich in lipids. The oil obtained from it may contain phospholipids, lecithin, omega fatty acids, and fat-soluble vitamins. This makes egg yolk oil suitable for use not only in the food industry but also in the cosmetic and pharmaceutical sectors. Additionally, egg yolk oil can also be used as a natural emulsifier. For this reason, the industrial-scale production of egg yolk oil is considered one of the promising directions.

Conclusion

The conducted studies demonstrated that the technology for extracting oil from egg yolk is effective. It was determined that high-quality egg yolk oil can be obtained under laboratory conditions using the extraction method. The obtained oil is rich in biologically active compounds and has potential applications in the food, cosmetic, and pharmaceutical industries. In the future, applying this technology on an industrial scale and conducting a more in-depth study of the oil's composition will be one of the important scientific tasks.

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