



**Universitatea Tehnică a Moldovei**

**TEHNOLOGIA DE OBȚINERE A IZOLATELOR  
PROTEICE DIN PRODUSE SECUNDARE ALE  
INDUSTRIEI ULEIURILOR ȘI GRĂSIMILOR  
AUTOHTONE**

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**Chișinău – 2025**

**MINISTERUL EDUCAȚIEI ȘI CERCETĂRII AL REPUBLICII MOLDOVA**  
**Universitatea Tehnică a Moldovei**  
**Facultatea Tehnologia Alimentelor**  
**Departamentul Alimentație și Nutriție**

**Admis la susținere**  
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\_\_\_\_\_ 2025

**Tehnologia de obținere a izolatelor proteice din produse  
secundare ale industriei uleiurilor și grăsimilor  
autohtone**

**Teză de master**

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**Chișinău, 2025**

## REZUMAT

**Cotorobai Corina:** Teza de master cu tema: „TEHNOLOGIA DE OBȚINERE A IZOLATELOR PROTEICE DIN PRODUSE SECUNDARE ALE INDUSTRIEI ULEIURILOR ȘI GRĂSIMILOR AUTOHTONE”, Chișinău, 2025

**Structura tezei de master:** este formată din introducere, trei compartimente, concluzii, lista bibliografică care este alcătuită din 53 de surse. Textul de bază conține 53 de pagini, 9 tabele și 13 figuri.

**Cuvinte-cheie:** izolat proteic, șrot, floarea-soarelui, soluție, compuși fenolici, randament proteic.

**Scopul lucrării:** analiza și optimiza o tehnologie eficientă pentru obținerea izolaților proteici din produse secundare ale industriei uleiurilor și grăsimilor autohtone, cu accent pe valorificarea șrotului de floarea-soarelui.

**Actualitatea temei** este susținută de necesitatea utilizării sustenabile a produselor secundare din industria uleiurilor și grăsimilor autohtone, cum ar fi șrotul de floarea-soarelui, pentru a obține izolați proteici de calitate superioară. Această cercetare este deosebit de relevantă în contextul creșterii cererii globale pentru surse alternative de proteine, al reducerii risipei agroindustriale și al dezvoltării unor tehnologii eficiente care să contribuie la sustenabilitatea și competitivitatea industriei alimentare autohtone.

**Partea introductivă** a lucrării subliniază importanța valorificării produselor secundare din industria uleiurilor și grăsimilor autohtone, evidențiind necesitatea dezvoltării unor tehnologii eficiente pentru obținerea izolaților proteici de înaltă calitate, care să contribuie la diversificarea surselor de proteine și la reducerea risipei agroindustriale.

**Primul capitol** al lucrării analizează istoricul, caracteristicile și metodele de obținere a izolaților proteici din produse secundare ale industriei uleiurilor, evidențiind aplicațiile acestora în industria alimentară și impactul socio-economic al utilizării acestora.

**Capitolul 2** al lucrării descrie materialele, reactivii chimici, aparatele și utilajele utilizate în cercetare, precum și metodele de analiză aplicate în cadrul experimentului. Concluziile subliniază eficiența și adecvarea acestora pentru realizarea cercetării tezei.

**Capitolul 3** prezintă rezultatele obținute în urma aplicării metodei de obținere a izolatului proteic din șrotul de floarea-soarelui și analizează optimizarea acestei proceduri. Studiul detaliat al izolatului proteic include analiza aminoacizilor esențiali și neesențiali, precum și a compușilor fenolici, iar concluziile subliniază eficiența metodei și caracteristicile izolatului obținut.

## RESUME

**Cotorobai Corina:** Master's thesis titled: "TECHNOLOGY FOR OBTAINING PROTEIN ISOLATES FROM BY-PRODUCTS OF THE DOMESTIC OIL AND FATS INDUSTRY," Chisinau, 2025.

**The structure of the master's thesis** consists of an introduction, three chapters, conclusions, and a bibliography list containing 53 sources. The main text contains 53 pages, 9 tables, and 13 figures.

**Keywords:** protein isolate, meal, sunflower, solution, phenolic compounds, protein yield.

**Objective of the work:** To analysis and optimize an efficient technology for obtaining protein isolates from by-products of the domestic oil and fats industry, with a focus on utilizing sunflower meal.

**This research is particularly relevant** in the context of growing global demand for alternative protein sources, reducing agro-industrial waste, and developing efficient technologies that contribute to the sustainability and competitiveness of the domestic food industry.

**The introductory part** of the thesis highlights the importance of utilizing by-products from the domestic oil and fats industry, emphasizing the need for the development of efficient technologies to obtain high-quality protein isolates that will contribute to diversifying protein sources and reducing agro-industrial waste.

**The first chapter** analyzes the history, characteristics, and methods for obtaining protein isolates from by-products of the oil industry, highlighting their applications in the food industry and the socio-economic impact of their use.

**Chapter 2** describes the materials, chemical reagents, apparatus, and equipment used in the research, as well as the analysis methods applied in the experiment. The conclusions emphasize the efficiency and suitability of these methods and equipment for carrying out the research.

**Chapter 3** presents the results obtained from applying the method of extracting protein isolates from sunflower meal and analyzes the optimization of this procedure. The detailed study of the protein isolate includes the analysis of essential and non-essential amino acids, as well as phenolic compounds, and the conclusions underline the efficiency of the method and the characteristics of the obtained isolate.

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