



PROCEEDINGS OF THE
VIII INTERNATIONAL SCIENTIFIC
AND THEORETICAL CONFERENCE

MODERNIZATION
OF SCIENCE AND ITS
INFLUENCE ON GLOBAL
PROCESSES

22.08.2025

BERN
SWISS CONFEDERATION

with the proceedings of the

VIII International Scientific and Theoretical Conference

Modernization of science and its influence on global processes

22.08.2025

Bern, Swiss Confederation

Bern, 2025

UDC 082:001

M 78



<https://doi.org/10.36074/scientia-22.08.2025>

Chairman of the Organizing Committee: Goldenblat M.

Responsible for the layout: Bilous T.

Responsible designer: Bondarenko I.



M 78 **Modernization of science and its influence on global processes:**
collection of scientific papers «SCIENTIA» with Proceedings of the VIII International Scientific and Theoretical Conference, August 22, 2025. Bern, Swiss Confederation: International Center of Scientific Research.

ISBN 979-8-88955-783-8 (series) 

DOI 10.36074/scientia-22.08.2025

Papers of participants of the VIII International Multidisciplinary Scientific and Theoretical Conference «Modernization of science and its influence on global processes», held on August 22, 2025 in Bern are presented in the collection of scientific papers.

The conference is included in the Academic Research Index ReserchBib International catalog of scientific conferences and registered for holding on the territory of Ukraine in UKRISTEI (Certificate № 472 dated June 10th, 2025).



Conference proceedings are publicly available under terms of the Creative Commons Attribution-ShareAlike 4.0 International License (CC BY-SA 4.0) at the www.previous.scientia.report.

UDC 082:001

© Participants of the conference, 2025

© Collection of scientific papers «SCIENTIA», 2025

ISBN 979-8-88955-783-8

© NGO International Center of Scientific Research, 2025

CONTENT

SECTION 1.

ECONOMIC THEORY, MACRO- AND REGIONAL ECONOMY

ІНФОРМАЦІЙНЕ ЗАБЕЗПЕЧЕННЯ РОЗВИТКУ СИСТЕМИ ЕКОНОМІЧНОЇ
БЕЗПЕКИ ПІДПРИЄМСТВА

Василега В.Є. 9

ОСОБЛИВОСТІ АСИМЕТРИЧНОГО ЗГЛАДЖУВАННЯ ПРОСТОРОВОЇ
ПОЛЯРИЗАЦІЇ ТУРИСТИЧНОЇ ДІЯЛЬНОСТІ

Гук Ю.В. 12

ФАКТОРИ ТА ПЕРЕДУМОВИ РОЗВИТКУ КОНКУРЕНТНОГО ПОТЕНЦІАЛУ
ПІДПРИЄМСТВА

Левшук А.В. 15

SECTION 2.

ENTREPRENEURSHIP, TRADE AND SERVICE SECTOR

EYEBROW MODELING AND COLOR TRANSFORMATION: MODERN
APPROACHES AND FUTURE PERSPECTIVES

Котельніцка О. 18

OPTIMIZING THE PROMOTION OF LIGHT THERAPY IN MEDICAL EQUIPMENT
THROUGH CONSULTING STRATEGIES

Солтис О. 24

СУЧASNІ ПІДХОДИ ДО ЗАБЕЗПЕЧЕННЯ ТОЧНОСТІ ТА АВТОМАТИЗАЦІЇ
КОНТРОЛЮ ЯКОСТІ У ФАРМАЦЕВТИЧНІЙ ПРОМИСЛОВОСТІ

Киселькова О.І., Гончарук А.А., Бедір А.К.С. 30

SECTION 3.

MARKETING AND LOGISTICS ACTIVITIES

РОЛЬ МУЛЬТИМОДАЛЬНИХ ТА ІНТЕРМОДАЛЬНИХ ПЕРЕВЕЗЕНЬ У
РОЗВИТКУ ЛОГІСТИЧНОЇ СИСТЕМИ УКРАЇНИ

Мальнов Д.В. 34

ВПРОВАДЖЕННЯ КОНЦЕПЦІЇ ЕКОЛОГО-ВІДПОВІДАЛЬНОГО МАРКЕТИНГУ
В УМОВАХ СТИКОГО РОЗВИТКУ ПІДПРИЄМСТВА

Чернишов О.Д. 37

SECTION 4. MANAGEMENT, PUBLIC MANAGEMENT AND ADMINISTRATION

IT ENTERPRISES RISK MITIGATION METHODS

Ostapets A. 40

SECTION 5. SOCIAL WORK AND SOCIAL WELFARE

ЦИФРОВИЙ ПОМІЧНИК СТАРОСТІ: ПОТЕНЦІАЛ ТА РИЗИКИ ШТУЧНОГО ІНТЕЛЕКТУ

Семигіна Т.В. 44

SECTION 6. INTERNATIONAL RELATIONS

RIVALRY OF CULTURAL-CIVILIZATIONAL WORLDS: HISTORY AND TRANSITION

Shedyakov V.E. 48

SECTION 7. LAW AND INTERNATIONAL LAW

ЮРИДИЧНІ ЗАСАДИ ВІДПОВІДАЛЬНОСТІ БАНКІВ ЗА ЗБЕРЕЖЕННЯ ЦІННОСТЕЙ: СУЧASNІЙ СТАН ТА ПЕРСПЕКТИВИ РОЗВИТКУ

Найдьон А.В. 55

ЗАКОНИ ТА ЗВИЧАЇ ВІЙНИ: МІЖНАРОДНО-ПРАВОВЕ РЕГУЛЮВАННЯ ТА СУЧASNІ ВИКЛИКИ

Обушенко Н.М. 64

SECTION 8. MILITARY SCIENCES, NATIONAL SECURITY AND SECURITY OF THE STATE BORDER

THE STRATEGIC ROLE OF MILITARY COMMUNICATIONS IN ACHIEVING OPERATIONAL SUCCESS IN MODERN COMBAT OPERATIONS

Huseynov A. 68

НЕЙТРАЛІТЕТ ТА СТАНОВЛЕННЯ ЙОГО КОНЦЕПТУ

Ромчук М.С. 77

АНАЛІЗ ПРОБЛЕМ ВПЛИВУ КОГНІТИВНИХ ЗАГРОЗ НА СФЕРУ НАЦІОНАЛЬНОЇ БЕЗПЕКИ: ІНОЗЕМНИЙ ТА ВІТЧИЗНЯНИЙ ДОСВІД	81
Семененко Л., Кострач В., Кінь О., Поліщук О., Петренко С.	81

SECTION 9. VETERINARY SCIENCES

ОСОБЛИВОСТІ ЛІКУВАННЯ І ПРОФІЛАКТИКИ СИБІРКИ	
Завірюха Г.А., Яненко У.М., Кос'янчук Н.І.	87

SECTION 10. FOOD PRODUCTION AND TECHNOLOGY

INNOVATIVE APPROACHES TO SAUCE PRODUCTION THROUGH RAW MATERIAL PROCESSING	
Boroday A.B., Horobets O.M., Levchenko Yu.V.	90

SECTION 11. GENERAL MECHANICS AND MECHANICAL ENGINEERING

FROM ENGINE ROOM TO INDUSTRIAL PLANTS: TRANSFERRING ENGINEERING SKILLS ACROSS THE GLOBE	
Mashtalierov I., Maksimov K.	94

SECTION 12. ELECTRONICS AND TELECOMMUNICATIONS

ПЕРЕВАГИ ТА НЕДОЛІКИ КРЕМНІЮ НА ІЗОЛЯТОРІ З ТРАДИЦІЙНИМИ КМОН-СТРУКТУРАМИ	
Гула В.С., Віntonяк В.М.	100

SECTION 13. ECOLOGY AND ENVIRONMENTAL PROTECTION TECHNOLOGIES

OPERATIONAL MODES OF ENVIRONMENTAL SECURITY SYSTEMS IN THE ARMED FORCES FACING RADIATION AND CHEMICAL THREATS	
Akhundov R., Islamov I.	103

РУХЛИВІСТЬ ОРГАНІЗМІВ ЯК ІНДИКАТОР ВИЯВЛЕННЯ СУБЛЕТАЛЬНОЇ ТОКСИЧНОСТІ	
Щокіна М.М., Кривицька І.А.	112

SECTION 10.

FOOD PRODUCTION AND TECHNOLOGY

Boroday Anzhela Borysivna

PhD in Veterinary Sciences, Associate Professor

Poltava University of Economics and Trade, Ukraine

Horobets Oleksandra Mykhailivna

PhD in Technical Sciences, Associate Professor

Poltava University of Economics and Trade, Ukraine

Levchenko Yuliia Viktorivna

PhD in Technical Sciences, Associate Professor

Poltava State Agrarian University, Ukraine

INNOVATIVE APPROACHES TO SAUCE PRODUCTION THROUGH RAW MATERIAL PROCESSING

Sauces play an increasingly important role in modern nutrition, not only as flavor enhancers but also as carriers of valuable nutrients. Plant-based sauces, in particular, provide a wide range of biologically active compounds, including vitamins, minerals, antioxidants, and dietary fiber. These components contribute to improved digestion, support the immune system, and reduce the risk of chronic diseases [1].

Fruits, berries, and vegetables used as the basis for sauces are rich in polyphenols and flavonoids, which exhibit antioxidant and anti-inflammatory properties. Such sauces may also demonstrate choleric, diuretic, and mild sedative effects, thereby supporting metabolic processes. Moreover, they offer a natural way to reduce the intake of artificial additives, sugar, and saturated fats often present in industrially produced condiments [3].

The inclusion of plant-based sauces in the daily diet not only diversifies meals but also increases their nutritional value, making them an essential element of a healthy and balanced lifestyle [3].

The theses examine the impact of honeysuckle and amaranth on the structural, mechanical, and organoleptic properties of finished sauces .

Previous studies have established the high nutritional value of honeysuckle and amaranth [4, 5, 6].

It has been determined that one of the distinguishing features of honeysuckle berries is their early ripening period, which makes them one of the first sources of fresh vitamins after winter. Their sweet-and-sour taste with a slight tartness creates excellent opportunities for culinary applications, particularly in the production of sauces.

In sauce technology, honeysuckle berries can be used both as the main raw material and as a natural additive to enhance flavor, aroma, and nutritional value. Their high pectin content allows for improved texture and consistency of sauces without the need for synthetic thickeners. Moreover, the natural acidity of the berries contributes to product preservation and stability.

Thus, honeysuckle berries represent a promising ingredient for the development of innovative plant-based sauces with functional properties, meeting the growing demand for healthy and natural food products.

As for amaranth, in sauce technology it is valuable because it enriches the product with high-quality plant proteins, essential amino acids, and dietary fiber. Amaranth is also a source of squalene, vitamins, and minerals, which contribute to antioxidant protection, support cardiovascular health, and improve metabolism. The incorporation of amaranth into sauces not only enhances their nutritional profile but also provides a functional component that meets modern consumer demand for healthy and natural food products.

The incorporation of honeysuckle and amaranth into sauces not only increases their nutritional value but also creates functional products that align with modern consumer demand for healthy, natural, and innovative foods.

Previous studies indicate that both honeysuckle berries and amaranth possess significant potential for use in sauce technology. Honeysuckle is notable for its high content of anthocyanins, vitamin C, organic acids, and pectins, which provide antioxidant activity, improve product stability, and enhance functional properties. Amaranth, in turn, is a valuable source of high-quality plant proteins, essential amino acids, dietary fiber, squalene, and minerals that contribute to improved metabolism and overall health benefits.

The combination of these plant-based raw materials offers an opportunity to develop innovative sauces with enhanced nutritional value and functional characteristics. Such formulations align with current consumer trends toward natural, health-promoting, and technologically advanced food products.

In sauce production, apples and honeysuckle were incorporated as purees, prepared by sieving blanched fruits. To substantiate the inclusion of amaranth flour in sauces, its physicochemical properties were evaluated in comparison with corn

starch. The results indicate that amaranth flour contains higher levels of minerals and protein, as well as dietary fiber, compared to corn starch [3].

The effect of a composite combination of apple and honeysuckle purees with amaranth flour on the structural and mechanical properties of sauces was investigated. An apple sauce prepared with corn starch was used as the control (Figure 1).

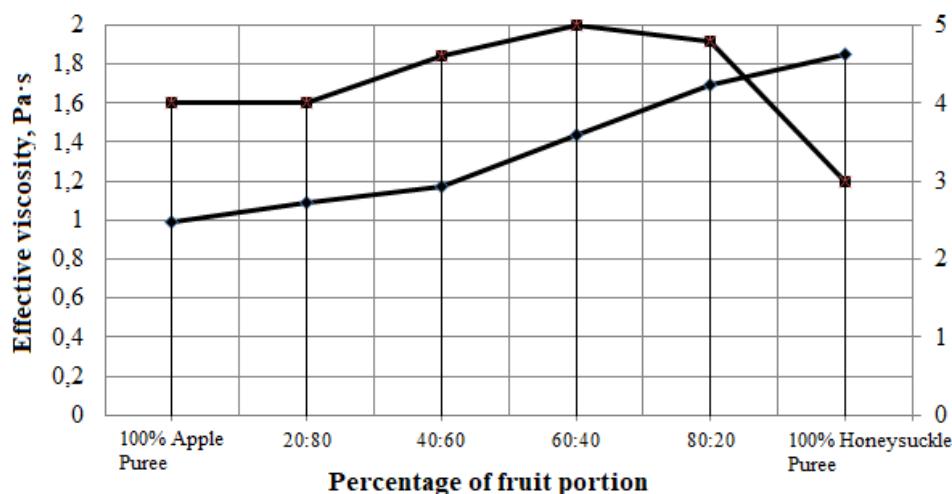
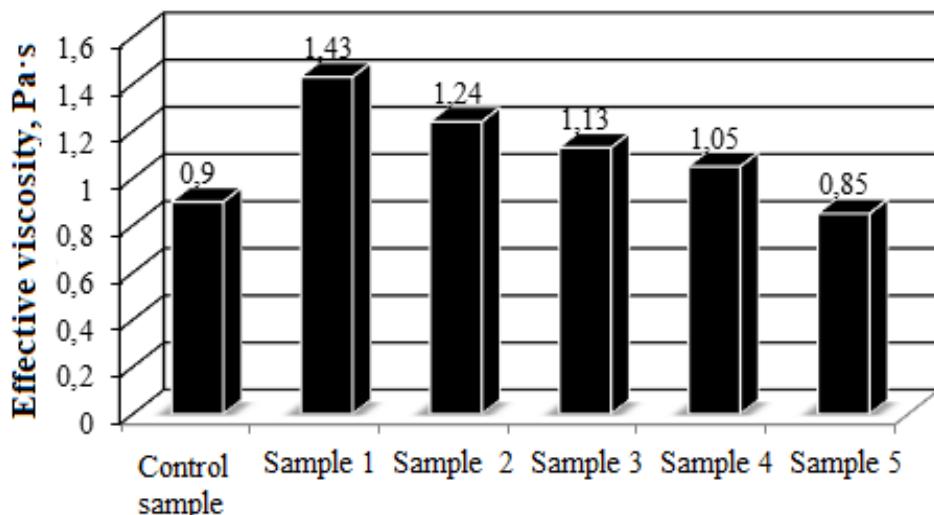


Fig. 1. Effect of Plant Component Ratios on Sauce Quality Parameters



Samples 1 to 5 with varying amounts of amaranth flour, from 100% to 0% content, in 20% intervals

Fig. 2. Effect of amount of amaranth flour

The results of the study confirm that, in terms of structural, mechanical, and organoleptic properties, the optimal formulation is a composition containing honeysuckle and apple purees in a 60:40 ratio when using corn flour.

The results of the sensory evaluation confirm that, with this compositional combination, the sauce exhibited a harmonious taste, characterized by a slight acidity and a subtle honeysuckle aftertaste.

At the next stage of the study, corn starch was replaced with amaranth flour.

It was confirmed that replacing corn starch with amaranth flour resulted in a thicker and more viscous sauce. Therefore, a study was conducted to reduce the amount of amaranth flour and replace it with a composite fruit mixture. The assessment was based on changes in apparent viscosity.

The resulting graphs (Figure 2) indicate that reducing the amount of amaranth flour by 25% improves the structural and mechanical properties of the sauce, whereas further reduction has an adverse effect.

Further research on sauces made with the new plant-based raw materials will focus on a comprehensive study of their chemical composition and biochemical indicators, microbiological stability, and the impact of technological parameters on product quality, as well as the evaluation of functional properties and health benefits, which will help ensure product safety and extended shelf life, while also enhancing consumer appeal and market competitiveness.

Thus, the initial stages of the study justified the feasibility of using honeysuckle puree and amaranth flour in sauce formulations due to their organic acid content and their potential as starch substitutes.

References:

1. Levchenko, Yu. V., Khomych, H. P., & Oliinyk, N. V. (2017). Development of technology for sweet sauces using Jerusalem artichoke and chaenomeles. *Scientific Works of ONAFT*, 80(2).
2. Khomych, H., Horobets, A., Levchenko, Y., Boroday, A., & Ishchenko, N. (2016). The study of main physical-chemical parameters of chaenomeles and products of its processing. *Eureka: Life Sciences*, (3), 50–56.
3. Khomych, H. P., Horobets, O. M., & Levchenko, Yu. V. (2025). Chaenomeles fruits and their application in the food industry.
4. Dochynets, I. V., Sylchuk, T. A., & Kyrpychenkova, O. M. (2025). Prospects for the use of amaranth flour in food service establishments. Retrieved March 30, 2025, from <https://dspace.nuft.edu.ua/server/api/core/bitstreams/359a400b-7936-4612-8cf4-f3324d69870d/content>
5. Edible honeysuckle. Chemical composition. (n.d.). Retrieved March 30, 2025, from <https://www.factosvit.com.ua>
6. Liashenko, O. V., & Karpenko, S. Yu. (2018). Biochemical composition of honeysuckle berries and prospects for their use. *Scientific Works of ONAFT*, 2(64), 132–137.