

SCI-CONF.COM.UA

EUROPEAN CONGRESS OF SCIENTIFIC DISCOVERY



**PROCEEDINGS OF XII INTERNATIONAL
SCIENTIFIC AND PRACTICAL CONFERENCE
NOVEMBER 10-12, 2025**

**MADRID
2025**

EUROPEAN CONGRESS OF SCIENTIFIC DISCOVERY

Proceedings of XII International Scientific and Practical Conference

Madrid, Spain

10-12 November 2025

Madrid, Spain

2025

UDC 001.1

The 12th International scientific and practical conference “European congress of scientific discovery” (November 10-12, 2025) Barca Academy Publishing, Madrid, Spain. 2025. 533 p.

ISBN 978-84-15927-30-3

The recommended citation for this publication is:

Ivanov I. Analysis of the phaunistic composition of Ukraine // European congress of scientific discovery. Proceedings of the 12th International scientific and practical conference. Barca Academy Publishing. Madrid, Spain. 2025. Pp. 21-27. URL: <https://sci-conf.com.ua/xii-mizhnarodna-naukovo-praktichna-konferentsiya-european-congress-of-scientific-discovery-10-12-11-2025-madrid-ispaniya-arhiv/>.

Editor

Komarytskyy M.L.

Ph.D. in Economics, Associate Professor

Collection of scientific articles published is the scientific and practical publication, which contains scientific articles of students, graduate students, Candidates and Doctors of Sciences, research workers and practitioners from Europe, Ukraine and from neighbouring countries and beyond. The articles contain the study, reflecting the processes and changes in the structure of modern science. The collection of scientific articles is for students, postgraduate students, doctoral candidates, teachers, researchers, practitioners and people interested in the trends of modern science development.

e-mail: madrid@sci-conf.com.ua

homepage: <https://sci-conf.com.ua>

©2025 Scientific Publishing Center “Sci-conf.com.ua” ®

©2025 Barca Academy Publishing ®

©2025 Authors of the articles

TABLE OF CONTENTS

AGRICULTURAL SCIENCES

1. *Карнаух В. П., Бобирь А. Д., Боровков Д. А., Горбонос Д. О.* 12
ОГЛЯД ІСНУЮЧИХ СПОСОБІВ ПОСІВУ ЦИБУЛІ
2. *Кобець О. М., Ленеть Є. І.* 17
КЛАСИФІКАЦІЯ ТА ПРИНЦИПИ РОБОТИ ОБПРИСКУВАЧІВ ТА РОЗБРИСКУВАЧІВ
3. *Кравченко Ю. В.* 21
БАРБУСИ В ДИКІЙ ПРИРОДІ ТА АКВАРІУМАХ
4. *Купка К. П.* 24
ЛАБІРИНТОВІ РИБИ В ПРИРОДІ ТА АКВАРІУМАХ
5. *Купка К. П.* 27
БІОЛОГІЧНІ ТА ЕКОЛОГІЧНІ ОСОБЛИВОСТІ АВСТРАЛІЙСЬКОГО ЧЕРВОНОКЛЕШНЕВОГО РАКА В ПРИРОДНИХ ТА ШТУЧНИХ УМОВАХ
6. *Литвиненко Я. А., Зайчук Я. О., Лавриненко Р. С., Литвиненко В. М.* 30
ІСНУЮЧІ СПОСОБИ ОЧИСТКИ КОРЕНЕПЛОДІВ БУРЯКІВ
7. *Малєгіна А. С., Слаква С. О.* 34
ОСОБЛИВОСТІ ПРОЯВУ ВОДНОЇ ЕРОЗІЇ НА СХИЛОВИХ ЗЕМЛЯХ
8. *Паталаха В. В., Остров І. Ф.* 39
ОБГРУНТУВАННЯ МОДЕЛІ ФУНКЦІОНУВАННЯ КУЛАЧКОВОГО КОНВЕЄРА-ОЧИЩУВАЧА
9. *Сидорчук А. С.* 42
БІОЛОГІЧНІ ТА ЕКОЛОГІЧНІ ОСОБЛИВОСТІ КЛАРІЄВОГО СОМА В ПРИРОДНИХ ТА ШТУЧНИХ УМОВАХ
10. *Синявський Р. М.* 46
БІОЛОГІЧНІ ТА ЕКОЛОГІЧНІ ОСОБЛИВОСТІ ПЕЦІЛІЇ ПЛЯМИСТОЇ В ПРИРОДНИХ І ШТУЧНИХ УМОВАХ
11. *Тимченко Д. О., Лунгу А. М., Матета С. К., Мережко М. М.* 50
СПОСОБИ ОЧИСТКИ ЗЕРНОВИХ МАТЕРІАЛІВ
12. *Шевченко А. М.* 55
БІОЛОГІЧНІ ТА ЕКОЛОГІЧНІ ОСОБЛИВОСТІ ЗОЛОТОЇ РИБКИ (*SARASSIUS AURATUS*) В ПРИРОДНИХ ТА ШТУЧНИХ УМОВАХ
13. *Шлапак А. К.* 58
БІОЛОГІЧНІ ТА ЕКОЛОГІЧНІ ОСОБЛИВОСТІ СТЕРЛЯДІ (*ACIPENSER RUTHENUS L.*) В ПРИРОДНИХ І ШТУЧНИХ УМОВАХ

MEDICAL SCIENCES

14. *Ахраров Х. Х., Махсудова Саодат Озод, Гафурова Осіє Дилмурод кизи, Назармухамедов Н. Ш.* 62
ФИЗИОЛОГИЧЕСКИЕ ОСОБЕННОСТИ КРОВООБРАЩЕНИЯ ГОЛОВНОГО МОЗГА

29. *Шанигін А. В., Марченко В. П.* 156
ПОШИРЕНІСТЬ ШКІДЛИВИХ ЗВИЧОК СЕРЕД МОЛОДІ ТА
ЇХНІЙ ВПЛИВ НА ФІЗИЧНЕ Й ПСИХІЧНЕ ЗДОРОВ'Я В УМОВАХ
ВІЙНИ

PHARMACEUTICAL SCIENCES

30. *Steblianko Ye., Kozub S.* 160
EFFECTS OF CAFFEINE USE ON HEALTH AND DAILY
FUNCTIONING AMONG MEDICAL STUDENTS

CHEMICAL SCIENCES

31. *Arutiunian M., Kozub S.* 163
LITHIUM AS A TRACE ELEMENT: ITS EFFECTS ON HUMAN
HEALTH AND MEDICAL USE
32. *Pavlova K., Kozub S.* 165
BIOCHEMICAL ROLE AND PHYSIOLOGICAL SIGNIFICANCE OF
VITAMIN C IN THE HUMAN BODY
33. *Задабек Д. К., Тунгышбаева У. О., Ахметсадыкова Ш. Н.* 168
КОМПЛЕКСНАЯ ОЦЕНКА БЕЗОПАСНОСТИ УПАКОВКИ И
АУТЕНТИЧНОСТИ МЁДА ПРИ ПОМОЩИ ПЫЛЬЦЕВОГО
АНАЛИЗА
34. *Ткач В. В., Кушнір М. В., Мінакова Т. Г., Петрусяк Т. В.* 174
ЧОТИРИ КОМБІНОВАНІ ХІМІКО-МАТЕМАТИЧНІ ЗАВДАННЯ В
БРАЗИЛЬСЬКОМУ СТИЛІ НА ТЕМУ КУБІНСЬКОЇ НАРОДНОЇ
ПІСНІ

TECHNICAL SCIENCES

35. *Kolomiitsev O. V.* 181
USE OF DIGITAL TECHNOLOGIES IN RESEARCHING THE
OFFENSIVE PROPERTIES OF KINETIC PROJECTILE
36. *Kuliush D., Moiko O., Kopylov D., Kucherenko D.* 188
ZERO TRUST 2.0: IMPLEMENTING QUANTUM PROTOCOL INTO
THE SECURITY OF CORPORATIONS
37. *Kurpenko M., Makalish B., Buniak A., Riabets V., Timoshin A.* 196
AUTOMATION OF COMPUTER SECURITY INCIDENT RESPONSE
PROCESSES (SOAR)
38. *Podvalnyi A., Ruban D., Storozhenko A., Yaremchuk A.* 201
COMPARATIVE ANALYSIS OF IAAS, PAAS AND SAAS SERVICE
MODELS
39. *Абилдаева М. Ибраимова С. Е., Изтелиева Р. А., Құралбекқызы А.* 203
КОМПЛЕКСНОЕ ИСПОЛЬЗОВАНИЕ НАТУРАЛЬНЫХ
АНТИОКСИДАНТОВ И НАНОСОРБЕНТОВ ДЛЯ
СТАБИЛИЗАЦИИ ФРИТЮРНЫХ МАСЕЛ

BIOCHEMICAL ROLE AND PHYSIOLOGICAL SIGNIFICANCE OF VITAMIN C IN THE HUMAN BODY

Pavlova Kira

Higher Education Applicant

Kozub Svitlana

PhD (Technical Sciences), Associate Professor

Kharkiv National Medical University

Ukraine

Vitamin C or L-ascorbic acid is a water-soluble vitamin that is widely distributed in natural products, used as a dietary supplement, and incorporated into various food and pharmaceutical formulations. The human body is unable to synthesize vitamin C endogenously; therefore, it must be obtained exogenously through dietary sources.

L-ascorbic acid is a potent reducing agent capable of readily donating electrons to other molecules. Owing to this property, vitamin C performs two primary biochemical functions: an antioxidant role, involving the neutralization of free radicals, and a cofactor role, associated with its participation in enzymatic hydroxylation reactions.

Vitamin C plays an essential role in maintaining the human immune system. It participates in wound healing, facilitates iron absorption, contributes to the formation of bone tissue and teeth, and supports the normal functioning of the nervous system. Collagen, the synthesis of which depends on the availability of vitamin C, is the principal structural component of connective tissue and plays a crucial role in the body's regenerative processes.

Scientific studies are investigating the potential ability of vitamin C, owing to its pronounced antioxidant properties, to mitigate the effects of free radicals and thereby slow down or prevent the development of certain oncological, cardiovascular, and other pathological conditions associated with oxidative stress. In addition, vitamin C supports immune system function and enhances the absorption of non-heme iron from plant-based foods.

Recommendations regarding the intake of ascorbic acid and other nutrients are established based on current dietary standards approved by relevant biomedical authorities. The normative values, which take into account an individual's age, sex, and physiological condition, include the Recommended Dietary Allowance – the average daily intake level sufficient to meet the nutritional requirements of most healthy individuals. This indicator is widely used in the development of balanced dietary plans, assessment of the nutritional status of populations, and the establishment of dietary guidelines.

Adequate Intake is defined as the level of nutrient consumption considered sufficient to maintain normal physiological functions of the body. This parameter is applied in cases where available scientific evidence is insufficient to establish a precise Recommended Dietary Allowance.

The Estimated Average Requirement is defined as the average daily nutrient intake level estimated to meet the requirements of approximately 50% of healthy individuals within a specific age and sex group. It is used to evaluate the adequacy of actual nutrient consumption in a population and to develop optimal dietary recommendations that ensure sufficient intake of essential nutrients.

There are several forms of vitamin C that differ in their chemical structure, solubility, and biological activity:

- *L-ascorbic acid* – the most common and biologically active form of vitamin C, present in the majority of dietary supplements and pharmaceutical preparations;

- *Sodium ascorbate and calcium ascorbate* – these are salt forms of vitamin C characterized by lower acidity and improved gastrointestinal tolerance;

- *Liposomal vitamin C* – an innovative form in which vitamin C molecules are encapsulated within liposomes, microscopic lipid vesicles that enhance bioavailability and protect the compound from degradation within the digestive tract;

- *Ester forms of vitamin C* – fat-soluble derivatives (such as ascorbyl palmitate) primarily used in cosmetic formulations and dietary supplements to enhance antioxidant protection of the skin and cellular membranes.

A particularly high concentration of vitamin C is found in fresh fruits,

vegetables, and berries, which are the main natural sources of this nutrient. The maximum content of ascorbic acid is preserved in freshly harvested and thermally unprocessed foods, as vitamin C is a thermolabile compound that is easily degraded by exposure to heat, light, and atmospheric oxygen.

For this reason, to ensure optimal intake of vitamin C, it is advisable to consume fresh produce immediately after harvesting or purchase. Additionally, it should be noted that prolonged storage, heating, or repeated thawing of fruits and vegetables significantly reduces their vitamin C content, which may adversely affect the biological value of these foods in the diet.

Thus, vitamin C is an essential compound required for the proper functioning of the human body. It participates in the biosynthesis of collagen, which determines the strength and elasticity of connective tissues, facilitates the absorption of dietary iron, supports immune system activity, and provides antioxidant protection to cells against free radical–induced damage. Moreover, vitamin C plays a significant role in metabolic regulation, accelerates wound healing processes, and contributes to the organism’s adaptation to stress conditions. Maintaining an adequate dietary level of vitamin C is a key factor in sustaining homeostasis, preventing oxidative stress, and promoting overall health and well-being.