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BOOK *of* ABSTRACTS

2024

International Conference
"Adriatic Biodiversity Protection" — AdriBioPro2024
1–4 October 2024
Kotor, Montenegro

ISBN 978-9940-9613-4-3
COBISS.CG-ID 30862084
DOI 10.5281/zenodo.13854380

International Conference
Adriatic Biodiversity Protection
AdriBioPro2024
01-04 October 2024, Kotor, Montenegro

Book of Abstracts

Institute of Marine Biology
University of Montenegro
Kotor, Montenegro
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TABLE OF CONTENTS

THE CONFERENCE

Welcome to the Third International Conference: Adriatic Biodiversity Protection – AdriBioPro2024. This landmark event, commemorating the 50th anniversary of the University of Montenegro and 25 years of the AdriaMed project, promises to be a pivotal gathering for advancing marine science and policy in the South Adriatic region. Against the dynamic backdrop of the SKILLS initiative, AdriBioPro2024 is dedicated to addressing the critical challenges and opportunities within the blue economy.

Participants

Our conference brings together a diverse community of researchers, policymakers, stakeholders, and enthusiasts, all united in their commitment to marine biodiversity, conservation, and sustainable practices. Through a series of plenary sessions, breakout discussions, and the engaging South Adriatic Sea Food Fair, participants will explore pressing issues such as marine litter, aquaculture, climate change impacts, and the conservation of aquatic ecosystems.

Format

Building on the successful formats of previous conferences, AdriBioPro2024 will foster a vibrant platform for sharing state-of-the-art research and innovative solutions. The insights gained here will be instrumental in shaping future marine science priorities and policies, ensuring a resilient and vibrant Adriatic environment. As we strive to balance conservation efforts with the development of the blue economy, this conference marks a significant step forward in our collective journey toward sustainable maritime heritage.

Background

University of Montenegro

In 2024, the University of Montenegro celebrates five decades of continuous contribution to Montenegrin society. The University of Montenegro has been and remains a field of challenging struggle for knowledge, freedom, and progress, where battles for the future of the country are fought through education, science, and art. Over the past fifty years, the university has played a pivotal role in nurturing the intellectual and cultural fabric of Montenegro, providing a platform for innovation and critical thinking that propels the nation forward.

AdriaMed Project

The FAO-AdriaMed Project (Scientific Cooperation to Support Responsible Fisheries in the Adriatic Sea) is an FAO Regional Project funded by the Italian Ministry of Agriculture, Food and Forestry Policies (MiPAAF), the European Commission since 2007, and the Croatian Ministry of Agriculture since January

2016. Operative since September 1999, the project aims to promote scientific cooperation among Adriatic countries, including Albania, Croatia, Italy, Montenegro, and Slovenia. By aligning with the Code of Conduct for Responsible Fisheries (FAO 1995), AdriaMed seeks to enhance the management of fishing activities, contributing to a broader understanding of the Adriatic Sea's shared fishery resources. This initiative is crucial for the sustainable management of biological resources that transcend geopolitical boundaries.

SKILLS Project

The SKILLS project, spanning from September 2023 to December 2027, aims to bolster the availability of skilled labor in the South Adriatic region's blue economy sectors. With a total budget of close to 6 million euros, including significant EU funding of 4 million euros, the project operates through a consortium of diverse partners. These include the University of Montenegro - Institute of Marine Biology as the lead partner, the Department of Labor Market Policies, Education, Training from Puglia Region, Italy, the Service for the Competitiveness of Productive Systems from Molise Region, Italy, the State Agency for Strategic Programming and Aid Coordination, Albania, the Ministry of Economic Development of Montenegro, and the Ministry of Agriculture and Rural Development, Albania. Through collaborative efforts, the SKILLS project endeavors to enhance existing educational pathways, establish novel ones, and implement on-the-job training schemes, thereby empowering the workforce and fostering economic growth in the region.

Content

AdriBioPro2024 is more than a conference; it is a call to action for the protection and sustainable use of our marine resources. Let us embark on this journey of exploration, collaboration, and innovation, working together to ensure a prosperous and sustainable future for the South Adriatic region.

Topics Addressed

1. Marine and freshwater biodiversity, systematics, taxonomy, and data management
2. Climate change and impacts to marine ecosystem
3. Aquatic alien and invasive species
4. Fisheries resources and fishing technology
5. Aquaculture and blue growth
6. Marine litter, ecotoxicology, and water pollution
7. Marine protected areas, conservation of aquatic resources and ecosystems
8. Environmental education
9. Elasmobranch biodiversity, conservation and management

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Exploring the nutritional potential of *Ulva lactuca* from Boka Kotorska Bay

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Abstract

Seaweeds hold significant promise as a sustainable, nutrient-rich food source with notable health benefits. This study aimed to assess the nutritive potential of *Ulva lactuca* Linnaeus from Boka Kotorska Bay (Adriatic Sea) and explore its potential for commercial purposes. The samples of *Ulva lactuca* were identified, rinsed, dried, and ground into powder for the analysis of their chemical and mineral composition, as well as fatty acid and amino acid profiles. *Ulv*a powder was found to contain 19.2% protein, 21.4% ash, and 3.8% lipids. Potassium and calcium were the dominant macro elements, while the micro element content was low. *Ulva* powder had 42.57% saturated fatty acids (SFA), of which palmitic acid was the major SFA. Monounsaturated fatty acids comprised 18.36%, and the level of polyunsaturated fatty acids (PUFA) was 38.33%. Alpha-linolenic acid (n-3 PUFA) was the major PUFA at 13.74%, followed by linoleic acid (n-6 PUFA) at 11.26%. The ratio of n-6 to n-3 PUFA was 1.43, considered beneficial for health as these fatty acids cannot be synthesized by the human body and are important for disease prevention. The amino acid profile of *Ulv*a powder showed a high content of amino acids (92.65 g/100 g protein), of which essential amino acids (EAA) accounted for 33.19 g/100 g protein, with leucine and lysine being the most abundant. Other significant EAA included valine, isoleucine, phenylalanine, and threonine, while methionine and histidine were the limiting EAA. Non-essential amino acids were 59.46 g/100 g protein, with glutamic acid and aspartic acid being the most prevalent. The amino acid composition of *Ulva* meets WHO and FAO recommendations regarding amino acid requirement patterns. In conclusion, *Ulva lactuca* from Boka Kotorska Bay demonstrates significant nutritive value, making it suitable for human nutrition as a dietary supplement or novel food ingredient. Additionally, it shows promise as a supplementary protein source in fish feed.

This research was supported by the COST action Tomorrow's 'wheat of the sea': Ulva, a model for an innovative mariculture (seawheat) CA20106.

Keywords: seaweed, fatty acids, amino acids, food, feed

Publisher: Institute of Marine Biology, University of Montenegro
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Tel +382 32 334 569
http://www.ucg.ac.me/ibm
http://www.adribiopro.ucg.ac.me
adribiopro@ucg.ac.me
For the Publisher: Dr. Mirko Đurović, director
Technical Editors: Dr. Zdravko Ikica
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This publication is available only in electronic form

Image on the front cover Institute of Marine Biology
Photo: Ranko Maraš
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Photo: University of Montenegro

For bibliographic purposes, this publication should be cited as follows:

International conference "Adriatic Biodiversity Protection – AdriBioPro2024". 01-04 October 2024, Kotor, Montenegro. Book of Abstracts. 2024. Institute of Marine Biology, University of Montenegro. 117 pp.

This publication has been produced with the assistance of the European Union. The contents of this material are the sole responsibility of University of Montenegro, Institute of Marine Biology and can in no way be taken to reflect the views of the European Union.
The project is co-financed by ERDF and IPA II funds of the European Union.

CIP - Каталогизација у публикацији
Национална библиотека Црне Горе, Цетиње