



Adriatic Biodiversity Conservation Center
AQUARIUM BOKA

Centar za zaštitu biodiverziteta Jadrana
AKVARIJUM BOKA



AdriBioPro2022 | 13-17 June
International Conference: Kotor
Adriatic Biodiversity Protection | Montenegro



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KOTOR



INTERNATIONAL YEAR OF
ARTISANAL FISHERIES
AND AQUACULTURE
2022



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Adriatic Biodiversity Protection
AdriBioPro2022
13-17 June 2022, Kotor, Montenegro

Book of Abstracts

Institute of Marine Biology
University of Montenegro
Kotor, Montenegro
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THE CONFERENCE

The second International Conference: Adriatic Biodiversity Protection – AdriBioPro2022 is focused on how state-of-the-art research on Adriatic biodiversity protection, conservation of coastal and marine areas and sustainable use of marine resources can contribute to policy- and decision-making. Special attention is put on valorization of Adriatic biodiversity, both marine and freshwater, as tourism offer. Organized to include plenary and breakout sessions covering both disciplinary and interdisciplinary perspectives, Conference results will be used in shaping future marine science priorities and policy in Montenegro and other Adriatic countries. The Conference follows format of the first international conference held in 2019, Adriatic Biodiversity Protection – AdriBioPro2019, which provided updated scientific, decision-making and policy-relevant information across a broad array of different Adriatic issues, marine biology, and related scientific disciplines.

Background

The Institute of Marine Biology of the University of Montenegro is implementing project Explore Cross-border Aquatic Biodiversity – [EXChAngE](#). Project is developing a new tourism product – Blue Pass, which will enable visits of new thematic routes with improved infrastructure: Dubrovnik and Aquarium (Croatia), Kotor and Aquarium Boka (Montenegro), Hutovo Blato Aqua Path, and Mostar Old Bridge and River Neretva (Bosnia and Herzegovina) and attracts more tourists in the area. The second international conference “Adriatic Biodiversity Protection – AdriBioPro2022” is final project event.

Recent research results indicate the cumulative impacts of human activities in the Mediterranean, ranking it as a hotspot of marine biodiversity, and one of the most heavily impacted marine region worldwide. One of the most intensely used and severely degraded regions of the Mediterranean is the Adriatic Sea. It implies a necessity of developing appropriate and effective policy-responses including adaptation actions, enhancement of resilience and implementation of mitigation activities. The Conference will address alterations of Mediterranean ecosystems, with focus on the Adriatic Sea and its biodiversity and analyse widespread conflict among marine users. By presenting the latest science, the Conference will facilitate, synthesize, and summarize the science-policy dialogue.

Topics Addressed

1. Marine biodiversity and conservation
2. Freshwater biodiversity and conservation
3. Cross-border aquatic biodiversity (EXChAngE event)
4. Aquatic alien and invasive species
5. Marine and freshwater pollution
6. Sustainable use of marine resources

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Assessment of mineral composition of blue crab (*Callinectes sapidus*) shell from Tivat Bay and Ulcinj coastal waters

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Abstract

The blue crab (*Callinectes sapidus*) has been considered an invasive species distributed in the Adriatic and other parts of the Mediterranean Sea, and represents a significant threat to the global marine ecosystems, because it may cause native species extinction and transformation of entire ecosystem functioning. Valorization of the blue crab waste (i.e. shell) into new products has been sought as a promising solution to reduce its negative effects. Therefore, the evaluation of chemical composition with a focus on the mineral composition of the blue crab shell was carried out within this research. For that purpose, blue crabs were caught in two different sites of the coastal part of the Adriatic Sea (Tivat Bay and Ulcinj). The samples of the blue crab were cooked by steaming for 10 min and then, shell from crab claws, head and legs (sample I) were separated from the shell of the rest of the body (cephalothorax) (sample II). The obtained results showed that both samples from Tivat Bay and Ulcinj were rich in calcium and magnesium. Calcium in the crab shell is in the form of calcium carbonate. Samples I and II from Tivat Bay and Ulcinj were also characterized with higher content of sodium and potassium. Regarding microelements, the samples had lower amounts of iron, manganese, zinc and copper. When evaluated the safety, it was determined that the concentrations of cadmium, arsenic and mercury in the samples were low or under detection limits, whereas the concentration of lead ranged between 1.32 and 1.75 mg/kg, indicating that crab shells accumulated lead. Based on the findings, it can be concluded that due to high calcium content blue crab shells from Tivat Bay and Ulcinj coastal waters have metal removal capacities and hence have a great potential as an adsorbent for the remediation of metal-bearing solutions. This potential, combined with the low cost of crab shells, could result in a cost-effective effluent treatment system.

Keywords: shell, valorization, minerals, heavy metals, adsorbent

Comparative analysis of the chemical composition of the blue crab *Callinectes sapidus* claw meat from two distinct localities in Adriatic coastal waters

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Abstract

This study aimed to evaluate the nutritional quality claw meat of invasive species blue crab (*Callinectes sapidus*) caught in the different sites of the coastal part of the Adriatic Sea (Tivat Bay and Ulcinj). Crabs were cooked by steaming for 10 min. Afterward meat was picked from the claw by hand. The results of the analysis showed that the protein content in claw meat samples from Ulcinj and Tivat Bay were 16.83% and 15.85%, respectively. The fat content was 0.20% for the Ulcinj sample and 0.28% for the Tivat Bay sample. Similar content of saturated (SFA), monounsaturated (MUFA), and polyunsaturated (PUFA) fatty acid were determined in claw meat of both samples. Palmitic acid (C16:0) was the most abundant SFA in both samples, while oleic acid (C18:1n9c) was the most dominant in MUFA. Over 40% of the total fatty acids in crayfish meat were constituted of PUFA, of which the highest parts were n-3 fatty acids, especially eicosapentaenoic acid (C20:5 n3) acid. The amounts of the amino acids of the claw meat were found to be similar. Glutamic acid was the major amino acid claw meat. The total essential amino acids were similar in Ulcinj and Tivat Bay samples 14.62 g and 14.71 g / 100 g cooked meat. The ratios of essential to nonessential amino acids in claw meat from Ulcinj and Tivat Bay were 1.37 and 1.43, respectively. Moreover, lysine and methionine amino acids, which are often limiting amino acids in staple foods, were found to be abundant in this species. Lysine was (1.21, 1.15 /100 g protein) while methionine was (0.53, 0.50 /100 g protein). Claw meat was rich in terms of metal content, and their concentrations are the following: Na>K>Ca>Mg>Zn>Cu>Fe. The concentration of heavy metals like Pb, Cd, Hg and As were under detection limits. Obtained results indicated that the claw meat as an edible portion of the crab body is nutritive rich in omega and essential amino acids, toxicologically safe and nutritionally complete.

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Keywords: *Callinectes sapidus*, nutritive value, fatty acids, amino acids, minerals