


ICERAT'21

6TH INTERNATIONAL CONGRESS ON
ENVIRONMENTAL RESEARCH
AND TECHNOLOGY



ABSTRACT AND FULL TEXT BOOK

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**6. International Congress on
Environmental Research and Technology
(ICERAT'21)**

13-14 December 2021

On Online

ABSTRACT AND FULL TEXT BOOK

**Prof. Dr. Fatma Cevik
Editor**



The papers appearing in this book compose the abstracts and full texts of the congress titled 6. International Congress on Environmental Research and Technology (ICERAT'21) held on 13-14 December 2021 on online. Papers were selected by the organising committee to be presented in oral and were subject to review by the invited reviewers.

6. International Congress on Environmental Research and Technology

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WELCOME

Dear participants and dear invited speakers,

We are excited to hold the 6th International Congress on Environmental Research and Technology, under the responsibility of Çukurova University. This year, due to the coronavirus pandemic, we had to hold our congress online.

At this current time, the world around us is changing at a very rapid pace. Some changes are beneficial, but many of the changes are causing damage to our planet. Due to increase in the human population and consumption habits, there has also been an increase in pressure on the natural resources and ecosystem services that we rely on for survival.

As the human population increases, natural resources and ecosystem services are used rapidly and potentially degraded, the future of humans on earth is in jeopardy. This is one major example of why environmental science and environmental technology are important and valuable.

We aimed this congress to bring together academic scientists to exchange and share their experiences and results on their research about environment and environment technology.

Now, I would like to thank participants, invited speakers, the organization committee, and the scientific committee.

Finally, I would like to thank the congresses coordinator Prof. Dr. Yeşim Yalçın Mendi, Nobel publish and Associate Professor Behzat BALCI, Assistant Professor Elçin KARAKURT, Doctor Evşen GÜZEL and Research Assistant Yetkin SAKARYA.

I wish you all a successful and effective congress.

Thank you very much.

Prof. Dr. Fatma ÇEVİK



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Prof. Dr. Kanchit Thammasiri, Mahidol University, THAILAND

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Dr. Ulas Im, Aarhus University, DENMARK

Dr. Maura Manganelli, Istituto Superiore di Sanità, ITALY

Dr. Daisuke TANAKA, Principal Scientist, National Agriculture and Food Research Organization, JAPAN

Determining and Comparing the Elemental Composition of Muscle Tissues of Wild and Farmed Fish Species obtained from Northeast Mediterranean: A Risk Analysis for Human Consumption

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It was aimed to determine the concentrations of several heavy metals in muscle tissues of 18 wild and 2 farmed species obtained from 6 stations and 3 different fish farms, which were between Hatay and Antalya provinces in the Northeast Mediterranean. The metal analysis of tissue samples was conducted using the Inductively-coupled Plasma Mass Spectrometry (ICP-MS) method. Given all the tissue samples, the mean metal concentrations were found to be as follows; Li: <0.001 - 0.15, Al: <0.0006 - 2.54, Cr: <0.001 - 0.49, Mn: <0.0002 - 1.05, Fe: <0.001 - 0.02, Cu: <0.006 - 1.30, Zn: 1.76 - 15.38, As: 0.52 - 35.10, Sn: <0.0004 - 2.04. Co, Ni, Cd, and Pb were found to be lower than the detectable limits in all tissue samples. Weekly tolerable limits, target hazard quotients, and cancer risk levels of metals were determined in muscle tissues of the wild and farmed fish species. When compared to the wild species, they were found to be very lower in farmed fishes and consuming these fishes was determined to not cause any health problems. For the wild samples, however, inorganic As concentrations were found to be risky from carcinogenic and non-carcinogenic aspects. Moreover, the mean metal concentrations in muscle tissues of fishes obtained from the Northeast Mediterranean were compared to the national/international codex limits and it was found that all the metal concentrations in tissue samples were lower than the upper limits set by Turkish Food Codex (TFC), European Union (EU), and World Health Organization (WHO).

Keywords: Northeast Mediterranean, Heavy metals, Health risk assessment, Marine Fish, Food safety