Hochschule Karlsruhe
University of
Applied Sciences

كليـــــة العلوم
السملالية - مراكش
FACULTÉ DES SCIENCES
SEMLALIA - MARRAKECH

WEFE2023

BOOK OF ABSTRACTS

SmaCuMed International Conference on
Water-Energy-Food-Ecosystem Nexus in
the Mediterranean Region

November 15-17, 2023
Marrakesh (Morocco)

SmaCuMed

www.smacumed.eu

Introduction

Welcome to the SmaCuMed International Conference on Water-Energy-Food-Ecosystem Nexus in the Mediterranean Region (WEFE2023) took place from 15th to 17th November 2023 in the Mohamed VI Museum of Water Civilization in Morocco (Marrakech, Morocco).

The SmaCuMed WEFE Nexus Conference is organized by the Cadi Ayyad University of Marrakech (Morocco) and the Karlsruhe University of Applied Sciences (Germany), under the framework of the PRIMA project SmaCuMed (www.smacumed.eu).

SmaCuMed "Smart irrigation Cube for sustainable agriculture in the Mediterranean region" is a joint research project from the European Union's EU-Prima initiative - A joint program focused on developing and applying solutions for food systems and water resources in the Mediterranean basin.

The Conference focused on the Mediterranean dimension, but it was open to participants from outside the region who share the same interests and wish to learn from the Mediterranean experience. More than 200 participants from 12 countries joined the conference.

« The Water-Energy-Food-Ecosystem Nexus (WEFE Nexus) approach highlights the interdependence of water, energy and food security and ecosystems – water, soil, and land – that underpin that security. The Nexus approach identifies mutually beneficial responses that are based on understanding the synergies of water, energy, and agricultural policies. It also provides an informed and transparent framework for determining the proper trade-offs and synergies that maintain the integrity and sustainability of ecosystems. »

The conference committee

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- Prof. Fatima JAITI (Moulay Ismail University, Morocco)
- Prof. Jan HOINKIS (Karlsruhe University of Applied Sciences, Germany)
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- Prof. Majida LAHROUNI (Cadi Ayyad University of Marrakech, Morocco)
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SMACUMED International Conference on Water-Energy-Food-Ecosystem Nexus in the Mediterranean Region (WEFE 2023)

Wednesday, November 15, 2023 - Friday, November 17, 2023

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Report of Abstracts

(DRS). The performance of the prepared materials have been evaluated in the photodegradation of Rhodamine B and ciprofloxacin, as well as 4-nitrophenol reduction. The photostability of the prepared materials has been evaluated by recycling experiments. Thus, a good reusability of the photocatalyst has been observed in many successive catalytic runs.

Posters session / 40

Incorporation of pumpkin peel extract into a pumpkin pulp formulation as a natural preservative

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Extract rich in preservative compounds was obtained from pumpkin peels by heat-assisted extraction, with water as solvent. This extract was incorporated into a ready-to-use pumpkin pulp product, in a concentration of 5g/kg, in order to replace the use of potassium sorbate (control). The product shelf-life was evaluated regarding microbial load and colour stability considering the best before date of the commercial product (30 days). For that purpose, the samples were stored at room temperature and evaluated on the day of production and after 7, 14, 21, 30, and 45 days of storage. Microbial load, it was evaluated in terms of aerobic plate count (total viable count; ISO 4833-2:2013), coliforms (and E. coli; ISO 4832:2006), and yeasts and moulds (ISO 21527-1/2:2008). For the physicochemical parameters, the colour was assessed by chromatic analysis in the CIELAB colour space, measuring L*(lightness), a* (redness), and b*(yellowness) to obtain the palette of tones and the chroma values of the pulp formulations. In both pulp products, with the addition of extract and control, no microbial growth was evidenced up to the 45th days of storage. This result demonstrates the great efficiency of using the natural extract to replace potassium sorbate, a traditional but artificial preservative widely used in the food industry. Meanwhile, despite the satisfactory result obtained in terms of antimicrobial protection, the colour was clearly affected. Through both the RGB and L*, a*, *and b* parameters it was possible to verify the loss of colour of the pulp formulation containing the natural extract during the storage days, while in the control formulation it was less noticeable. Considering the preservative potential of the extract, new formulations will be tested with different concentrations, aiming a healthier pulp product and promoting a circular economy.

Posters session / 70

Arbuscular Mycorrhizal Fungi Improves Yield and Quality Attributes of Melon Fruit Grown Under Greenhouse

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