Special Issue

Enhancing Plant Quality and Sustainability in Aquaponics Systems

Message from the Guest Editors

Aquaponics uses Organically Enriched Water (OEW) from aquaculture to cultivate plants, drastically reducing carbon emissions, water, and fertilizer usage compared to traditional agriculture and aquaculture. The advent of Aquaponics 4.0—integrating IoT, Meta-Analysis, and AI—enhances this system by optimizing efficiency and sustainability. Additionally, nutrient supplementation in OEW for plants with high nutrient demands, coupled with alternative feeds and eustress-inducing factors, elevates crop quality. As part of Integrated Agri-Aquaculture Systems (SAAI), aquaponics supports Sustainable Development Goals by promoting efficient water and nutrient use, minimizing chemical inputs, and conserving biodiversity. It contributes to food security, waste reduction, soil health, and energy efficiency. Thorough evaluation of these advancements is crucial for improving plant quality and sustainability within this eco-friendly food system. Emerging trends in agri-aquaculture offer a promising pathway to develop high-quality, sustainable food systems amidst climate change challenges.

Guest Editors

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Message from the Editor-in-Chief

Horticultural plants and their products provide sustenance, health, and beauty. A confluence of factors is putting increasing pressure on horticultural production to evolve, and innovative research is addressing these challenges. *Horticulturae* provides a venue to communicate research results in a rapid manner with open access, allowing everyone the opportunity to stay abreast of leading research addressing horticulture. I invite you to consider publishing the results of your research in this high quality, peer-reviewed journal.

Editor-in-Chief

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