



**SPEECH INFORMATION (For Conference Program Book)**

Topic	微生物策略於環境友善與永續海水養殖的應用 Microbial Strategies for Environmentally Friendly and Sustainable Marine Aquaculture
Abstract	<p>Microorganisms play essential roles in promoting sustainable and environmentally friendly practices in aquaculture. This presentation focuses on our current research exploring microbial applications across three integrated directions. First, we investigated specific probiotic strains to enhance disease resistance in grey mullet (<i>Mugil cephalus</i>), demonstrating that targeted probiotics can significantly improve immune responses and survival rates against <i>Nocardia seriolae</i> infection, providing a viable alternative to conventional antibiotic use. Second, we developed a microbial fermentation strategy using <i>Bacillus</i>-based probiotics to convert black soldier fly larvae into high-quality feed for juvenile crayfish, which enhanced growth performance while promoting circular utilization of aquaculture and insect biomass. Third, we developed a system by using pickled mustard wastewater to cultivate microalgae as feed for cultured clams (<i>Meretrix</i> spp.), effectively lowering feed costs and recycling byproducts. Collectively, these studies illustrate a dual-track microbial strategy that simultaneously addresses disease management and resource recovery, demonstrating the multifaceted roles of microorganisms in marine aquaculture. By integrating probiotics and microbial bioconversion techniques, my research provides practical frameworks for environmentally sustainable and resource-efficient aquaculture practices. The findings highlight the potential for microbial interventions to optimize growth, improve animal health, reduce environmental impact, and contribute to circular aquaculture systems, offering insights for both applied research and industry implementation.</p>

