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**AOAC International Science Programs:
Solutions And Interventions To Mitigate Antimicrobial Use And Resistance In
Aquaculture**

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Abstract

The escalating issue of antimicrobial use and resistance in aquaculture and other livestock productions necessitates targeted interventions, particularly in countries with significant aquaculture industries like Vietnam. This study presents potential solutions and interventions to mitigate antimicrobial resistance (AMR) and associated risks in aquaculture and seafood. Key interventions include implementing robust biosecurity measures, promoting the use of vaccines and probiotics, and improving farming practices to reduce disease incidence. Enhancing regulatory frameworks and enforcing stringent monitoring systems of antimicrobial use (AMU) and AMR are crucial for ensuring compliance with best practices. Certification schemes and adherence to international food trade standards significantly influence antibiotic use, as these standards often require reduced reliance on antimicrobials and adherence to rigorous safety protocols.

The International Centre for Antimicrobial Resistance Solutions (ICARS; www.icars-global.org) plays a pivotal role in supporting the testing of interventions and solutions for prudent AMU and reducing AMR in aquaculture and livestock productions. Examples from Vietnam will be presented. ICARS provides technical assistance, funding, and strategic guidance to implement sustainable AMU practices in low- and middle-income countries. Education and training programs aimed at farmers and stakeholders are essential to increase awareness and adoption of sustainable practices. Evidence from integrated approaches combining scientific, regulatory, and community-based strategies is crucial to addressing AMR effectively. A comprehensive approach tailored to the specific needs of Vietnamese aquaculture, supported by ICARS initiatives, certification, international trade incentives, and joint efforts with the industry, can significantly reduce antimicrobial use and resistance, thereby promoting a more sustainable and resilient aquaculture sector.

Keywords: AMR, AMU, solutions, AOAC