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RESEARCH REPORTS

Sustainable Aquaculture for a Secure Future

Title: Assessing the reliability of water-test kits for use in pond aquaculture

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Abstract: Water-analysis kits are useful for practical aquaculture only if they provide equivalent decision-making as compared to standard water-analysis methods. This study used weighted Cohen's kappa (κ) statistics to compare management decisions made by farmers who used water-analysis kits (e.g., Seneye slide kit, Tetra EasyStrips, API test strips, Seachem Ammonia Alert, Salifert Profi test kit, and Hach dissolved oxygen (DO) and alkalinity kit) and decisions made by those who used standard methods. The decisions made by farmers were similar for water-analysis kits and standard methods, except for Tetra and API test strips, when measuring nitrate concentrations. The highest conformity between the two methods (κ -value = 1.0, $P < 0.0001$) was obtained with the Hach and Salifert Profi test kits (for measuring DO) and the API test strip (for measuring total hardness). The rapid, simple measurements by the kits appear suitable for use by farmers if they are properly maintained and manufacturer's instructions are followed.

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