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RESEARCH REPORTS

SUSTAINABLE AQUACULTURE FOR A SECURE FUTURE

Title: Microbiological hazards of tilapia culture systems

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Abstract: Fecal coliform levels were measured in seven freshwater fish culture systems to assess potential microbiological hazards. Over a two month period, fecal coliform concentrations in two tilapia research facilities varied from 1 to 10^4 colony forming units (CFU) per 100 ml of water, at a mean level that could indicate the presence of human pathogens that may be hazardous to fish handlers and consumers. Over a one-month period, five commercial systems were found to contain *Escherichia coli*, *Clostridium perfringens*, Enterococci, and fecal coliforms. The concentration of fecal coliforms at the commercial sites was higher than the level found at the research facility. The presence of such organisms creates a potential for microbiological hazards in these systems. No *Salmonella* was detected in the systems. The source of these indicator organisms was not determined, nor were any host organisms obvious in the system. The findings in this study indicate that monitoring fish culture facilities for microbiological safety should be considered. In addition, workers should be aware of personal hygiene when entering, while working in, and when departing fish culture facilities.

This abstract was excerpted from the original paper, which was published in K. Fitzsimmons and J. Carvalho Filho (Editors), *Tilapia Aquaculture in the 21st Century*, Fifth International Symposium on Tilapia Aquaculture. American Tilapia Association and Departamento de Pesca e Aqüicultura/Ministério da Agricultura e do Abastecimento, Rio de Janeiro, Brazil, pp. 479–485.

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