Assessment of Milkfish Farming and Occurrence of *Mycobacterium marinum* Infection in Selected Fish farms of Zanzibar, Tanzania

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Milkfish farming under mariculture system in Zanzibar is at infancy stage, it faces low production and health problems. The purpose of this study was to assess the milkfish farming practices and occurrence of *Mycobacterium marinum* infection in selected milkfish farms in Zanzibar, Tanzania. A questionnaire survey was conducted to 24 milkfish farmers on general management system, fish health and related problems. Pond physicochemical characteristics were assessed using standard procedures. Pond water (24), sediments (24) and fish (240) samples were collected for laboratory analysis of M. marinum using standard procedures. Majority (92%) of farmers were smallholder with backyard ponds and get training on farming annually. The common (91.7%) pond type was the earthen which were adopted from salt pans and practiced polyculture rearing technique. Fingerings were sourced from the sea and some farmers did not feed their fish and there was no routine water exchange in ponds. All fish farmers were not aware about fish health and diseases. Mortalities and other fish problems were reported. Water temperature ranged between 29.3 °C to 37.1 °C and it varied significantly (P<0.05) between ponds. Dissolved Oxygen ranged between 1.9 and 6.1 mg/l while the mean pH was 7.5 ± 0.5 and 8.2 ± 0.2. Fish length was 10 and 35 cm, weight 14.1 to 521.5 g. All fish had no lesions. A total of 110 samples had bacterial growths on Lowenstein- Jensen media but only 12 (4.2%) were AFB positive. No any isolate was found to have DNA band size of 1030 bp for Mycobacteria which implied that they were not Mycobacterium. It is concluded that fish pond management was poor and farmers had not realized the optimal production of milkfish. Health related problems exist in fishponds but not mycobacteriosis. Continuous education on fish farming has to be provided to farmers and more research on fish diseases including mycobacteriosis are recommended.