**POTENTIAL RISK FACTORS ASSOCIATED WITH TILAPIA MORTALITY IN EGYPT**

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**Introduction:** Egypt is the top aquaculture producer in Africa and the 3rd largest tilapia producer globally. Nile tilapia in particular is the cornerstone of fish farming in Egypt. Recently, fish farms have experienced unusual tilapia mortality during summer season. Epidemiological surveys (in 2015) indicated that 37% of fish farms in the three most important Egyptian aquaculture governorates; Kafr El Sheikh, Behera and Sharkia were affected with an average mortality rate of 9.2% and a potential economic impact of around US$100 million. The causes remain unclear, however, a multifactorial aetiology is suspected.

**Objective:** The objective of this study was to identify potential risk factors associated with tilapia mortality in the largest producer governorates in order to conclude strategies for their control.

**Methods:** A questionnaire based cross-sectional study was conducted between June to September 2018 among five tilapia producer governorates in Egypt namely, Kafr El Sheikh, Behera, Sharkia, Fayoum & Menia.

**Results:** Preliminary data indicated thatfarms receiving effluent water had higher mortality rates compared to those using mixed water sources i.e., effluent with underground water, lake or borehole water. Elevated water temperatures (27oC and above) also favoured disease outbreaks. All affected farms did not have any farm level biosecurity measures or good management practices (e.g. improper disposal methods of dead fish, overstocking densities in deteriorated water quality and overfeeding). In addition, the presence of predatory or scavenging animals moving freely from infected ponds to uninfected ones was noted among affected farms. Most affected farms had disproprtionately higher densities at harvest, probably due to use of mixed sex fish or presumed all-male fry that were not effectively sex-reversed, leading to overpopulated ponds.

**Conclusion:** Combination of risk factors appear to be contributing to the observed mortality events in summer months.Water quality, temperature, density at harvest, lack of biosecurity and poor management practices are among the top contributing factors. There is a need to better understand the interactions between necessary (pathogens) and component (risk factors) causes for tilapia mortalities in Egypt.