Egyptian mortality mystery in tilapia fish closer to being solved

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Professor Manfred Weidmann from Stirling's Institute of Aquculture tested samples from seven farms in Egypt. Credit: University of Stirling

A new virus that has decimated fish populations in Ecuador and Israel has spread to Egypt, according to a new report from the University of

Stirling and WorldFish.

Scientists are now trying to establish a firm link between the virus and a recent surge in mortalities in Egyptian farmed tilapia.

Global threat

Tilapia Lake Virus (TiLV) is a global threat to the tilapia fish farming industry, worth $7.5bn per year.

Tilapia is an important species for aquaculture because it can be grown in diverse farming systems and requires minimal fishmeal in its feed. It has a naturally high tolerance to variable water quality and can grow in both freshwater and marine environments.

It is also important in developing world contexts as it is inexpensive and easy for small-scale farmers to grow for food, nutrition and income.

In recent years, Egypt has seen increased an unprecedented mortality of farmed tilapia populations in the summer months. Surveys indicate 37% of fish farms were affected in 2015 with a potential economic impact of around $100 million.

Identifying the cause of and preventing these deaths is of significant importance in Egypt, which relies on domestic aquaculture for 60% of fish consumed. Tilapia makes up 75% of that production.

Minimising impact

Dr Michael Phillips, director of science and aquaculture, WorldFish, said: "Tilapia were previously considered to have good disease resistance. While the report and the emergence of TiLV will not dent the

species' dominance in global aquaculture, it is a sign that greater efforts will have to be made to ensure tilapia's hardy reputation."

Tissue samples from seven farms affected by 'summer mortality' were tested at the University of Stirling's Institute of Aquaculture for TiLV. Three of the seven samples tested positive.

Stirling virologist Professor Manfred Weidmann said: "Globally, there is no aquaculture system that is free from the risk of disease. Unless we are able to manage disease, minimize its impact, and bring down the prevalence and incidence of diseases we will not be able to meet future demand for fish."

Scientists from the University of Stirling and WorldFish will now work to establish whether TiLV is the primary cause of 'summer mortality'. If that is the case, they will recommend rapid action to control the spread of the disease, including increased biosecurity in the short term. Longer-term strategies being considered include vaccines and the breeding of strains of tilapia that are resilient to the virus.

More information: Mohamed Fathi et al. Identification of Tilapia Lake Virus in Egypt in Nile tilapia affected by 'summer mortality' syndrome, *Aquaculture* (2017). DOI: 10.1016/j.aquaculture.2017.03.014

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