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NUTRIENT RESURGENCE IN SOBRADINHO LAKE AFTER DROUGHT PERIOD: MASSIVE FINANCIAL LOSS FOR TILAPIA CAGE SMALL FARMERS

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Sobradinho Lake, in the San Francisco River-Brazil, is the second largest artificial lake in the world. In the study area, there are approximately 16 tilapia cage farms with 10.000 m³ total area. Annual production is around 1.3 ton, but very important for families involved. In January, the water level in the lake starts to increase due to summer rain falling in the southeast of Brazil, where the river begins. Along with the water, organic matter comes, increasing the level of nutrients. The aim of this study was to evaluate water nutrients during spring and summer to verify resurgence phenomenon, as well as relate it to massive tilapia mortality during this season. The study area was a small farm managed by a woman. Production cycle started in August/17 with 19.000 tilapia fingerling (1.5g initial weight). Monthly, samples of water were collected from August through February/18, for ammonia nitrite, nitrate, orthophosphate and chlorophyll levels (all in mg.l⁻¹). Rainy season in the upper river basin started in late November/17. Lake total volume value was recorded. The farmer recorded daily mortality. To calculate financial loss, price (live fish in the farm) considered was the expectation for Easter (US\$2.4/kg), due to seasonal demand.

Results (Figure 1) shows lake volume increases and tilapia monthly mortality. Concomitant, the level of nutrients in the water increased and fish mortality started massively. Financial loss due mortality was estimated in US\$24.637,00.

As a conclusion, resurgence phenomenon caused massive tilapia mortality and, consequently, financial loss for local small farmers.

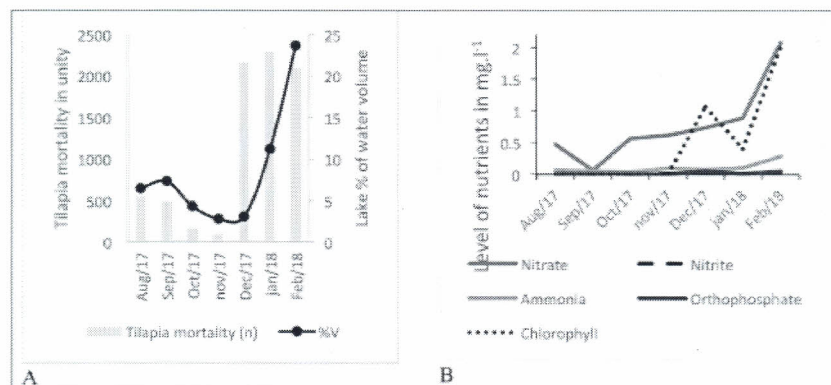


Figure 1: A. Total cages tilapia mortality and lake level; B. Water nutrients levels.