

# Off-flavour characterization of Nile tilapia cultured in net cages of hydroelectric reservoirs, São Paulo State, Brazil

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## Abstract

Implementation of low-cost breeding of fish in net cages and demand for fish meat has led to an intensive aquaculture production globally and also in Brazil. The aquaculture production in Brazil increased by 51% from 2009 to 2011, contributing to the 87% of total fish production. One of the major constraints of fish production by aquaculture is off-flavours. Release of nutrients by the fish in the intensive grown-out systems leads to deterioration of the water quality and a stimulated growth of various microorganisms. The objective of current research was to determine levels of taste and odour compounds (geosmin and 2-MIB) and their impact on the flavour quality of Nile tilapia produced in net cages of São Paulo State, Brazil. Fish and water samples were collected from six different farms in four different seasons from 2014 to 2016. The content of geosmin in the water ranged from 1 to 8 ng L<sup>-1</sup> while geosmin in fish ranged from 0.02 to 4.7 µg kg<sup>-1</sup>. The level of 2-MIB in water was 2 to 20 ng L<sup>-1</sup>, and in fish from 0.01 to 0.8 µg kg<sup>-1</sup>. A preliminary data analysis of samples from the first season indicates that the geosmin content in fish positively correlated with NH<sub>4</sub><sup>+</sup> (310-360 µg L<sup>-1</sup>) and total P (30-34 µg L<sup>-1</sup>) content in the water. Sensory analysis of the fish is presently being conducted and the results will be related to content of off-flavour in the fish at the conference.