

**ANIMAL WELFARE CONCERNS AT A FISH FARMING OPERATION IN
SOUTHEASTERN BRAZIL**

Temática do trabalho: Engenharia da Sustentabilidade (ES)

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Introduction: Concern for the welfare of animals (non-human) has existed for a long time, however, throughout the years, various ideas have tarnished this concern by questioning the capability for suffering and awareness in animals (Volpato, 2007). Since Harrison (1964) published his work that looked at excessive abuses in the commercial production of animals, scientific concerns about animal welfare have increased, especially regarding mammals and birds.

However, interest in this subject as it relates to welfare of fish, is relatively recent (1990s) increase at the beginning of the 21st century (Galhardo & Oliveira, 2006). Currently, the literature recognizes that in order to justify the welfare in fish, it would be necessary to show that these organisms are aware of a state of distress or discomfort. At the most rudimentary level of consciousness (the basis of concept of sentience), animals have to the capacity to perceive basic processes such as pain, heat, cold (Volpato, 2007).

Indeed, concern for the welfare of the fish during the production process is not very common among consumers and producers as suggested by the scant literature on the subject, more specifically in the area of animal welfare (Benson & Rollin, 2004; Carneiro et al., 2007).

However, this scenario is gradually changing, with increasing international publications, reports and books devoted to the welfare of fish (Erickson, 2003;

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Pedrazzani et al., 2007; Volpato, 2007). This study focuses on demonstrating what the members of an association of fishermen (who grow tilapia and robalo-peva) think about sentience and fish welfare at slaughter. This will help us determine if the topic is being considered during the commercial production of fish.

Materials and Methods: The study was undertaken in the traditional fishing community of Pedra D'Água (18° 43'05.86"S and 39°48'50.38"W) in São Mateus, ES, Brazil. The community is involved in cage-cultivating fresh water estuarine fish, specifically tilapia (*Oreochromis niloticus*) and Robalo Peva (*Centropomus parallelus*). Study site selection was based on economic, social and technological need of the community, as well as partnership between the Centro Universitário Norte do Espírito Santo (CEUNES), the Federal University of Espírito Santo (UFES) and APESAM (Fishermen's Association of São Mateus), located in the community in question.

Based upon previous observation/knowledge of the local fish production process, interviews and literature search, we designed a questionnaire specifically designed with the tilapia culture in the area. This activity is an alternative income for fishermen, especially during the closed fishing periods.

Results and Discussion: The present study suggests that, even without scientific proof of sentience in fish, fish farmers treat them humanely. This was substantiated through interviews, where according to the persons involved, the proper handling of fish resulted in higher weight, reduced contraction of diseases and reduced mortality.

This appeared to be influenced by potential concerns over welfare (targeting the commercial side of the activity) and the fact that consumers did desire that the fish to be treated humanely. Moreover, as society begins to recognize animal suffering as a relevant factor, an economic value is placed on animal welfare that becomes an integral part in the calculation of the economic value of animal products.

There are studies that suggest that in societies that are more conscious of the importance of the welfare of commercially produced animals this can have significant cost-benefit ratios (Molento, 2005). In order to discuss welfare objectively, we need a better context.

According to the FSBI (2002), the categories are based on feeling, role-based, and type. In addition, the results suggest that the individuals interviewed try to prevent that the fish they handle meet predators, reducing the handling of fish and to avoid

scaring the fish with sounds and disturbances in the water. Another point of discuss was how to identify welfare shortcomings for fish.

Also the members, a lack of well being in cultivation was identified by excessive mortality, disease onset, atypical appearance, atypical behavior, and poor weight gain and color variation in the fish.

Final Considerations: Fish welfare is an area with where there is little literature available in Portuguese. Questions about suffering and pain are still controversial and no specific legislation exist governing methods of slaughter for fish. Ignorance on the physiological mechanisms in fish leads researchers to compare them with other species, especially mammals, which appears to be inappropriate.

The present study revealed that knowledge of the subject was not widespread enough to affect aquaculture, though as a matter of ethics or as an effort to improve productivity, farmers were concerned with well being, which suggested that this could be the beginning of forward progress. On must remember that welfare was not necessarily associated with improvements in productivity.

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