J Aquac Res Development 2018, Volume 9
DOI: 10.4172/2155-9546-C3-030

Effects of yeast (*Saccharomyces cerevisiae*) products on African catfish (*Clarias gariepinus*) production

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Statement of the Problem: The intensification of aquaculture operations is often accompanied by stress due to suboptimum environmental conditions resulting from overcrowding and overfeeding. To keep up with demand for aquaculture products, the suboptimal environmental conditions associated with intensive aquaculture operation will likely continue. Hence, the importance of including bio-active ingredients (such as yeast products) in formulated aquaculture diets to enhance the performance, health and immunity of aquaculture species under suboptimum environmental conditions. The purpose of this study is to examine the effects of yeast (*S. cerevisiae*) products (unextracted and hydrolysed yeast) on the production of African catfish (*C. gariepinus*).

Methodology: African catfish (11.77±0.05 g fish 1, 100 857L tank-1) were fed ad libitum with iso-nitrogenous and iso-lipidic diets supplemented with either 0% yeast product, 3% unextracted yeast or 0.3% hydrolysed yeast for 56 days. The feeding trial was carried out in a flow-through aquaculture system (9 circular tanks of 857 L capacity each) and were supplied with freshwater from a deep well. At the termination of the feeding trial, growth, feed utilisation, somatic and haematological indices were assessed.

Findings: There was no significant difference (P>0.05) observed in the final weight (63.63±2.57 g fish 1), feed conversion ratio (1.30±0.04), specific growth rate (3.12±0.08% day-1), protein efficiency ratio (1.67±0.05) and survival (90.67±2.54%) of the catfish fed the experimental diets. Similarly, the somatic indices (K-factor, 0.8±0.04; hepatosomatic indices, 0.91±0.18 and viscerosomatic indices, 10.83±0.87) and haematological parameters were not significantly different (P>0.05) among the catfish fed the experimental diets.

Conclusion: It could be inferred that under optimum rearing condition, yeast products (at current level of inclusion) do not enhance the growth performance or hematological parameters of African catfish (*C. gariepinus*). Histological analysis of gut morphology as well as microbiological analysis of gut microbiota profile is ongoing.

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