



# SIMPÓSIO INTERNACIONAL DE NUTRIÇÃO E SAÚDE DE PEIXES AQUANUTRI

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REALIZAÇÃO:



## Substitution of corn by sorghum in diets for pacu, productive and financial aspects

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In recent years, the corn, the main energy food used in fish feed, has been suffering from supply and demand fluctuations with consequent increases in its price in the international market. Thus, various foods are being evaluated in order to minimize the impact on the final cost of production. On the other hand, information on the use of fish food is scarce, so the aim of this study was to evaluate the pacu productive performance fed diets containing sorghum, as well as the production cost of these diets. We evaluated 180 pacu with an average weight of  $10.80 \pm 0.77$  g were randomly distributed in 15 aquariums with useful capacity of 200L coupled to water recirculation system. The fish were fed four times a day with five experimental diets isoproteic and isoenergetic, composed of 0, 25, 50, 75 and 100% of the energy of substitution for corn sorghum, during the period of 67 days. Data growth performance of the fish were subjected to analysis of variance ( $p < 0.05$ ) and when significant, the averages were submitted to polynomial regression analysis at 5% significance level, while costs were expressed in percentage. After this period, the fish were anesthetized with benzocaine to  $100 \text{ mg L}^{-1}$ , measured and weighed to determine the assessed performance parameters were: weight gain (WG (g) = final weight (g) - initial weight (g)), specific growth rate (SGR (%) =  $100 \times [(\ln \text{ final weight (g)} - \ln \text{ initial weight (g)}) / \text{trial}]$ ), feed conversion rate (FCR = food provided (g) / gain Weight (g)), protein efficiency ratio (PER (%) =  $100 \times (\text{weight gain (g)} / \text{crude protein consumed (g)})$ ) and survival. The cost per kilogram produced fish (R\$  $\text{kg}^{-1}$  weight gain) realized the cost of formulated feed (considering the ingredients) multiplied by the feed conversion. The amounts of ingredients were produced in consultation with the state of São Paulo/Brazil feed manufacturers, with prices prevailing in January 2015. No differences were observed ( $p > 0.05$ ) on production parameters evaluated, however varied between 22.02 to 24.71 g to (WG), from 1.22 to 1.38 (SGR), from 1.84 to 1.97 for (SGR) and 1.41 to 1.58 for (PER). The cost of feed per kilogram of weight gain showed greater cost reduction of 14.4% in the ration to the level of 50% replacing corn with sorghum, fairly representative when compared to levels of 25%, 75% and 100 % which decreased by 7.2%, 9.6% and 10.4%, respectively. Therefore, for all substitution levels, including sorghum reduced the cost of the formulation. With all the results observed in this study demonstrate that energy replacing corn with sorghum in diets for pacu does not change the production parameters of the species and reduce the cost of diets and consequently production.

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