

PROCEEDINGS



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A NEW VIEW  
OF ANIMAL SCIENCE:

CHALLENGES AND  
PERSPECTIVES

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# A NEW VIEW OF ANIMAL SCIENCE: CHALLENGES AND PERSPECTIVES

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**THEME 7 | NONRUMINANT NUTRITION AND PRODUCTION**

**Phosphorus levels in ration on carcass characteristics of tambaqui in the fattening phase**

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The tambaqui (*Colossoma macropomum*) is considered a promising species for sustainable fish farming due to its zootechnical characteristics. Phosphorus is one of the most limiting minerals in the ingredients of vegetable origin, is essential for the formation of bone structure, cell membranes, phosphoproteins, energy transfer, regulation of acid-base balance, and enzymatic and hormonal systems. Considering the lack of information about the phosphorus requirements in rations for different phases of tambaqui creation, the current study was aimed to determine the effects of dietary levels of total phosphorus on tambaqui carcass characteristics in the fattening phase (100 The 500 grams). 150 tambaquis were used, with three different mean initial weights ( $85.40 \pm 1.10$  g;  $112.03 \pm 1.57$  g and  $140.63 \pm 1.57$  g) in a randomized block design as a function of initial weight, composed per six treatments and five replicates per treatment in three blocks and five fish per experimental unit. The treatments were six isoproteic experimental diets, isocaloric and isocalcium with different levels of phosphorus total (0.41; 0.60; 0.79; 0.98; 1.17 and 1.36%). The fish were distributed in 30 boxes of polyethylene with volumetric capacity of 500 L in closed system, equipped with a supply system, aeration and drainage individual, during 89 days. The analyzes performed were the body composition parameters, protein daily deposition, fat, ashes and body phosphorus, and phosphorus and nitrogen retention efficiency. The treatments not influence fat and body phosphorus levels, and in the rates of daily deposition of fat and phosphorus. With the elevation of phosphorus levels in the ration, the moisture content reduced in a quadratically form up to the estimated level of 0.99%, increasing, in this way, the percentage of dry matter deposited of the fish. On the other hand, There was a quadratically increase in the levels of protein and ashes to the estimated levels of 0.95% and 0.97%, respectively. The elevation of total phosphorus levels increased the protein and ashes deposition of the fish in a quadratically way up to the estimated levels of 0.92% and 0.94%, respectively. Com relação à eficiência de retenção de nitrogênio, the elevation of total phosphorus levels, improved this variable in a quadratically way up to the estimated level of 0.93%. On the other hand, provided a quadratically reduction in fish phosphorus retention efficiency. It is concluded that the recommendation of the levels of total phosphorus in rations for tambaqui in the fattening phase to optimize the deposition of protein and ashes is 0.94%.

**Keywords:** *Colossoma macropomum*, nutritional requirement, minerals

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