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THEME 7 | NONRUMINANT NUTRITION AND PRODUCTION

Apparent phosphorus digestibility in rations for tambaqui in the juvenile and juvenile stages

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Phosphorus is one of the most limiting minerals in fish feed. Considering that the phosphorus digestibility may differ according to the species, among the different feed ingredients, and also because of its intestinal concentration due to the different physiological mechanisms of absorption, the objective of this study was to determine the phosphorus digestibility coefficients (CDAFos) in rations for tambaqui in the juvenile and juvenile stages. In the juvenile phase, 120 tambaqui with 13.3 ± 0.63 g, and in the juvenile phase, 60 tambaqui with 47.63 ± 0.49 g. A completely randomized design was used, consisting of six treatments, three replicates per treatment and 20 and 10 fish per experimental unit, respectively. The treatments consisted of six isoprotein, iso-energetic and isocalcium diets with different levels of total phosphorus (0.42; 0.64; 0.86; 1.08; 1.30 and 1.52%), 0.50% of chromic oxide (Cr₂O₃) as indigestive indicator in the determination of the coefficient of digestibility by the indirect method, using the fecal collection technique by decanting. During the day, the fish were kept in cages kept in polyethylenes (1.000 L) boxes, being fed until apparent satiety. During the night the cages were transferred to incubators of fiberglass of conical format (220 liters) adapted for collection of the feces, being the collection of feces realized every two hours. CDAFos and digestible phosphorus (Fosd) values were evaluated. There was no interaction between the phosphorus concentration in the diet and the breeding phase for any of the variables. CDAFos decreased in a quadratic way with the increase of the phosphorus levels of the ration, according to the CDAFos equation = 107.895 - 95.2694Fos + 23.1756Fos² (R² = 0.90); And the CDAFos of fingerlings had higher values in relation to juveniles. The feed Fosd contents increased in a quadratic manner, according to the equation Fosd = 0.059519 + 0.710756Fos - 0.396573Fos² (R² = 0.62), to the level of 0.90% of the total phosphorus of the feed, Estimated level of 0.38% of digestible phosphorus; And Fosd levels were higher for fingerlings. It is concluded that for fingerlings and juveniles supplementation of phosphorus in the diet decreases its coefficients of apparent digestibility, but the highest values of digestible phosphorus are obtained with 0.90% of total phosphorus; And that the phosphorus digestibility coefficients for fingerlings are superior to those obtained for juveniles.

Keywords: *Colossoma macropomum*, digestible phosphorus, indirect method, minerals

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