



Substitution of soybean oil for linseed oil in pacu *Piaractus mesopotamicus* nutrition

Jony Koji Dairiki*⁽¹⁾; Thyssia Bomfim Araújo da Silva⁽²⁾; José Eurico Possebon Cyrino⁽²⁾

⁽¹⁾ Embrapa Amazônia Ocidental; Rodovia AM 10, km 29; Caixa Postal 319
69011-970 - Manaus – AM; jony.dairiki@cpaa.embrapa.br

⁽²⁾ Escola Superior de Agricultura “Luiz de Queiroz”, Universidade de São Paulo. Av. Pádua
Dias 11; Caixa Postal 9; 13418-900 - Piracicaba – SP
thyssia_bomfim@hotmail.com; jepcyrin@esalq.usp.br

Dietary lipids and its components are essential for appropriate growth, feed efficiency, health, metabolic and reproduction performance. Are essential nutrients and important source of energy for the fish. The linseed oil (LSO) is rich in fatty acids, especially in n-3 series and present functional properties in animal nutrition. This work evaluates the substitution of dietary soybean oil (SBO) by graded levels of LSO on the performance of pacu *Piaractus mesopotamicus*. Juvenile pacu (14.4 ± 0.4 g) were stocked in 70-L aquaria (15 fish per aquarium) under partial, continuous, individual water renewal system, continuous aeration (dissolved oxygen 5.02 ± 0.87 mg L⁻¹), controlled temperature (26.3 ± 1.4 °C) and photoperiod (12 L: 12 D), and fed for 85 days with diets containing increasing levels sunflower oil (20, 40, 60, 80, 100%) in substitution of soybean oil, a control diet (no sunflower oil) and a commercial feed, in a totally randomized design trial (n=4). At the end of the experimental period four performance parameters of fish were analyzed: final weight (FW); weight gain (WG), feed conversion rate (FCR) and specific growth rate (SGR). Fish fed 20% dietary LSO – FW 81.91 ± 6.99 g; WG 67.69 ± 7.05 g; FCR 1.01 ± 0.09 ; and SGR 2.18 ± 0.13 % – presented improve growth performance. Fish fed control treatment presented growth performance 30% to 40% worse than the other treatments. The excess of n-3 fatty acids, abundant in LSO, in diets having LSO higher than 40% substitution to SBO seemingly impaired fish performance, for it could have affected the hormonal status of the fish, signaling an excess of circulating fatty acids and fat depots, which may have triggered the process of lipolysis and/or proteolysis with direct consequences in the animal performance.

The authors are indebted to Conselho Nacional de Desenvolvimento Científico e Tecnológico (National Council of Scientific and Technological Development - CNPq) for partial funding of the research. TBAS holds CNPq scholarship; JKD is Embrapa researcher and JEPC is CNPq research scholar.