Primeira Sessão: Ecologia e Fisiologia – Pôsteres

Effects of fasting and refeeding on plasma fatty acids of juvenile dusky grouper, Epinephelus marginatus (Perciformes: Serranidae)

Oliveira, Ethiene F (1); de Mello, Fernanda (2); Araújo, Bruno C (3); Honji, Renato M (4); de Mello. Paulo H (5) e Moreira, Renata G (2)

(1) Centro de Aquicultura da Universidade Estadual Paulista (CAUNESP), Via de Acesso Paulo Donato Castellane, s/n, Vila Industrial, Jaboticabal, SP, 14884-900, Brasil. (2) Departamento de Fisiologia, Instituto de Biociências, Universidade de São Paulo (IB/USP). Rua do Matão, trav. 14, nº 321, São Paulo, SP, 05508-090, Brasil. (3) Núcleo Integrado de Biotecnologia, Universidade Mogi das Cruzes (UMC), Av. Dr. Cândido X. de Almeida e Souza, nº 200, Centro Cívico, Mogi das Cruzes, SP, 08780-911, Brasil. (4) Centro de Biologia Marinha, Universidade de São Paulo (CEBIMar/USP). Rodovia Manoel Hipólito do Rego, km131,5, São Sebastião, SP, 11612-109, Brazil. (5) Beacon Development, King Abdullah University of Science and Technology, Thuwal, Saudi Arabia.

The dusky grouper Epinephelus marginatus is included in the red list of the International Union for Conservation of Nature (IUCN) in a state of vulnerability. The species has great ecological importance but shows late growth and reproduction. Anthropogenic factors, such as overfishing, reduce their natural stocks, so studies on physiology of species are important to improve rearing. Thus, the objective of this study was to investigate the plasma fatty acid (FA) profile of the dusky grouper in different periods of food restriction, aiming to understand the physiological processes of the species in periods of food restriction. The animals were divided into 500L tanks in RAS (Recirculating Aquaculture System), in 3 treatments (3 tanks/treatment): T1–feeding (30 days constant feeding), T2–refeeding (15 days feeding restriction and 15 days refeeding) and T3–feeding restriction (30 days without feeding). Three animals/tank were sampled, on the respective days: 7; 15; 15+12 hours; 22 and 30. The plasma total FA profile was analyzed by gas chromatography and data underwent statistical analysis (Two Way ANOVA, followed by Tukey $p < 0.05$). Animals from T2 had lower percentages of saturated (SFA) at 7 days compared to 30 days, and higher monounsaturated FA (MUFA) compared to T1, after 30 days. Also after 30 days, fish from T1 showed higher plasma concentrations of MUFA than T2, which suggests an excess of nutrients in the diet for fish in T1 compared to T2. In addition, animals from T2 showed lower values of LC-PUFA and omega-3 after 30 days, possibly showing a lower requirement for the catabolism of physiologically important FAs. Therefore, the present study shows that dusky grouper presents better physiological conditions in relation to 15-day fast, once the species preserved PUFA and mobilized SFA and MUFA, inversely to other treatments.

Financiamento: Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq)
O trabalho foi desenvolvido com o uso da infraestrutura do CEBIMar? Sim