PO076 - EXOGENOUS ENZYME COMPLEX PREVENTS INTESTINAL SOYBEAN MEAL-INDUCED ENTERITIS IN Mugil liza (VALENCIENNES, 1836) JUVENILE

Leonardo R. V. Ramos¹; Virgínia F. Pedrosa²; Agnes Mori³; Carlos F. F. Andrade⁴; Luis A. Romano⁵; Paulo C. Abreu⁶ & Marcelo B. Tesser⁷

¹Universidade Federal do Rio Grande – FURG – rochavr.leo@gmail.com; ²Universidade Federal do Rio Grande – FURG – vikavetp@gmail.com; ³Adisseo Brasil Nutrição Animal - guimori@yahoo.com; ⁴Universidade Federal do Rio Grande – FURG – carlos.fand@gmail.com; ⁵Universidade Federal do Rio Grande – FURG – luisalbertoromano0@gmail.com; ⁶Universidade Federal do Rio Grande – FURG – docpca@furg.br; ⁷Universidade Federal do Rio Grande – FURG – mbtesser@gmail.com

Abstract: The use of plant feedstuffs is essential for the future of aquaculture, but vegetables contain antinutrients that impair or reduce the growth of the aquatic animals. Many antinutritional factors lead to a pathological status in the animals that sometimes may affect the function of internal organs and weaken defense resistance. They are present in feedstuffs both as structural and storing components, such the cell walls non-starch polysaccharides and phytic acid, being the last the phosphorus storage form in plants. Soybean meal is the major vegetable protein source that could replace the fish meal in feed formulations. However, it is reported that soybean meal could induce the development of enteritis in a few fish species, as in salmonids, and such pathology could be associated to the presence of antinutritional factors. Nowadays, the nutritionists are including in aquatic foods some additives that ameliorate the feed acceptance and nutrients availability, and also reduce the negative effects of antinutrients, such the exogenous enzymes, as carbohydrases and phytases. With the aim to investigate the inclusion of exogenous enzyme complex in the mitigation of soybean meal induced enteritis in juvenile mullet Mugil liza, four diets containing increasing levels of an enzyme complex (E50, E100, E150 and E200 at 50, 100, 150 and 200 g ton-1, respectively) and one soybean meal-based diet without the enzyme complex (E0) inclusion were fed in triplicate to animals in a semi-static flow system with 20 fish per tank during 75 days. The enzyme complex contains the follow enzymes: xilanases, β-glucanases, pectinases, mannanases and phytase. Histological screening have shown serious to moderate infiltration of inflammatory cells, modification in villus morphology and necrosis in fish fed the E0 diet. In addition, increasing the level of enzyme inclusion gradually improves the intestinal status of fishes, with the fish fed in the higher enzyme level showing no signals of enteritis. Therefore, the use of exogenous enzyme is recommended in diets for M. liza when soybean meal is used as the main source of protein, mitigating the impact of antinutritional factors in the fish health.