

Effects of IMUNO-2865® as Immune Supplement for the Aquaculture Industry

Authors : Ivan Zupan, Tomislav Saric, Suzana Tkalcic

Abstract : IMUNO-2865® is a commercially available, β -glucan based, natural hemicellulose compound with proven immunostimulative properties in people, domestic and some aquatic animals. During the experimental feeding trial with IMUNO-2865® in juvenile wild-caught chub under laboratory conditions, supplementation resulted in overall higher growth performance for all experimental groups regardless of the concentration of the added compound. The maximum, 5% concentration of the supplement, resulted in highest weight gain and calculated specific growth rate. In sea bream, as economically most important species in the Mediterranean aquaculture, significant increases in numbers of monocytes and heterophils were observed in the group supplemented with 2.5 % of IMUNO-2865® in the feed. An overall increase of erythrocytes was noted by the end of the experiment, although with variable distribution among groups. Blood Ca^{++} levels, total proteins, and total NH_3 were significantly higher after 60 days of feeding in all treatment groups compared to the control and remained elevated in the treated group following the secession of supplementation. Superoxide dismutase (SOD), glutathione peroxidase (GSH-Px) and serum paraoxonase PON1 (U/L) showed similar trends. All these parameters are playing a significant role in either oxygen supplementation of tissues, or anabolic and catabolic processes that on molecular levels contribute to the overall health and immune-building capacity of cells and tissues. The complete lack of mortality in sea bream and presented increases in cellular, biochemical and oxidative stress parameters in the blood suggest that the IMUNO-2865® represents a safe dietary supplement for in aquaculture, with an overall positive and potentially immunostimulative effect on farmed fish.

Keywords : IMUNO-2865®, β -glucans, Mediterranean aquaculture, fish immunostimulans

Conference Title : ICFAM 2018 : International Conference on Fisheries and Aquaculture Management

Conference Location : Tokyo, Japan

Conference Dates : November 12-13, 2018