

Effects of dietary L-ascorbyl-2-polyphosphate on growth performance, haematological parameters, biochemical characteristics, and skeletal features of juvenile hybrid grouper (♀ *Epinephelus fuscoguttatus* × ♂ *E. lanceolatus*)

ABSTRACT

A 14-week feeding trial was conducted to determine the effects of dietary L-ascorbyl-2-polyphosphate on the growth performance, haematological parameters, biochemical characteristics, and skeletal features of juvenile hybrid grouper (♀ *Epinephelus fuscoguttatus* × ♂ *E. lanceolatus*). Eight experimental diets containing graded vitamin C (VC) levels (0, 18, 45, 78, 144, 245, 386, and 762 mg/kg) were prepared and fed to triplicate groups of fish (initial body weight: 10.41 ± 0.06 g). The final body weight, weight gain rate, specific growth rates, and fish survival increased when fed with diets supplemented with VC regardless of the supplementation level. Total feed intake reduction was observed in fish fed non-VC diet. Whereas no significant differences were detected in the feed conversion ratios and protein efficiency ratios among fish treatments. The hepatic VC concentration was positively correlated with dietary VC supplementation and reached a plateau when supplemented with more than 386 mg/kg diet. Higher total protein and alkaline phosphatase levels in blood serum and incidence of skeletal deformities were recorded in the fish fed with a control diet compared to other treatments. The results indicate that adding 18 mg/kg of VC is optimum and further increase does not provide any significant benefit to fish growth and health.