RAPID WOUND HEALING IN AFRICAN CATFISH, *CLARIAS GARIEPINUS*, FED DIETS SUPPLEMENTED WITH ASCORBIC ACID

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Abstract

Wound healing in African catfish, *Clarias gariepinus,* fed diets supplemented with ascorbic acid was studied under laboratory conditions. Fish weighing approximately 80-110 g were stocked in 500 l aquaria in a static water system and fed one of five test diets containing different levels of microencapsulated ascorbic acid (0, 0.06, 0.10, 0.30 and 0.70 g AsA/100 g feed). After two weeks, all experimental fish were wounded by making a 1 x 1 cm dorso-lateral incision above the lateral line of the fish. Wounded tissues were sampled for histopathological analysis 4, 8, 24, 48 and 96 hours, 6, 8, 10, 12 and 14 days after making the incision. There were significant differences in weight gain, specific growth rate (SGR) and feed conversion ratio among the dietary treatments. Weight gain and SGR of fish fed the ascorbic acid free diet were lower than those of fish fed diets supplemented with ascorbic acid. The wound healing response showed a direct correlation to ascorbate level in the diet. Fibroblasts were present at 96 h irrespective of the ascorbic acid level. As 14 days, fish fed no ascorbic acid had some regeneration of muscle tissues, whereas fish fed diets containing supplemental ascorbic acid had a normal epidermis, dermis and muscle structure. There was no mortality during the experimental period, and fish fed ascorbic acid free diets did not exhibit any deficiency signs. Results of this study indicate that about 0.10-0.70 g AsA/100 g feed is needed for wound repair in African catfish.

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