

CHAPTER VI

CONCLUSION

This study provides insight into the health-promoting properties of low molecular weight duck blood protein hydrolysate (DBPH) in flowerhorn fish. Diets supplemented with 2% DBPH exhibited the highest growth, antioxidant activity, and humoral immune response enhancement under normal conditions. Additionally, DBPH could promote the abundance of the genera *Cetobacterium* and *Romboutsia*, which could serve as indicators of the overall health and well-being of the fish. Moreover, with a *Streptococcus agalactiae* challenge, fish fed with diets supplemented with DBPH exhibited an enhanced ability to modulate inflammatory genes as well as antioxidant gene expression (SOD, CAT). Overall, dietary supplementation with DBPH could improve the overall health of the flowerhorn fish by ameliorating humoral immune response, alleviating oxidative stress, and strengthening resistance against *S. agalactiae*.