Mst Nahid Akter et al., J Aquac Res Development 2015, 6:6
http://dx.doi.org/10.4172/2155-9546.S1.002

OMICS International
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International Conference on
Aquaculture & Fisheries
July 20-22, 2015 Brisbane, Australia

Influence of *Lactobacillus acidophilus* supplementation on digestive enzyme activities, gut histomorphology and microflora of striped catfish (*Pangasianodon hypophthalmus* Sauvage, 1878) juveniles

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The influence of the dietary probiotic, *Lactobacillus acidophilus* on growth performance, digestive enzyme activities, gut histomorphology and microflora was determined in striped catfish (*Pangasianodon hypophthalmus*) juveniles. Four diets containing *L. acidophilus* at 10^3, 10^5, 10^7 and 10^9 CFU/g of diet and control (without *L. acidophilus* supplementation) were prepared and fed to triplicate groups of striped catfish juveniles (initial weight of 21.69±0.18 g) twice daily at 2.5% of fish body weight for 12 weeks. Weight gain, specific growth rate, feed conversion ratio and protein efficiency ratio in the groups fed 10^5 and 10^7 CFU/g of *L. acidophilus* were significantly improved ($P<0.05$) compared to the remaining treatment groups. Further, compared to control and fish fed low (10^3 CFU/g) *L. acidophilus* supplementation, those fed 10^5 and 10^7 CFU/g had significantly higher ($P<0.05$) apparent protein digestibility. Except for lipase activity, inclusion of *L. acidophilus* at 10^7 CFU/g diet significantly increased amylase and protease activities. Microscopic analysis showed that the villi length in both the anterior and posterior gut and microvilli length in the posterior gut only increased significantly ($P<0.05$) in fish fed *L. acidophilus* supplementation at 10^5 and 10^7 CFU/g of diet. The fish fed *L. acidophilus* supplemented diets significantly increased the total count of lactic acid bacteria in the gut of striped catfish compared to the control fed group. However, *L. acidophilus* supplementation did not show any significant effect of striped catfish survival. Based on gut histomorphology and growth performance, inclusion of *L. acidophilus* at 10^5 CFU/g seem to have the most positive effect of striped catfish juvenile farming.

Biography

Mst Nahid Akter is now going to finish her PhD at the age of 35 years from Universiti Sains Malaysia under the School of Biological Sciences. She awarded as a PhD fellow by OWSD. She has teaching experience in a reputed public university in Bangladesh. She has published 1 paper in Aquaculture International journal and about 10 papers in reputed local Bangladeshi journals. She has attended 3 international symposium in various Asian countries and several workshops in Malaysia.

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