

# 2<sup>nd</sup> International Conference on **Animal & Dairy Sciences**

September 15-17, 2014 Hyderabad International Convention Centre, India

## Are we meeting the amino acid needs of rohu *Labeo rohita*?

Karthik Masagounder<sup>1</sup>, Shivananda Murthy<sup>2</sup>, Nilima Priyadarshini<sup>2</sup>, Himanshu S Swain<sup>2</sup> and Girish Channarayapatna<sup>1</sup>

<sup>1</sup>Evonik Industries, Singapore

<sup>2</sup>College of Fisheries, India

Fish depend mainly on feed for the ten essential amino acids (EAA) and if the feed is inadequate in any EAA, growth (protein accretion) will be impaired, regardless of the dietary protein level. The objectives of the study were to understand the amino acid profile of commercial carp feed in India and to evaluate the growth performance of rohu *Labeo rohita* fed the diet containing levels of essential amino acids (EAA) found in commercial diet (control) versus the diet containing EAA levels recommended by Evonik (AMINOCarp™). Between 2011 and 2012, 25 commercial feed samples (14 starter feed and 11 grower feed) collected from India were analyzed for amino acid levels. Two feeding trials were conducted, one for juvenile rohu (starter) and the other for grower rohu. In trial 1, control diet was formulated to contain typical industry levels of EAA found in starter feed, 0.53% Met, 0.99% Met+Cys, 1.57% Lys and 1.11% Thr, while the AMINOCarp based diet was formulated to contain 1.07 Met, 1.54% Met+Cys, 1.98% Lys, and 1.22% Thr. Both the diets were formulated to contain 4000 kcal gross energy with their crude protein (CP) levels being 31-32%. Each diet was fed twice daily to six replicate groups of rohu (~11g, 25 fish / replicate tank) for 90 days to their apparent satiation. There was no difference in weight between the two groups on day 0, but, on day 90, rohu fed AMINOCarp-based diet showed significantly higher body weight gain (99.6 g vs. 89.8 g) and better FCR (1.31 vs. 1.53) than did the control group. In trial 2, control diet was formulated to contain levels of EAA found in typical grower feed (e.g., 0.46% Met, 0.91% Met+Cys, 1.34% Lys and 1.00% Thr) while the corresponding AMINOCarp diet was formulated to contain 0.90% Met, 1.33% Met+Cys, 1.52% Lys, and 0.97% Thr. Both the diets were formulated to contain 3900 kcal/kg gross energy levels with their CP levels being 28%. Each diet was fed twice daily to five replicate groups of rohu (~106g, 10 fish / replicate tank) for 60 days to their apparent satiation. Similar to the trial 1, rohu with similar initial body weights (~106 g) significantly differed on day 60, with rohu fed EAA levels based on AMINOCarp recommendations showing much better body weight than the control group (412 vs. 372 g). However, no differences were observed in the FCR between the two groups (1.02 for AMINOCarp vs. 1.04 for control). In both the trials, protein retention improved by 4-5%, when rohu fed the AMINOCarp based diet. The study demonstrated that current industry diet may be deficient of certain essential amino acids and feeding rohu based on AMINOCarp™ recommendations can produce better growth performances.

## Biography

Karthik Masagounder has obtained his Bachelors in Fisheries Sciences from Tamil Nadu Veterinary and Animal Sciences University and Masters in Aquaculture from Central Institute of Fisheries Education, Mumbai. He completed PhD from the University of Missouri, USA focusing on animal nutrition. He then continued his postdoctoral research in the area of bioenergetics for another 1.5 years in the USA. He has published more than 10 papers, many popular press articles and abstracts in the areas of fish and poultry nutrition. He has been working for Evonik Industries since Jan 2012 as a Regional Technical sales manager.

[karthik.masagounder@evonik.com](mailto:karthik.masagounder@evonik.com)