Effects of excess dietary branched chain amino acids on the production performance and blood parameters of Nile tilapia (*Oreochromis niloticus* L.)

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Many studies have been conducted on tilapia throughout its commercial expansion; however potential antagonisms involving branched amino acids (BCAA), particularly their effects on growth and nutrient utilization, have not been fully assessed. Therefore, an 8-week feeding trial was conducted to access the effects of excess dietary BCAA [leucine (Leu) and isoleucine (Ile)] on growth, feed utilization, and blood parameters of juvenile Nile tilapia (*Oreochromis niloticus*). Three diets were formulated to be isonitrogenous (40% crude protein), isolipidic (10% lipid), and to contain different levels of the two essential amino acids. A basal diet (Basal) was designed to fulfil all dietary requirements of Nile tilapia. Two additional test diets (Leu+ and Ile+) were designed to contain Leu and Ile at an excess of 2.5% from Basal levels, respectively. Each diet was fed twice daily to apparent satiation to triplicate groups of 20 juvenile Nile tilapia (4.0 g initial mean weight) stocked into 110-L glass aquaria operating as a recirculating aquaculture system. After 8 weeks of feeding, we found no significant effects of excess Leu or Ile on the overall production performance and blood parameters of the experimental fish, indicating no antagonistic interactions. Therefore, since a 2.5% excess of Leu or Ile is very unlikely to occur in practical diet formulations for Nile tilapia, no upper limits of either amino acid in feeds for this species are necessary.