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## RESEARCH REPORTS

Sustainable Aquaculture for a Secure Future

**Title:** Growth, fat content and fatty acid profile of South American catfish, surubim (*Pseudoplatystoma fasciatum*) juveniles fed live, commercial and formulated diets

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**Abstract:** South American catfish, barred surubim (*Pseudoplatystoma fasciatum*) juveniles (117.6 ± 11.8 mg individual weight; 28.3 ± 2.5 mm total length) were fed various diets: one live (*Tubifex* worms), two commercial (Aglo Norse and Bio Kyowa), and one semi-purified formulated diet (75% peptide based protein) over a 2-week period. Fish fed the Aglo Norse diet showed the highest growth performance, but cannibalism also was very high (42%). Fish fed peptide based formulated diet demonstrated the lowest growth rate, with no cannibalism. The highest survival was achieved with fish fed *Tubifex* worms (100%). Lipid level in the whole body of the fish fed four different experimental diets did not differ significantly, averaging 3.6 ± 0.7%. Fatty acid composition of neutral and phospholipid fractions of whole body lipids of fish reflected the fatty acid composition of the diets. The high level of 20:4n-6 in *Tubifex* worms resulted in a high level of this fatty acid in the tissue of fish fed this diet. It remains uncertain how high survival and no cannibalism is related to dietary lipids/fatty acids. In all cases, the increasing ratio of n-3 HUFA (highly unsaturated fatty acids)/n-6 HUFA in phospholipid fractions suggested the elongation and desaturation of 18:3n-3 to 22:6n-3 via 20:5n-3. Moreover, in respect to the 20:4n-6 levels in the diets, an increase in the concentration of this fatty acid in phospholipid fraction suggests that South American catfish can transform linoleate into arachidonate

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