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5种脂肪源对齐口裂腹鱼生长性能及血清生化指标的影响

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Effects of Different Lipid Sources on Growth Performance and Serum Biochemical Indices of Schizothorax prenanti

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摘要
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摘要 本文旨在研究不同脂肪源对齐口裂腹鱼生长性能及血清生化指标的影响。选取平均体重为（7.09±0.53）g、平均体长为（9.21±0.34）cm的健康齐口裂腹鱼450尾，随机分为5组，每组3个重复，每个重复30尾。以鱼粉、豆粕和菜粕为蛋白质源，分别以菜油、大豆油、花生油、芝麻油和葵花油为脂肪源，配制成5种等氮等能的试验饲料，分别投喂5组试验鱼。试验期50 d。结果表明：大豆油组的增重率、特定生长率均最大，其次为花生油组，且花生油组与芝麻油组无显著差异（P>0.05）；花生油组的饵料系数最低，蛋白质效率最高，其次为芝麻油组，且芝麻油组与大豆油组差异不显著（P>0.05）。这说明大豆油、花生油和芝麻油对齐口裂腹鱼有较优的促生长效果。对齐口裂腹鱼血清生化指标分析表明，大豆油组的总胆固醇含量和谷丙转氨酶、谷草转氨酶活性最低，而高密度脂蛋白胆固醇含量最高；花生油组的甘油三酯含量最低，但与大豆油组差异不显著（P>0.05）；菜油组和葵花油组的甘油三酯、总胆固醇含量和谷丙转氨酶、谷草转氨酶活性显著或极显著高于大豆油组、花生油组和芝麻油组（P<0.05或P<0.01），而其高密度脂蛋白胆固醇则显著或极显著低于大豆油组、花生油组和芝麻油组（P<0.05或P<0.01）。这表明菜油和葵花油不利于齐口裂腹鱼的脂肪代谢。综合考虑齐口裂腹鱼生长性能和血清生化指标，大豆油、花生油和芝麻油是齐口裂腹鱼的适宜脂肪源。

关键词：齐口裂腹鱼;脂肪源;生长性能;血清生化指标

Abstract： The experiment was conducted to study the effects of different lipid sources on growth performance and serum biochemical indices of Schizothorax prenanti. Four hundred and fifty healthy Schizothorax prenanti with average body weight of (7.09±0.53) g and average length of (9.21±0.34) cm were randomly divided into 5 groups and each group included 3 replicates of 30 Schizothorax prenanti. Using fish meal, soybean meal and rapeseed meal as protein source, rapeseed oil, soybean oil, peanut oil, sesame oil and sunflower oil as lipid source respectively, five iso-nitrogenous and iso-energetic diets were formulated and fed to the experimental fish of 5 groups, respectively. The experiment lasted for 50 days. The results showed that the weight gain ratio (WGR) and specific growth ratio (SGR) in soybean oil group were the highest and the next was peanut oil group, but there was no significant difference between peanut oil group and sesame oil group (P>0.05); the feed conversion ratio (FCR) and the protein efficiency ratio (PER) in peanut oil group were the lowest and the highest respectively, and the next was sesame oil group, but there was no significant difference between sesame oil group and soybean oil group (P>0.05). Those results indicated that there was better growth performance of Schizothorax prenanti in soybean oil group, peanut oil group and sesame oil group. Serum biochemical indices analysis showed that the content of total cholesterol (TC) and activities of glutamic pyruvic transaminase (GPT) and glutamic oxaloacetic transaminase (GOT) in soybean oil group were the lowest, and the activity of high density lipoprotein-cholesterol (HDL-C) in soybean oil group was the highest; at the same time, the triglyceride (TG) content in peanut oil group was the lowest, but there was no significantly difference between the peanut oil group and soybean oil group (P>0.05). The contents of TG, TC and the activities of GPT and GOT in rapeseed oil group and sunflower oil group were significantly higher than those in soybean oil group, peanut oil group and sesame oil group (P<0.05 or P<0.01); at the same time, the activity of HDL-C in rapeseed oil group and sunflower oil group was significantly lower than that in soybean oil group, peanut oil group and sesame oil group (P<0.05 or P<0.01). The results indicated that rapeseed oil and sunflower oil had negative influence on lipid metabolism of Schizothorax prenanti. Based on the information above, soybean oil, peanut oil and sesame oil were the suitable lipid sources of Schizothorax prenanti. [Chinese Journal of Animal Nutrition, 2010 , 22 (2) :498-504]

Keywords： Schizothorax prenanti; Lipid sources; Growth performance; Serum biochemical indices

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