

## 水产—研究报告

### 饥饿对繁殖期尼罗罗非鱼肌肉生化成分和性腺发育的影响

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#### 摘要:

在养殖群体中选取规格为 $202.3 \pm 5.1\text{g}$  (♀) 和 $251.7 \pm 5.9\text{g}$  (♂) 的尼罗罗非鱼作为实验样本, 研究饥饿对其肌肉生化成分和性腺发育的影响。实验期间雌雄鱼体质量均于饥饿14d后显著下降 ( $P < 0.05$ ), 停食结束后分别下降19.72%和15.93%; 饥饿早期性腺质量持续上升, 21-28d期间出现拐点, 至28d卵巢和精巢质量分别增加95.93%和120.31%。饥饿过程中肌肉粗脂肪和粗蛋白含量以及能量密度均呈下降趋势, 雌雄鱼粗脂肪含量分别于7d和14d显著下降 ( $P < 0.05$ ), 粗蛋白含量的显著变化均出现于14d。结果表明饥饿对尼罗罗非鱼肌肉生化成分及性腺发育具有显著影响, 饥饿早期其动用储备能量供性腺发育, 随着饥饿的延续, 性腺发育趋缓直至停滞。此外, 由于雄鱼前期能量贮存水平高于雌鱼, 加之卵巢发育需要消耗更多能量, 因此各阶段雌鱼主要指标的下降均早于雄鱼, 且降幅也大于后者。

**关键词:** 性腺发育

### Effects of Starvation on Biochemical Components in Muscle and Gonad Development of *Oreochromis niloticus* in breeding season

#### Abstract:

In this experiment, based on ninety samples with body weight of  $202.3 \pm 5.1\text{g}$  (♀) and  $251.7 \pm 5.9\text{g}$  (♂) of *Oreochromis niloticus* selected from cultured population, studies on effects of starvation on biochemical components in muscle and gonad development were carried out. In experimental period, body weight of female and male samples decreased significantly in 14d ( $P < 0.05$ ), and total amplitude in 28d were 19.72% and 15.93% respectively. In early stage of starvation, gonad weight increased constantly until 21d, and total amplitude in 28d of ovary and spermary were 95.93% and 120.31% respectively. During the same period, content of crude fat and crude protein as well as energy density in muscle decreased continuously, the remarkable change of crude fat of female and male samples showed separately in 7d and 14d ( $P < 0.05$ ), and the similar change of crude protein both showed in 14d. The result showed that starvation had significant effect on biochemical components in muscle and gonad development, in early stage of starvation, experimental samples of *Oreochromis niloticus* could maintain gonad development by using reserved energy, but the trend slowed gradually until stagnated with the prolonging of starvation. Furthermore, the female samples had lower level of reserved energy, and they usually needed more energy for ovary development, so it could be found that the decline trend of main indexes of female samples appeared earlier than that of male samples with more amplitude in every stage.

**Keywords:** gonad development

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