

研究报告

## 两品系萼花臂尾轮虫摄食强度的比较研究

葛雅丽 席贻龙 陈芳

安徽师范大学生命科学学院,重要生物资源保护和利用研究安徽省重点实验室,芜湖 241000

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### 摘要

对广州和芜湖两品系萼花臂尾轮虫的摄食强度及其与食物浓度、食物种类和培养时间之间的关系进行了比较研究.结果表明,食物浓度、食物种类和培养时间均对轮虫滤水率和摄食率有显著影响.两品系轮虫滤水率和摄食率均随培养时间的延长而减小;20 h内,两品系轮虫的总滤水率均与食物浓度呈曲线相关,而两品系轮虫总摄食率均与食物浓度呈直线相关.广州和芜湖两品系轮虫均在以小球藻为食物时有较大的滤水率,分别为 $0.0029 \pm 0.0001$ 和 $0.0039 \pm 0.0008 \text{ ml} \cdot \text{ind}^{-1} \cdot \text{h}^{-1}$ ;广州品系轮虫以小球藻为食物时的摄食率( $0.3992 \times 104 \pm 0.00850 \times 104 \text{ cell} \cdot \text{ind}^{-1} \cdot \text{h}^{-1}$ )显著地大于以栅藻为食物时的摄食率( $0.1670 \times 104 \pm 0.0370 \times 104 \text{ cell} \cdot \text{ind}^{-1} \cdot \text{h}^{-1}$ ),而它们均与以混合藻为食物时的摄食率无显著差异;芜湖品系轮虫摄食率不受食物种类影响.轮虫滤水率和摄食率因食物浓度、食物种类和培养时间的不同而在品系间存在着差异.

关键词 [萼花臂尾轮虫,品系,滤水率,摄食率,藻类食物](#)

分类号

## A comparative study on feeding intensity of two rotifer *Brachionus calyciflorus* strains

GE Yali, XI Yilong, CHEN Fang

Provincial Laboratory of Conservation and Utilization of Biological Resource in Anhui, College of Life Science, Anhui Normal University, Wuhu 241000, China

### Abstract

The study on the feeding intensity and its relationships with food concentration, food quality and cultural duration of Guangzhou and Wuhu *Brachionus calyciflorus* strains showed that the filtration and ingestion rates of the rotifers decreased with their increasing cultural duration. Within 20 hours, there was a curvilinear relationship between the filtration rate of both the two strains and food concentration, but a linear relationship between the ingestion rate and food concentration. The filtration rate of Guangzhou and Wuhu strains was  $0.0029 \pm 0.0001 \text{ ml} \cdot \text{ind}^{-1} \cdot \text{h}^{-1}$  and  $0.0039 \pm 0.0008 \text{ ml} \cdot \text{ind}^{-1} \cdot \text{h}^{-1}$ , respectively, when fed on *Chlorella pyrenoidosa*, which were higher than fed on the other two types of food. The ingestion rate of Guangzhou strain fed on *Chlorella pyrenoidosa* ( $0.3992 \times 104 \pm 0.00850 \times 104 \text{ cell} \cdot \text{ind}^{-1} \cdot \text{h}^{-1}$ ) was higher than that fed on *Scenedesmus obliquus* ( $0.1670 \times 104 \pm 0.0370 \times 104 \text{ cell} \cdot \text{ind}^{-1} \cdot \text{h}^{-1}$ ), but each of them was similar with that on mixed algae. The ingestion rate of Wuhu strain was not significantly affected by food type. The filtration and ingestion rates between the two strains differed with food concentration, food type and culture duration.

**Key words** [Brachionus calyciflorus](#) [Strain](#) [Filtration rate](#) [Ingestion rate](#) [Algae food](#)

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