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研究报告

轮虫培育池生态系统各有机碳库储量及其日变化

李晓东[1,2],赵文[1],赵振兴[1],董双林[2]

[1]大连水产学院辽宁省省级高校水生生物学重点实验室， 大连 116023；[2]中国海洋大学水产学院， 青岛 266003

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摘要 2001年5～6月对辽宁省盘锦光合水产有限公司的两种模式轮虫培育池有机碳库储量及动态进行了研究.结果表明，静水池溶解有机碳（DOC）和颗粒有机碳（POC）库储量平均值分别为5.69±2.90 mg·L^{-1}和24.56 ± 2.12 mg·L^{-1}；流水池DOC和POC分别为9.61±3.17 mg·L^{-1}和24.13 ±2.91 mg·L^{-1}.流水池和静水池TOC、DOC和POC的比例分别为 1∶0.75∶0.25和1∶0.82∶0.18.POC含量高的池塘DOC含量也较高.流水池的POC、DOC周日变动幅度大，静水池昼夜变动幅度小.流水池POC含量白天(5:00～17:00)升高，静水池降低，夜间(15:00～23:00)两池POC含量均降低.从23:00至次日5:00上升，两池分别在17:00和5:00达到高峰.白天(5:00～17:00) 流水池DOC/POC升高，静水池降低；夜间(17:00～23:00)两池均上升，23:00至次日5:00则呈下降趋势.

关键词 颗粒有机碳 溶解有机碳 储量 昼夜变化 轮虫池生态系统

分类号

Storage and diurnal change of organic carbon pools in rotifer-culturing pond ecosystem

LI Xiaodong[1,2], ZHAO Wen[1], ZHAO Zhenxing[1], DONG Shuanglin[2]

[1]Key Laboratory of Hydrobiology Liaoning Province's University, Dalian Fisheries University, Dalian 116023, China; [2]College of Fishery, China Ocean University, Qingdao 266003, China

Abstract

This paper studied the storage and diurnal change of various organic carbon pools in two rotifer (*Brachinus plicatilis*) culturing ponds with different models in Panjin Photosynthesis Fisheries Limited Company, Dawa County, Liaoning Province from May to June 2001. The results indicated that the mean storage of particulate organic carbon (POC) and dissolved organic carbon (DOC) in static water pond was 5.69±2.90 mg·L^{-1} and 24.56 ± 2.12 mg·L^{-1}, and that in current water pond was 9.61±3.17 mg·L^{-1} and 24.13 ± 2.91 mg·L^{-1}, respectively. The ratio of total organic carbon (TOC), DOC and POC in current and static water ponds was 1∶0.75∶0.25 and 1∶0.82∶0.18, respectively. The pond with a high POC concentration was also with a high DOC content. The diurnal change of POC and DOC in current water pond was bigger than that in static water pond, *i.e.*, the POC concentration in current water pond increased in daytime (from 5:00 to 17:00), while that in static water pond was more stable. The POC concentration in the two ponds was decreased from 15:00 to 23:00 but increased from 23:00 to next 5:00, and its peak time was 17:00 for current water pond and 5:00 for static water pond. The DOC/POC ratio in current water pond was increased gradually in daytime (from 5:00 to 17:00), while that in static water pond was decreased. The DOC/POC ratio in the two ponds was increased at night, and tended to dicline from 23:00 to next 5:00.

Key words Particulate organic carbon (POC) Dissolved organic carbon (DOC) Organic carbon storage Diurnal change Rotifer-culturing pond ecosystem

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通讯作者