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## Comparison of filtering effects of the freshwater bivalves on phytoplankton

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Two series of indoor experiments were conducted to study the effect of a filter-feeding mussel on algae biomass and nutrient changes with eutrophic lake water. All the treatments of 24h and 8h experiment showed significant decrease of chlorophyll-*a*, except for the *Unio douglasiae* (UD) treatment (12.1%) in 8h experiment. However, U. d. treatment (87.2%) showed the lowest chlorophyll-*a* concentration among 24h treatments, followed by *Corbicula leana* (CL) (84.1%) and *Corbicula fluminea* (CF) (57.4%). The higher death rate ( $d = \text{day}^{-1}$ ) of total phytoplankton was observed in UD treatment (2.51) of 8hr and in CL (1.59) of 24hr experiment. But, filtering rate (ml/AFDW mg/hr) calculated by mussel AFDW (Ash Free Dry Weight) was the higher in CL treatment (0.8-0.64). The concentration of nitrite and ammonia were elevated in all mussel treatments of 24h experiment, but all the mussel treatments of 8h experiment showed decrease of these nutrients. Soluble reactive phosphorus (SRP) in all the treatments of both 8h and 24h experiment showed slight increase. Our results show that mussels had significant impact on algae biomass change followed by nutrient changes in the water column. Therefore, we suspect that mussels feces and pseudofeces might attribute to the increase of the nutrients in the water. Based on the algae grazing rate and nutrient release rate, in forms of feces and pseudofeces, *Corbicula leana* was the specie that grazed algae most actively with the least nutrient reproduction. Thus, among the three bivalves tested, *Corbicula leana* appears to be an appropriate species to apply in the water quality control of lakes and reservoirs with algal blooms.