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Title: Influence of daylight and incubation interval on water column respiration in tropical fish ponds.

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Abstract: Water column respiration (WCR) was measured in dark BOD bottles for 2, 4 and 8 h intervals during 22 h periods in two 1000 m^2 ponds stocked with *Oreochromis niloticus* at 1 m^{-2}, and fertilized weekly with chicken litter at 750 kg total solids ha^{-1}. Mean WCR ranged from a low of 0.39 mg l^{-1} for 8 h nocturnal intervals to a high of 0.62 mg l^{-1} for 2-h diurnal intervals. WCR was significantly influenced by daylight and time into the diurnal or nocturnal period when it was determined. Mean WCR was significantly greater during the day than during the night ($P<0.01$). During the day, 2 h incubation intervals resulted in significantly higher WCR than 4 h or 8 h intervals ($P<0.01$); length of incubation interval did not significantly influence nocturnal WCR ($P>0.05$). Higher WCR during the day and during short diurnal incubation intervals was attributed to greater availability of photosynthetic respiration substrate. Diurnal, diel, or nocturnal WCR could be best estimated by a single 2, 4 or 8 h incubation interval, respectively, beginning at 0800 h.

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