

ABSTRACT - NITROGEN FIXATION IN THE RHIZOSPHERE OF AQUATIC  
MACROPHYTES

Nitrogen fixation ( $C_2H_2$  reduction) by bacteria in the rhizosphere of *Nymphoides indica*, *Pontederia cordata* and in plants of *Utricularia breviscapa* was studied under anaerobic conditions at one site of Lobo Reservoir (Brotas-Itirapina, SP). Significant activities were correlated with washed root & rhizomes and unwashed plants incubated at 28 °C; high rates of acetylene reduction were observed for all glucose treatments. In the summer, the  $N_2$  fixed per day (6.0-31.5 and 5.0-20.0  $\mu gN_2/g$  d.w.) could provide 2.0-10.0 and 1.0-2.5% of the standing stock  $N_2$  demand of *Nymphoides indica* and *Pontederia cordata*, respectively. In the winter, it was estimated that 3.0-11.0% of the  $N_2$  requirements *Utricularia breviscapa* could be supplied through biological  $N_2$  fixation (2.0-3.5  $\mu gN_2/day/g$  d.w.).