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Lippia alba (Verbenaceae) hydrolate as sedative of tambaqui (*Colossoma macropomum*) juveniles in simulated transport conditions

Lippia alba hydrolate (LAH) is produced as a secondary product in essential oil extraction. The objective of this study was to evaluate the use of LAH in a simulation of the transport of tambaqui (*Colossoma macropomum*) juveniles. A series of 17 hr simulations were performed using load densities of 30, 60 and 90 juveniles per L and four LAH concentrations of 0.4%, 1%, 2% and 5%, with a control of just water. Fish survival, temperature, dissolved oxygen, conductivity, pH, ammonia excretion, alkalinity, water hardness and net Na⁺, K⁺, Cl⁻ fluxes, were all evaluated before and after the transport simulations. Mucous cell densities in the gills were also determined microscopically, post simulation. The results showed that addition of 5% LAH achieved better survival during the simulation than the water control. Dissolved oxygen was significantly lower with an increased load density. Also, conductivity, NH₄ excretion and net ionic fluxes (K⁺ and Cl⁻) were lower with 5% LAH, although mainly where higher load densities were tested. Mucous cell density was lower in LAH concentrations of 2% and 5%, again with higher load densities. In view of these findings, it is suggested that 5% LAH is an effective sedative for use in the transport of tambaqui, mainly with high load densities. This work is the first study of LAH and highlights its potential applications in aquaculture management.

Biography

Lenise Vargas Flores da Silva has completed her PhD at the Federal University of São Carlos- São Paulo-Brazil in 2006 and postdoctoral studies at the State University of New York-Albany-USA (in 2016). She is the coordinator of the Graduate Program of Continental Aquatic Resources of Amazonia at the Federal University of Western Pará-Brazil. She and her partners have contributed to research innovations using plant extractives applied to animal husbandry and aquaculture development in Amazonia- Brazil.

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