



**Evaluation of the reduction of acute toxicity of “priprioca” hydrolate (*Cyperus articulatus* L. var. *nodosus* - Cyperaceae) in young tambaqui fish (*Colossoma macropomum* Cuvier) as a function of storage time of the product**

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Priprioca (*Cyperus articulatus* var. *nodosus*) is very used by cosmetic industries and in folk medicine. Due to the increase on demand of priprioca essential oil and the discard of hydrolate that is produced during essential oil extraction process, the aim of this work was evaluate the acute toxicity of priprioca hydrolate as a function of storage time in young tambaqui fish (*Colossoma macropomum*). Two acute toxicity tests (letal concentration in 96 h – LC<sub>50-96h</sub>) were done with one year interval between each test, using the hydrolate of the same extraction (1). Chemical analysis of hydrolate was done with an interval of approximately one year. The following water/hydrolate proportions as treatments were used: 5/95, 10/90, 15/85, 20/80, 25/75, 50/50 (%) and 6/94, 9/91, 12/88, 15/85 e 18/82 (%), in the first and second assays, respectively, and the negative control contained just water. The tests were done in triplicate, with sample number of 15 young fish (4.48cm±1.05 and 1.27g ± 0.09/ 4.6±0.5cm e 1.4±0.5g) for each treatment. The animals remained in solution during 96 h and the physicochemical parameters of water (temperature, pH, dissolved oxygen and conductivity) were daily monitored. Physicochemical parameters showed acceptable limits for the species, except conductivity in the proportion of 50% hydrolate (higher than 500 µS/cm<sup>2</sup>). By probit analysis (program SPSS16) values of LD<sub>50-96h</sub> in the first and second bioassays were 12.1 and 14.8%, respectively. Chemical analysis of hydrolate showed at first analysis following major components: *trans*-sabinol (22.44%), myrtenol (16.21%) and verbenone (28.81%); second analysis of hydrolate one year after the extraction (hydrolate was kept in the dark under refrigeration) showed following composition: *trans*-pinocarveol (25.43%), myrtenol (20.09%) and verbenone (33.44%). These data showed that during the one year period chemical alterations of hydrolate occurred. Probably, *trans*-sabinol transformed itself into *trans*-pinocarveol, its diastereoisomer (C<sub>10</sub>H<sub>16</sub>O). This molecular rearrangement occurred by hydrate migration looking for the more stable conformation for the molecule. This modification on chemical composition of the hydrolate diminished its toxicity for young tambaqui fish. More studies related to the effects of the chemical components of priprioca hydrolate in fishes or aquatic environment are necessary for the elucidation of the potential biological impacts from hydrolate discard or using in animal production.

1. Silva, A.D.R.; Santos, R.B.; Bruno, A.M.S.S.; Soares, E.C. Acta Amazônica, Manaus, 2013, 43, 517-524.

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