

Article title

Assessment of two natural toxins (microcystin and nodularin) for the control of *Anopheles multicolor*(Diptera: Anophelidae)

Abstract

Laboratory experiments were conducted to determine the efficacy of two cyanobacterial toxins(microcystin and nodularin against the different larval instars, pupal and adult stages of *Anopheles multicolor*. Experiments were carried out in plastic cups, and the two toxins were tested at four concentrations, where the LC₉₀,LC₅₀,LC₂₅ and LC₁₀ for the first instar larvae under laboratory conditions were 2.95,3.80,4.95 and 7.45µg/ml for microcystin and 4.37,6.40,8.85 and 14.39µg/ml for nodularin, respectively.

While the LC₅₀ for the second ,third and fourth larval instars were 6.70,8.92, and 9.70µg/ml for microcystin toxin and 12.25,15.95 and18.20µg/ml for nodularin, respectively. The most sensitive instar was recorded is the first and the most resistant instar was the fourth larval instar. The delayed effects of different concentrations (LC₁₀, LC₂₅ and LC₅₀) of the two tested toxins on some biological activities also studied when treating the fourth larval instar.