



The protective role of *Spirulina platensis* to alleviate the Sodium dodecyl sulfate toxic effects in the catfish *Clarias gariepinus* (Burchell, 1822)

Alaa El-Din H.SayedaMohammad M.N.Authman

Abstract:

Sodium dodecyl sulfate (SDS) as anionic surfactant is common in household and personal care products and reach in the aquatic ecosystems from different applications. Present work aimed to study the effects of SDS and the potential ameliorative influence of *Spirulina platensis* (SP) in the African catfish *Clarias gariepinus*. Fish was exposed to SDS and SP, individually or in combination in four equal groups for two weeks. The 1st group (control), 2nd group (SDS-treated), 3rd group (SDS, 0.1 mg L⁻¹ + SP, 100 mg L⁻¹ water) and 4th group (SDS, 0.1 mg L⁻¹ + SP, 200 mg L⁻¹). Serum samples were used to analyze hepatic and renal functions, electrolytes, genetic, and antioxidant biomarkers. The results revealed that SDS exposure induced hepatic and renal dysfunction, electrolytes imbalance, as well as significant disruption in enzymatic and non-enzymatic antioxidants, and increase in alterations, micronuclei and apoptosis percentages in erythrocytes. SP addition restored these biochemical and genetic variations close to control levels. Thus, the present study suggests that SP could protect the catfish against SDS-induced injury by scavenging ROS, sustaining the antioxidant status and diminishing DNA oxidative damage.

Keywords:

SDS, Hematology, Biochemical, Oxidative stress, *Clarias gariepinus*, *Spirulina platensis*

Published In:

Ecotoxicology and Environmental Safety , Vol.163,No.15 , PP.136-144