

Short-term repeated dose biochemical effects of *Catha edulis* (khat) crude extract administration in rats

ABSTRACT

The leaves of khat (*Catha edulis*) are reported to have stimulating and pleasurable effects and are chewed habitually by people of East Africa and Arabian Peninsula. Due to various effects of khat the present study was undertaken to evaluate the short-term repeated dose effects of freeze dried khat leaves crude extract administration to male Sprague-Dawley rats. In this study, the effects of *Catha edulis* leaves extract oral administration on plasma concentration of Malonyldialdehyde (MDA), triglycerides, cholesterol, HDL-cholesterol, LDL-cholesterol, uric acid, albumin and testosterone and liver enzymes activities were examined. Four groups of rats were exposed to 0, 500, 1000 and 2000 mg kg⁻¹ body weight/day for 6 consecutive weeks. Our results demonstrated that food consumption and body weights changes were non-significantly different relative to the control. There were no significant effects observed on the levels of plasma MDA, cholesterol, triglycerides, HDL-cholesterol, LDL-cholesterol, uric acid, albumin, liver enzymes or Acid Phosphatase (ACP) in the treatment groups relative to the control. Administration of freeze dried crude *Catha edulis* leaves extract for 6 weeks was found to increase plasma testosterone levels in the two high doses treatment groups (1000 and 2000 mg kg⁻¹ body weight) in more than 2 folds, while it was non-significantly increased in the 500 mg kg⁻¹ body weight treatment group, as compared to control. The data indicated that at the doses and time period tested, *Catha edulis* freeze dried crude extract could be considered as aphrodisiac. Moreover, it did not produce any significant effect on the normal biological markers of liver toxicity or prostatic adverse effects.

Keyword: Khat; *Catha edulis*; Lipid peroxidation; MDA; Testosterone