

Effect of Leaf Essential Oil of *Citrus sinensis* at Different Harvest Time on Some Liver and Kidney Function Indices of Diabetic Rats

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Abstract : This study was conducted to investigate the effect of the leaf essential oil of *C. sinensis* harvested at 7.00a.m and 4.00p.m on some Liver and Kidney function indices of diabetic rats as well as investigate the effect of time of harvest on the observed effect. Experimental animals were divided into 4 groups (A, B, C and D). Diabetes mellitus was induced in all animals, except the normal control group (Group A), by injecting 150mg/kg body weight of alloxan monohydrate intraperitoneally. Group A received distilled water while group B (diabetic control group) was not treated. Group C and D were treated with leaf essential oil of *C. sinensis* harvested at 7.00 a.m and 4.00 p.m respectively at a dose of 110 mg/kg body weight every other day for 15 days. Alkaline phosphatase (ALP), Alanine Transaminase (ALT) and Aspartate Transaminase (AST) activity was evaluated in the serum, Liver and Kidney of studied animals. Total and Direct Bilirubin level, Total Protein and Globulin, Creatinine and Urea level were also evaluated. Result showed that creatinine and urea, serum ALP, AST and ALT levels was significantly reduced ($p < 0.05$), while the levels of total Protein and Globulin increased significantly ($p < 0.05$) for the treated animals compared to the diabetic control group. In conclusion, the leaf essential oil of *Citrus sinensis* ameliorated the impaired renal and liver function; however, the time of harvest of the leaf does not significantly affect its ameliorative effect.

Keywords : *C. sinensis*, function indices, harvest time, leaf essential oil.

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