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Effect of *Psidium guajava* Leaf and its Aqueous Extract on Rats Suffering From Diabetes and Acute Renal Failure, and its Practical Application in the Production of Bread

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ABSTRACT

The present study was carried out to assess the effect of *Psidium guajava* leaf and its aqueous extract on nutritional and biological status of rats suffering from diabetes and acute renal failure, in addition to determined the chemical composition and phenolic compounds of *Psidium guajava* leaf, also using *Psidium guajava* leaf in the production of bread. Forty eight male albino rats were divided into two main groups, the first main group (n = 6 rats) fed on basal diet, as a normal control group, the second main group (42 rats) was injected with alloxan and glycerol, respectively, to induce diabetes and acute renal failure. Then the rats in the second main group were divided into seven subgroups (n = 6): The first subgroup: fed on basal diet, as a control positive group (diabetic and acute renal failure group). The second, third and fourth subgroups: were fed on basal diet and treated daily with (100mg, 200mg and 400 mg/kg body weight) extraction of *Psidium guajava* leaves, respectively. The fifth, sixth and seventh subgroups: were fed on basal diet containing 2.5%, 5% and 10% *Psidium guajava* leaves, respectively. Results indicated that, treatment of rats which suffer from diabetes and acute renal failure with the three dosage of *Psidium guajava* leaves extract, or the three levels of *Psidium guajava* leaves led to significant decrease in BWG%, (liver and kidney) weights / body weight%, glucose, liver enzymes, lipid profile (except HDL-c), kidney functions, while these treatments caused significant increase in the activities of catalase, superoxide peroxidase and glutathione peroxidase antioxidants. The data in this research revealed that, the highest improvement in all parameters recorded for the groups treated with 400 mg/kg b.w. extraction of

Psidium guajava leaves and 10% *Psidium guajava* leaves. The results of this study also showed that, all samples of fortified bread with (2.5%, 5% and 10% *Psidium guajava* leaves) were accepted sensory, because the total scores of sensory evaluation of them were higher than 75%. Therefore, it can be recommended that, the *Psidium guajava* leaf, *Psidium guajava* leaf extract and the bread fortified with these leaves attenuate the symptoms of patients which suffer from diabetes and acute renal failure and protect against its related complications.

Key words: *guajava* leaf – phenolic compounds – extraction - rats - diabetes - acute renal failure .