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Impact of natural antioxidant on reduction of oxidative stress in hyperglycemic rat fed germinated pigeon pea diet

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The present study investigated antioxidant activity of extract of germinated pigeon pea (*Cajanus cajan*) in diet fed-alloxan induced diabetic rats. Germination was done in controlled dark chambers (100% RH, 28°C). The phenolic compound, DPPH radical scavenging activity and the inhibition of α -glucosidase and α -amylase activity before and after germination were investigated. Blood glucose levels of the rats before and after the feeding trials were measured by using blood glucose measuring strips. Oxidative parameters like lipid peroxidation (LPO) and reduced glutathione (GSH) were determined spectrophotometrically in the diabetic rats for four weeks. Germination increased the total phenolic and antioxidant activity by 30.12% and 63.52% respectively. Germination also increased the inhibitory potential of pigeon pea extract against α -glucosidase and α -amylase compared with the non-germinated pigeon pea extract. Induction of rats with alloxan led to significant ($p < 0.05$) increase in fasting blood glucose level. Consumption of germinated pigeon pea extract led to a significant reduction in the fasting blood glucose level in the diabetic rats ($P < 0.05$). On administration of germinated pigeon pea extract, LPO reduced to almost normal and increased the levels of GSH. The present study concluded that consumption of germinated pigeon pea can be good dietary supplement for diabetes and dyslipidemia.

Biography

Uchegbu Nneka N is currently doing her PhD at Enugu State University of Science and Technology. She is at present lecturing at the Institute of Management and Technology Enugu Nigeria and has risen to the rank of senior lecturer. She has published many papers in reputed journals.

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