



## Endocrine Disruptive Potential of Sesame Phytoestrogenic Lignans on Adult Male Sprague Dawley Rats Blood Cells Profiles- Myth or Reality?

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### ABSTRACT

Objective: Sesame has constituted one of the staple foods in the diet of West Africans especially in Togo and Nigeria since ancient times. Over the past few decades, concern has been expressed about the potential effects of estrogenic endocrine disruptors (EEDs) on human health. However, little attention has been paid on the haematological impact of sesame leaves consumption. Hence, we aim to investigate the role of sesame diet (phytoestrogens) on haematological parameters of adult male Sprague dawley rats and

to confirm the folkloric claim of sesame leaves nutritive/blood supplementary effects.

*Methodology and results:* Thirty adult male SD rats randomly divided into 3 groups of 10 rats each. The treated groups I and II received oral garvage of 28.0 mg /kg bw/day and 14.0 mg/ kg bw/day of aqueous extract of sesame leaves, respectively. The control group received equal volume of 0.9% normal saline per day for 6 weeks. Blood was collected from the animals in heparinized bottles for haematological profiles analysis using the Coulter counter analyzer. Statistical analysis of data was done using SPSS software and  $P < 0.05$  considered statistically significant.

There was evidence of significant ( $P < 0.05$ ) increased in red cells indices and white cells profiles. In addition, significant reduction in platelets indices with exception of the mean platelet volume (MPV) observed in both treated groups in a dose related manner when compared to the control. However, all these parameters were within the normal range expected for the normal physiological state of rats. No evidence of toxicity was observed arising from interaction of sesame's active nutritive ingredients with the respective blood cells parameters.

*Conclusion and application of findings:* Consuming sesame can help in prevention of anaemia of nutritional origin. In addition, our results show that consuming sesame prevents platelet aggregation thereby enhancing improvement in the cardiovascular status and reducing complications from anaemia. Sesame leaves extract is safe for consumption and it improves the haematological profiles.

**Key words:** *Sesamum radiatum* leaves, blood cells indices, Sprague Dawley rats