

## Haematological, blood biochemical constituents and histopathological responses of growing rabbits fed different levels of moringa leaves

A.Y. El-Badawi<sup>1\*</sup>, I. El-Wardany<sup>2</sup>, A.A.Abedo<sup>1</sup> and H.A.A.Omer<sup>1</sup>

<sup>1</sup>Animal Production Dept., National Research Centre, 33 EL Bohouth St. (Former EL Tahrir St.), P.O. 12622, Dokki, Giza, Egypt.

<sup>2</sup>Poultry Production Dept., Faculty of Agriculture, Ain–Shams University, P.O. Box 68 Hadayek Shubra 11241 Cairo, Egypt.

**Abstract:** This study was conducted to investigate the effect of different supplemental levels of *Moringa oleifera* leaves (ML) on haematological profile, blood biochemical constituents and histopathological changes of growing rabbits. Thirty six male New Zealand White (NZW) rabbits aged 4-5 weeks with initial average body weight of 566.5 g were randomly blocked by weight into four treatment groups (9 rabbits each). Rabbits of each group were individually housed and fed ad libitum on a basal diet supplemented with 0, 0.15, 0.30 and 0.45 % ML for a feeding period of 56 days. At the end of the experimental period three representative rabbits from each group were slaughtered for blood and histological examinations. The results showed that all haematological and blood plasma biochemical parameters were within the normal range, however significant ( $P < 0.05$ ) differences were recorded among treatment groups for red and white blood cells count and haemoglobin (Hb) concentration, where the highest values were recorded for rabbits fed 0.3 % ML. Differential leukocytes (%) showed comparable values among groups. Blood plasma total protein, albumin and globulin concentrations were significantly ( $P < 0.05$ ) improved with increasing ML supplementation level, meanwhile, urea, alanine lipoprotein transaminase (ALT) and creatinine recorded the highest values with 0.45 % ML diet. Blood glucose was ( $P < 0.05$ ) decreased with 0.15 and 0.30% ML, while it was significantly increased with increasing level of moringa to 0.45%. Thyroid hormones ( $T_3$  and  $T_4$ ) were higher ( $P < 0.05$ ) with 0.15 and 0.30% ML treatments than control, but. Microscopic examination of the red blood corpuscles showed clear deformation and agglutination with 0.45% ML treatment. Liver and kidney tissues showed obvious harmful damages with 0.45% ML diet. It's safe to conclude that, *Moringa oleifera* dry leaves showed positive physiological effects on growing rabbits when fed at 0.15 to 0.30% of the diet.

**Keywords:** *Moringa oleifera* dry leaves, rabbits, haematological profile, blood biochemical constituents and histopathological examination.