

### البحث السادس

<p>Maher, M., K Abdelghany, A., <b>Allak, M.A.</b>, Emeash, H.H. and Khalil, F., (2023). Dietary Supplementation of Moringa Oleifera Leaves and Their Nanoparticles to Rabbit Does Altered the Neonates Performance, Behavioural and Physiological Response to Stress. <i>Journal of Applied Veterinary Sciences</i>, 8(3), pp.91-104.</p>	<p>البحث السادس</p>
<p>مشارك مع آخرين من خارج التخصص – منشور في مجلة دولية Q3 مستخلص من رسالة</p>	<p>6</p>
<p><b>Title</b></p>	<p>Dietary Supplementation of Moringa Oleifera Leaves and Their Nanoparticles to Rabbit Does Altered the Neonates Performance, Behavioural and Physiological Response to Stress.</p>
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### ABSTRACT

This study was conducted to investigate the effects of supplementing rabbits does with nano-zinc (NZn), nano-moringa (NMo), or moringa extract (MoE) on their growing rabbits (GR; fed on a moringa diet) behaviour, performance, and weaning stress alleviation. Twenty four does were equally divided into 4 groups; NZn-treated dams, NMo-treated dams, moringa extract MoE-treated dams, and non-treated dams (control; NTD) throughout gestation, lactation, and until the weaning of neonates. Immediately after weaning at about 35 days of age, 48 GR [12 from each treated dam group] were subdivided into 8 equal groups (each 12 GR/gp divided into 2 sub-groups: n = 6 per each); one sub group fed on a basal diet (BD) and the other fed on a 5% *Moringa olifera*-containing ration (MD) for 4 weeks. Feed intake (FI), body weight, and behavioural changes in the GR were recorded. Blood samples were collected at the termination of the experiment to assess oxidative stress (MDA, GSH), growth indicators (T3, T4), and liver and kidney functions. As a result, MD supplementation significantly ( $P < 0.01$ ) increased FI compared to BD in the GR from control and NZn-treated dams. In addition, MD supplementation resulted in increased feeding and drinking behaviours frequency and duration, while self-grooming was reduced in both NTD and NZn-treated dams in relation to BD supplemented groups. Moreover, MD significantly decreased oxidative stress in GR from NTD. Also, MD induced a significant ( $P < 0.01$ ) increase in T3 level and enhanced the liver and kidney functions in GR from all treated dams compared to control. Furthermore, MD supplementation increased the economic efficiency of GR. In conclusion, MD supplementation to GRs or treatment of their dams with the mentioned treatments decreased weaning stress, improved rabbit behaviour, and improved economic efficiency, but no significant improvement in the GRs' performance was observed. However, treatments of dams and their GR with MD resulted in GR inability to cope with weaning stress and induced renal and hepatic damage. Thus, it is recommended to supplement GR with MD after weaning or prenatal treatment of their dams with herbal extract or nano-herbal particles, but a combination of both treatments is not recommended.