

# **Evaluating the role of some types of probiotic on the performance of rabbits in Egypt and South Africa**

**By**

**Tahany Ramadan Hussein Mohamed Ali**

*B.Sc., Agric, Ain Shams University (1999)*

*Diploma Genetics and Molecular Genetics University of Sadat city (2002)*

*M.Sc. of Genetic Engineering and Biotechnology Research Institute (Biotechnology Industrial – Fermentation). University of Sadat city, (2014).*

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**Student's name:** Tahany Ramadan Hussein

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**Supervising Committee:** Dr Prof. Hassan Mohamed Sobhy- Dr Prof. Nagwa Abd El Hadi Ahmed – Dr Prof. Shawky Ahmed El Desouky El Medany

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## **ABSTRACT**

The experiment aimed to study the effect of dietary supplementation probiotics (*Saccharomyces boulardii* and Bio-Plus) and organic selenium on hematological parameters, immune responses, meat quality, caecum content and productive performance of V-Line growing rabbits. A total number of 54 weaned V-Line rabbits were randomly divided into 6 equal treatments (9 rabbits / treatment). The 1<sup>st</sup> treatment (T1) served as control. The 2<sup>nd</sup> treatment (T2) rabbits received 0.6 g *Saccharomyces boulardii* (S.b.) / kg diet. The 3<sup>rd</sup> treatment (T3) rabbits received 0.4 g *Bacillus subtilis* and *Bacillus iicheniformis* (Bio-Plus) / kg diet. The 4<sup>th</sup> treatment (T4) rabbits received 0.6 g S.b. + 0.4 g Bio-Plus / kg diet. The 5<sup>th</sup> treatment (T5) rabbits received 0.3 mg organic selenium / kg diet. The 6<sup>th</sup> treatment (T6) rabbits received 0.6 g S.b. + 0.4 g Bio-Plus + 0.3 mg organic selenium / kg diet. The results showed that, supplementation of rabbit's diets with different types of probiotics and/or organic selenium led to significantly improvement in growth performance (body weight, body weight gain and feed conversion) of V-Line rabbits as compared to control group. Selenium % of rabbit's meat was increased ( $P<0.05$ ) in the rabbits of T5 and T6 as compared to other treatments. Thiobarbituric acid reactive substance was decreased ( $P<0.05$ ) in the meat rabbits of T5 and T6 as compared to other treatments. IgG, IgM and IgA were significantly increased in the rabbits of T6 compared to rabbits in control group. Hb concentration, Ht %, glucose, total lipids, total protein and globulin were increased ( $P<0.05$ ) in the rabbits of T6 as compared to control group. Volatile fatty acids (VFA) levels were significantly increased in the rabbits of T2, T3, T4, T5 and T6 compared to control group. Ammonia level was decreased ( $P<0.05$ ) in the rabbits of T3, T5 and T6 compared to rabbits on control group. Bacteria count was decreased ( $P<0.05$ ) in the rabbits of T3, T4, T5 and T6 compared to rabbits in control group. Supplementation different types of probiotics and organic selenium improved economic indicator of treated groups compared to the control group. In conclusion, supplementation of different types of probiotics and organic selenium (0.6 g S.b. + 0.4 g Bio-Plus + 0.3 mg organic selenium / kg diet) had a beneficial effect on growth performance, immunological parameters and good health status of rabbit. Nevertheless, further studies are required to assess the efficacy of dietary probiotics on rabbits reared under hot environmental conditions.

**Keywords:** rabbits, probiotic, haematological profile, immune response, meat quality, productive performance and caecum characteristics.

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## LIST OF ABBREVIATIONS

ALB	Albumin
Bio	Bio-plus
CF	Crude fiber
CP	Crude protein
DM	Dry matter
EE	Ether extract
EM	Effective Microorganisms
FAO	Food and Agriculture Organization of the United Nations
FCR	Feed conversion ratio
FI	Feed intake
FC	Feed conversion
Hb	Hemoglobin
IgG, IgM & IgA	Immunoglobulins
ITC	International Trade Centre's Council
LIN	Linseed oil
NAMC	National Agricultural Marketing
Sb	<i>Saccharomyces boulardii</i>
Se	Selenium organic
Sw	Slaughter weight
SARS	South African revenue services
TBARS	Thiobarbituric acid reactive substances
PUFA	Polyunsaturated fatty acids
VFA	Volatile fatty acid