Research Paper

Impact of Thyme Oil and Lactobacillus acidophilus as Natural Growth Promoters on Performance, Blood Parameters and Immune Status in Growing Rabbits.

El-kaiaty AM, El-Moghazy GM, El-Manylawi MAF and Abdel-Mageed MGY.


DOI: https://dx.doi.org/10.36380/scil.2020.wvj1
ABSTRACT

Present study was conducted to evaluate the effect of thyme oil and *lactobacillus acidophilus* (supplement) as growth promoters in rabbit. 72 weaned V-Line male rabbits were randomly allocated into 4 equal groups. The first group (G1) was without any additives and consider as control group. The second group (G2) treated with the addition of *lactobacillus acidophilus* in drinking water in a concentration of 10^8 cfu/ml. The third group (G3) treated with the addition of thyme oil in drinking water in a concentration of 1 ml/liter. The fourth group (G4) treated with the addition of both *lactobacillus acidophilus* and thyme oil in drinking water in a concentration of 10^8 cfu/ml plus 1ml/L, respectively. The obtained results showed that, all treatments had significant improvement effects on the measured parameters (performance characteristics, cecum characteristics, RBCs, WBCs, kidney function, trigly- cerides, total cholesterol, sheep RBC’s titer, liver antioxidant markers and hormones markers) when compared to the control group. The live body weight of G3 and G4 groups were higher (2116 and 2058 g) than those found in G2 and G1 groups (1958 and 1850 g) respectively. In addition, the body weight gain of G3 and G4 groups were higher (1364 and 1307 g) than those found in G2 and G1 groups (1207 and 1100 g). Moreover, the daily weight gain of G3 and G4 groups were higher (32.49 and 31.13 g/d) than those found in G2 and G1 groups (28.74 and 26.19 g/d). In addition, feed conversion ratio of G3 and G4 groups were higher (3.41 and 3.61) than those found in G2 and G1 groups (3.66 and 4.67). While G4, G2 and G3 groups had a significant enrichment effect on the intestinal beneficial bacteria. In conclusion, in present experiment inclusion thyme oil and/or *lactobacillus acidophilus* in the drinking water that stimulated body weight gain and increased feed conversion rate, and can be used as growth promoters in rabbit nutrition successfully without notable side effects on growing rabbits. Furthermore, it showed a significant positive effect on the physiology for treatment groups G3, G4 and G2 respectively compared to the control group.

**Key words**: Immunity, *Lactobacillus acidophilus*, Performance, Probiotic, Rabbit, Thyme oil
ABSTRACT

Determination of Potential Candidate Genes Associated with Milk Lactose in Egyptian Buffalo

Awad MAA, Abou-Bakr S, El-Regalaty H, El-Assal S.E-D and Abdel-Shafy H.

The aim of the present genome-wide association study (GWAS) was to identify single nucleotide polymorphisms (SNPs) and candidate genes associated with lactose percentage and yield traits, such as TPD52 and ZBTB10 on chromosome 15; AADAT and GALNTL6 on chromosome 1; AGX1 and MSH2, ANK2 and COL8A1 and PLOD2 on chromosome 3 and COL8A1 and PLOD2 on chromosome 1. Our findings provide the basis to uncover the genetic mechanisms that control lactose traits variation in Egyptian buffalo.

Key words: Single nucleotide polymorphisms, Candidate genes, Genotype, Milk lactose percentage, Milk lactose yield.

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Blood metabolites, Egyptian breeds, Gene expression, Growth performance, Linear body measurements, Leptin expression, Plasma total protein levels, Plasma albumin levels, Plasma triglyceride levels, Plasma cholesterol levels, Plasma urea levels, Plasma glucose levels, Plasma total lipids levels, Plasma iron levels, Plasma copper levels, Plasma zinc levels, Bovine Respiratory Syncytial Virus (BRSV), Bovine respiratory syncytial virus, Cattle, PCR, Phylogenetic analysis.


ABSTRACT

The growth performance of lambs attributes the economic viability of animals. Faster growth and increased weight gain in young lambs are important factors which contribute to the profit margin. The present study was carried out to investigate the effects of age and breed on growth performance, blood metabolites and gene expression in three sheep breeds, namely Ossimi, Rahmani and Barki. The animals (42) each breed at the age of 7-9 months (21 males and 21 females) were divided into three ages categories (7 – 9, 10 – 12, and 13 -16 months). The results showed that there was a significant increase in sheep’s live body weights toward advanced ages till the second age category for all breeds, the highest values of linear body measurements were observed in Ossimi breed. There was a non-significant inverse correlation between age and breed on plasma total protein levels, plasma albumin levels, plasma triglyceride levels, plasma cholesterol levels, plasma urea levels, plasma glucose levels, plasma total lipids levels, plasma iron levels, plasma copper levels, plasma zinc levels. The growth performance was affected by age, breed and interaction of age and breed. The results of the current study should be taken into account to develop specific strategies for optimizing the growth performance in each breed and various ages. The results of the current study should be taken into account to develop specific strategies for optimizing the growth performance in each breed and various ages.

Key words: Growth performance, Blood metabolites, Gene expression, Linear body measurements, Leptin expression, Plasma total protein levels, Plasma albumin levels, Plasma triglyceride levels, Plasma cholesterol levels, Plasma urea levels, Plasma glucose levels, Plasma total lipids levels, Plasma iron levels, Plasma copper levels, Plasma zinc levels.

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Molecular and Phylogenic Analysis of Bovine Respiratory Syncytial Virus in Nineveh province, Iraq.

Research Paper


ABSTRACT

Bovine Respiratory Syncytial Virus (BRSV) is one of the worldwide distributed infectious agents that cause respiratory disease in cattle populations, which results in considerable economic loss due to its negative effects on health and production. In this study, 450 nasal swab samples were collected from cows with different ages and breeds in different areas across Nineveh province, Iraq. Molecular diagnosis using nested RT-PCR and phylogenetic analysis of the N gene of the BRSV strain was conducted. Phylogenetic analysis was made using the neighbor-joining system after comparison with other GenBank data. In conclusion, phylogenetic analysis of BRSV can provide information about the viral strains responsible for diversified clinical disease in cattle populations which causes considerable economic loss due to its negative effects on health and production.

Key words: Bovine respiratory syncytial virus, Cattle, PCR, Phylogenic analysis.

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The content of glycogen in white rats during the infection period


The content of glycogen in Trichinella spiralis in white rats during the infection period

Saider EA and Andreyamor OP (2020). The role of glycogen in Biological Cycle of Trichinella spiralis

The role of glycogen in Biological Cycle of Trichinella spiralis

Saider EA and Andreyamor OP (2020). The role of glycogen in Biological Cycle of Trichinella spiralis

Bovine respiratory syncytial virus, Cattle, PCR, Phylogenic analysis.
The intestinal colonization, cellular responses, mucosal and systemic immune responses of 
the dose-dependent Salmonella Enteritidis fresh bacterial culture (1.2x10^8 CFU/ml). The survival rates and the pathological changes of challenged chickens in the different 
immunized chickens was measured at different intervals, until 42 days of age. 
findings have shown the significant immunostimulatory effect of CpG-ODN and its effect on 
Salmonella Enteritidis bacterin adjuvanted with aluminum hydroxide and a non-immunized group. There 
Abed M, Elhariri M, El-Helw R, Khattab MS, Setta A and Soliman R. 
Bacterial oligodeoxynucleotide containing Cytosine Guanine motifs (CpG-ODN) has been 
protection and improved survival rate of challenged chickens 
Salmonella Enteritidis bacterin in broiler chickens. Two hundreds one-day-old broiler chicks, divided into 5 
groups, were used in this study. First three groups were immunized with 
CpG ODN-Adjuvanted Bacterin Against 
Enteritidis was not recovered from the intestinal tract of vaccinated challenged groups. There 
Immunomodulatory Effect of CpG ODN-Adjuvanted Bacterin Against 
Key words: 
Salmonella enterica 
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ABSTRACT

Distribution Profile and Function of Carbohydrate Residues in Testes of Immature and 


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Salmonella CpG ODN


ABSTRACT

Foot and Mouth Disease (FMD) is highly contagious disease affected cloven-hoofed animals 
during August to December 2017. Serum samples were examined by 3ABC-ELISA for 
differentiating between infected and non-infected animals. While tissues biopsies and 
86 samples of tongue epithelium biopsies, fluid vesicles 
were stained with hematoxylin and eosin and lectin histochemistry of Lens culinaris agglutinin (LCA), PHA-L, SJA, PSA, and WGA. Data were analyzed with 
ABSTRACT

86 samples positive for FMDV different serotypes while FMDV serotype differentiation in 
untreated and treated tissues biopsy of cattle were 18 (28.12%), 12 (18.75%), 3 (4.68 %) and 4 (6.25%). Also, the 
un-coagulated blood samples were examined by Sandwich ELISA, Reverse Transcriptase 
and rapid diagnosis of FMD disease. 86 samples and saliva, as well as 86 coagulated and uncoagulated blood 
as well as RT-PCR, and 3ABC- ELISA were given nearly the same results. Although the 
rRT-PCR generated results in less than 6 h and this is an important feature when definitive 
which result in substantial economic losses. The present study was aimed to detect FMDV by 
and buffaloes in Egypt.

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PCR based RNA polymerase gene RP030 and the real-time qPCR showed 15 positive with percentage 27.77% early confirmation of positive Ca PVs in low-income countries. PCR based RNA polymerase gene RP030 gene based and Real-Time qPCR fluorescent references extraction kits compared to novel modification method (Microwave extraction). The disease surveillance, detection and differentiation of Ca PV in clinical and subclinical samples conventional PCR RNA polymerase gene RP030 gene based and Real-Time qPCR would be useful for management and treatments of outbreaks. The present study aimed to detect and identify in goats were 1 and 2 from 26 scab biopsy samples respectively, however they are useful for differentiating SPPV and GTPV; in one PCR run; without any post-processing steps. We collected eighty scabs from clinically affected animals (54 sheep and 26 goat) that current study confirmed that the suitability of the PCR-based RNA polymerase gene RP030 gene is suitable for differentiating between SPPV and GTPV; in one PCR run; without any differentiating SPPV and GTPV from AGPT and CIE in CAM or in clinical samples without reducing stillbirth. Since the use of highly prolific sows is increasing, stillbirth continues to be an issue to be dealt with in swine farms in Vietnam.

Key words:

Stillbirth in pig has been studied worldwide, but, its situation in Vietnam has never been reported. Therefore, present study aimed to investigate effects of herd, parity, gestation length, birth litter size and farrowing duration on stillbirth at sow level in swine farms in Vietnam. Data were collected during three trimesters from 54 sow farms. Potential risk factors for stillbirth were identified by using logistic regression. The logistic regression showed that parity 1 (OR=1.81, 95%CI=1.24-2.63) and >4 (OR=1.87, 95%CI=1.33-2.64), a gestation length <114 days (OR=1.80, 95%CI=1.23-2.65), a birth litter size ≥9 (OR=1.96, 95%CI=1.33-2.84) and ≤7 (OR=3.40, 95%CI=2.01-5.76) and a farrowing duration >30 h (OR=1.81, 95%CI=1.24-2.63) were risk factors for stillbirth. This study indicated that stillbirth was common for management and treatments of outbreaks. The present study aimed to detect and identify in goats were 1 and 2 from 26 scab biopsy samples respectively, however they are useful for differentiating SPPV and GTPV; in one PCR run; without any differentiating SPPV and GTPV from AGPT and CIE in CAM or in clinical samples without reducing stillbirth. Since the use of highly prolific sows is increasing, stillbirth continues to be an issue to be dealt with in swine farms in Vietnam.

Key words:

Skin biopsy samples DNA extraction by Microwave methods RT-qPCR c-PCR

Using Feed Additives to Produce Functional Eggs in Fayoumi Hens.
Dief Allah RA, Ali MN, EL-Manylawi MAF, Abass AO and Desouky A.
DOI: https://dx.doi.org/10.36380/scil.2020.wvj12

ABSTRACT
Lately human have become more apprehensive for the health and their food relationship. Egg considered cheap source of animal protein. Eggs are rich in various essential nutrients that contribute to the quality of human diet. But its cholesterol can contributes with some human serious disease. The current study examines the hypothesis that assumed addition of antioxidant such as CAX, SS, B or their mixtures to the diet can produce functional egg from Fayoumi hens at late phase of egg production. A number of 168 Fayoumi hens (46 weeks of age) were randomly assigned into 8 dietary groups as follows: Basal diet alone or with CAX (6 ppm), SS (0.5 g/kg), B (1 g/kg), CAX+SS, CAX+B, SS+B, and CAX+SS+B separately. Forty eight eggs (6 per each group) were analyzed for estimating cholesterol and total antioxidant capacity. Egg of hens fed a combination of CAX+SS+B which had the best total antioxidant capacity value, while the CAX group recorded the best lowest cholesterol value compared to other groups (P < 0.05). It could be concluded that basal diet supplemented with CAX, SS, B alone or with mixture of them may have lowering effect on yolk total cholesterol. This could lead to produce functional eggs which have positive effects on human health and favorable for those suffering from heart syndromes.

Key words: Cholesterol, Fayoumi, Functional Egg, Total Antioxidant Capacity

SDS-PAGE Profile Analysis of SeM-like Protein of Streptococcus equi subsp. equi.
Abdelmageed ShMEl, El-Shafii SElA and El Jakee JKAH.
DOI: https://dx.doi.org/10.36380/scil.2020.wvj13

ABSTRACT
S. equi subsp. equi, causing strangles in equine, is characterized by comprising a major virulence factor called M like protein or SeM protein. This study aimed to extract SeM protein from local S. equi strain in Egypt and to detect its antigenic components. After centrifugation, the native 58 kilo Dalton (kDa) SeM protein was detected both in the supernatant and sediment of the prepared extract. With modification by more centrifugation, the formed supernatants were separated and fractionated using SDS-PAGE with silver nitrate staining, which led to the appearance of a band at Molecular Weight (MW) 70.9 kDa. in SeM1, the presence of 7 bands at MW of 105, 87.8, 70.9, 61.1, 44, 37.9 and 18.4 in SeM2; 5 bands at MW 70.9, 58.9, 37.2, 29.8 and 18.3 kDa in SeM3 and 4 bands at MW of 72.0, 58.6, 29.8 and 18.0 kDa in SeM4. This study suggested that a further modification of SeM extraction revealed the presence of heterogeneous complex fragments of SeM.

Key words: SeM protein, SDS-PAGE, Strangles, Streptococcus equi subsp. equi

Evaluation of The Efficacy of Oxytetracycline on Experimentally Induced Caprine Coccidiosis Due to Eimeria arloingi Infection.
Mikail HG, Saidu SNA and Mamman M.
DOI: https://dx.doi.org/10.36380/scil.2020.wvj14

ABSTRACT
Coccidiosis is a protozoan disease caused by members of the genus Eimeria that affect domestic animal species. The current study was aimed at evaluating the effect of oxytetracycline administration on experimental caprine coccidiosis. Sixteen red Sokoto goat kids divided into four groups (A to D) of four goat kids each, were used for the study. Groups A, B and C were infected by oral inoculation with two ml containing 1.5 \times 10^3 sporulated oocysts of Eimeria arloingi per animal, while group D was the neutral control group. Group A was treated with 10 % oxytetracycline intramuscularly daily for five days. Group B was treated with Sulfadimidine 33.3% subcutaneously daily for five days and group C served as an infected untreated group. Fecal oocysts per gram count was conducted during the experiment. The present result showed a significant decrease (P \leq 0.05) in fecal oocysts load in the treated groups. Neither schizonts nor merozoites were detected in the intestinal smear of kid treated with oxytetracycline but were detected in the intestinal smear of infected untreated goat kid. Cystic degenerative changes were seen in the intestinal glandular cells of the infected untreated goat kid. Conclusively, the current finding suggests that oxytetracycline can effectively be used in treating caprine coccidiosis.

Key words: Coccidiosis, Caprine, Eimeria arloingi, Goat Kids, Oxytetracycline, Treatment
This study was carried out to improve the freezability of buck semen using two different types of cryoprotectants supplemented with melatonin as antioxidant in cold and hot temperature of collection. Semen was extended with Tris-fructose-citric containing egg yolk using glycerol and dimethyl sulfoxide supplemented with two doses of melatonin (10\(^{-6}\) and 10\(^{-3}\)) in addition to 74.4 versus 64.4) and 35.5 versus 32.9) in cold temperature. The same trend was found in samples cryopreserved with DMSO (32.1 versus 22) in hot temperature.

The results also demonstrated that CASA parameters (VAP and VCL) were significantly increased in low compared to high melatonin dose in glycerol based extender during cold and hot temperature of cryopreservation. The activity of total antioxidant capacity (TAC) was significantly higher in control group. Types of motility as well as velocity, enzymatic activity and expression profile of selected genes were measured. The results revealed that the progressive motility percentage increased in low compared to high melatonin dose in glycerol based extender during cold and hot temperature of cryopreservation. NFE2L2 gene was up-regulated in groups cryopreserved with DMSO in hot temperature samples supplemented with low (0.49 M) in glycerol (74.4 versus 64.4) and 35.5 versus 32.9) in cold temperature. The same trend was found in samples cryopreserved with glycerol (75.1 versus 53.5) and DMSO (32.1 versus 22) in hot temperature.

Gene Expression Profile and Enzymatic Activities of Frozen Buck Sperm Supplemented with Melatonin in Cold and Hot Temperature of Cryopreservation.

**Key words:** breeding season. Ejaculates from four mature Egyptian baladi bucks were pooled after selected genes were measured. The results revealed that the progressive motility percentage increased in low compared to high melatonin dose in glycerol based extender during cold and hot temperature of cryopreservation. NFE2L2 gene was up-regulated in groups cryopreserved with DMSO in hot temperature samples supplemented with low (0.49 M) in glycerol (74.4 versus 64.4) and 35.5 versus 32.9) in cold temperature. The same trend was found in samples cryopreserved with glycerol (75.1 versus 53.5) and DMSO (32.1 versus 22) in hot temperature.

**ABSTRACT**

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