Research Paper

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

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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
A study was conducted to evaluate the growth performance, blood metabolites, and gene expression analysis in three different sheep breeds in Egypt. The breeds included Ossimi, Rahmani, and Barki. The growth performance attributes the economic viability of animals, and faster growth is crucial for efficient livestock development.

The study measured linear body measurements and evaluated the plasma total protein levels in the three breeds. There was no significant inverse correlation between the breeds with regards to plasma total protein levels. However, there was a significant effect of interaction between age and breed on plasma total protein levels. The results showed that there was a significant increase in sheep's live body weight during 8-12 months of age. The physical body weights toward advanced ages till the second age category for all breeds reached the highest values.

The study also measured the blood glucose and total lipids levels in all sheep breeds. There wasn't any significant effect of advanced age on the blood glucose and total lipids levels in all sheep breeds. The accurate indicators for growth performance in Egyptian sheep breeds were the change in glycogen concentration during the life cycle of Trichinella spiralis, which remained in the small intestine of rats for 24 hours. The glycogen was not detected on day 45 post-infection, after infection, the amount of glycogen in a muscle stage of larvae was passaged on laboratory rodents under the vivarium conditions.

The role of glycogen in the biological cycle of Trichinella spiralis is extremely important in the first hours of the helminth's residing in the host's body. In the study, the glycogen was measured in white rats using a quantitative method for determining the glycogen in nematodes. The concentration of glycogen in the nematodes was calculated. A total number of animals with high and low glycogen levels were selected for this study.

The study also evaluated the lactose traits in Egyptian buffalo. Novel genomic loci were detected, and the phenotypic dataset included 60,318 monthly deviations from the target traits were selected for genotyping with Axiom Buffalo Genotyping 90K Array. Key markers and candidate genes affecting lactose traits were identified, which facilitate the exploration of the genetic mechanisms that control lactose traits variation in Egyptian buffalo.

In conclusion, the study highlights the importance of evaluating growth performance, blood metabolites, and gene expression analysis in different sheep breeds in Egypt. The results provide valuable insights into the economic viability of animals and contribute to the optimization of livestock development.
Immunomodulatory Effect of CpG ODN-Adjuvanted Bacterin Against Salmonella Enteritidis Infections in Broiler Chickens

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ABSTRACT

The intestinal colonization, cellular responses, mucosal and systemic immune responses of Salmonella Enteritidis bacterin adjuvanted with aluminum hydroxide and a non-immunized group. At two weeks post-immunization, 20 chicks from each group were orally challenged by Salmonella Enteritidis fresh bacterial culture (1.2x10⁸ CFU/ml). The survival rates and the pathological changes of challenged chickens in the different groups were monitored for extra 10 days. Compared to the control groups, the 200-CpG ODN group showed the highest IgA response followed by 100-CpG ODN group then the 50-CpG ODN and the non-immunized group. Also, cellular interactions were remarkably reduced in CpG ODN adjuvanted bacterin induced significant protection and improved survival rate of challenged chickens. Also, in controlling Enteritidis adjuvanted bacterin, the CpG-ODN adjuvant bacterin induced significant immunostimulatory activity against a variety of bacterial, viral, and protozoan infections in a wide range of vertebrate species. The objective of this study was to investigate the distribution of carbohydrate residues contained in immature and mature of Sunda porcupine's testes and to discuss its relevant functions. This study used six testes obtained from four immature and two mature testes to investigate the distribution of carbohydrate residues. The population of Sunda porcupine (Hystrix javanica) declines each year since it is rarely found in nature. The present study aimed to obtain information about the distribution of carbohydrate residues in the testes of immature and mature Sunda porcupine to be used as basic data to be implemented in the conservation program of this species. The population of Sunda porcupine (Hystrix javanica) declines each year since it is rarely found in nature. The present study aimed to obtain information about the distribution of carbohydrate residues contained in immature and mature of Sunda porcupine's testes and to discuss its relevant functions. This study used six testes obtained from four immature and two mature testes to investigate the distribution of carbohydrate residues. The population of Sunda porcupine (Hystrix javanica) declines each year since it is rarely found in nature. The present study aimed to obtain information about the distribution of carbohydrate residues contained in immature and mature of Sunda porcupine's testes and to discuss its relevant functions. This study used six testes obtained from four immature and two mature testes to investigate the distribution of carbohydrate residues.


further isolation and propagation in embryonated-chicken eggs. The novel microwave method has been compared to conventional PCR RNA polymerase gene RP030 and real-time qPCR. The results showed that the microwave method is effective and can be used as an alternative to conventional methods. For instance, the microwave method was used for the extraction of DNA from skin biopsy samples infected with Sheep Pox Virus (SPPV) and Goat Pox Virus (GTPV). The results indicated that the microwave method is suitable for the extraction of DNA from infected skin biopsy samples and can be used for diagnostic purposes.

Skin biopsy samples were collected from clinically affected animals (54 sheep and 26 goats) in different governorates in 2017. The DNA extraction was performed using the microwave method and real-time qPCR. The results showed that the microwave method is sensitive, rapid, and reliable for the detection of Ca PV. The microwave method was also compared to conventional PCR and real-time qPCR. The results indicated that the microwave method is more efficient and can be used as an alternative to conventional methods.

The microwave method was also used to differentiate between SPPV and GTPV. The results showed that the microwave method is suitable for differentiating between SPPV and GTPV; in one PCR run; without any post-processing steps. The microwave method was also used to differentiate between different strains of Ca PV. The results showed that the microwave method is effective and can be used for the differentiation of Ca PV strains.

The microwave method has several advantages over conventional methods. For instance, the microwave method is faster and more efficient. The microwave method can be used for the extraction of DNA from infected skin biopsy samples and can be used for diagnostic purposes. The microwave method is also suitable for the extraction of DNA from skin biopsy samples infected with different strains of Ca PV. The microwave method is therefore a promising method for the extraction of DNA from skin biopsy samples infected with Ca PV.
Using Feed Additives to Produce Functional Eggs in Fayoumi Hens.

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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 contribute 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 subspecies equi.

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ABSTRACT

S. equi subspecies 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 subspecies equi.

Evaluation of The Efficacy of Oxytetracycline on Experimentally Induced Caprine Coccidiosis Due to Eimeria arloingi Infection.

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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 ×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 ≤ 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.
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Determination of the Appropriate Inoculum Dose and Incubation Period of Cassava Leaf Meal and Tofu Dreg Mixture Fermented with Rhizopus oligosporus

The inoculum dose (6, 8 and 10%), and the incubation period of the fermentation (2, 3, 4, and 5 days), with 4 replications.

The appropriate inoculum dose to ferment CLM and TD mixture with R. oligosporus was 10% at each incubation period. In the meanwhile, the appropriate incubation period was 3 days for each inoculum dose.

Arms, I., Memawa, O., Mumin: J. Zool (1): 2020; Determination of the appropriate inoculum dose and incubation period of cassava leaf meal and tofa dreg mixture fermented with Rhizopus oligosporus.

Quantitative real-time PCR analysis for gene expression profile


Melatonin

CASA evaluation

Antioxidant enzymes


Antioxidant enzymes, Bucks, Melatonin, Motility, Transcript abundance