Research Paper

Genome Analysis of Antimicrobial Resistance Genes and Virulence Factors in Multidrug-Resistant Campylobacter fetus Subspecies Isolated from Sheath Wash.

Tshipamba ME, Lubanza N and Mwanza M.

ABSTRACT

*Campylobacter fetus* subspecies are mostly characterized by reproductions problems in cattle and sheep. This study aimed to study the genetic profile and assess the genes mechanism of resistance and their virulence factors using genome sequence analysis. A total of 59 confirmed *Campylobacter fetus* subspecies based on molecular assays and DNA sequencing were subjected to antimicrobial susceptibility test against 14 antibiotic agents representing the five classes of antibiotics using the disc diffusion method. In addition, sequencing the genome of all strains induced complete resistance against all tested antibiotics. The results of the antimicrobial test indicated that 54.4% had a resistance profile, 26.3% were intermediate, while 19.3% were observed to be susceptible. The Whole Genome Sequencing (WGS) result revealed the presence of different genes, such as Broad-specificity multidrug efflux pump and 16S rRNA (guanine 527 \textsuperscript{N} -N 7 \textsuperscript{N} -methyltransferase (gidB), efflux pump conferring antibiotic resistance (MacA and MacB), protein-altering cell wall charge conferring antibiotic resistance (PgsA), which have never been reported in *Campylobacter fetus* subspecies. The WGS also revealed the presence of genes that involved in colonization, adhesion, motility, and invasion, such as type IV secretion system protein (VirD4), S-Layer, cytolethal distending toxin (A, B, and C), *Campylobacter* invasion antigen (CiaB), and fic domain protein (fic) were among important CDS. The presence of these uncommon genes explains the resistance of *Campylobacter fetus* subspecies against different tested antibiotics. The results of this study can be used to implement molecular surveillance of *Campylobacter fetus* subspecies and conduct further studies on the resistance mechanism in these subspecies.

**Keywords:** Broad-specificity multidrug efflux pump, *Campylobacter fetus* subspecies, Genome analysis, Methyltransferase gidB, Multidrug resistance.
Research Paper

Impact of In-Ovo Injection of Folic Acid and Glucose on Hatchability and Post-Hatching Performance of Broiler Chicken.

Abdel-Halim A, Mohamed FR, Elmenawey MA, Gharib HB.


ABSTRACT
The present study was designed to investigate the impact of in-ovo injection of folic acid and glucose on hatching eggs from 55 weeks old broiler breeders. A total number of 900 hatching eggs were collected from Arbor Acres broiler breeders, then, eggs were divided into 6 groups including 1) Negative Control (non-injected, NC), 2) Dry Punch Control (pricked without injecting any solution, DPC), 3) Positive Control (eggs were injected with 0.5 mL normal saline, PC), 4) Folic Acid group (eggs were injected with 0.2 mg/ egg folic acid, FA), 5) Glucose group (eggs were injected with 125 mg/ egg glucose, Glu), and 6) Folic Acid with Glucose group (eggs were injected with 0.2 mg folic acid with 125 mg/ egg glucose, FA+Glu). Each treatment was divided into five replicates of 30 eggs each. Eggs were injected into the albumen under the air sac. After in-ovo injection, the eggs were stored for four days before hatching. After hatching, the chickens were reared in groups according to the treatments. All treatments were divided into 10 replications of 9 chickens in each. In-ovo injection with folic acid decreased the albumen pH significantly to 9.19 after 4 days of injection, while the negative control was 9.43. Hatching quality was severely affected by all in-ovo injection treatments, but no significant differences were found between the treatment groups concerning the hatchability of fertile eggs. Injection treatments had no significant effect on the growth rate or the production number in any of the weeks. Injection of folic acid and (FA+Glu) significantly increased chickens’ body weight at two and four weeks of age. Also, the dressing percentage when using folic acid and (FA+Glu) was significantly increased to 72.1% and 72.5%, respectively, compared to the positive control group (68.3%). In conclusion, our data suggested that in-ovo injection with a mixture of folic acid and glucose (0.2 mg folic acid+ 125 mg/ egg glucose) could be used to enhance carcass characteristics. Further studies should be conducted to find the effects of in-ovo injection folic acid and glucose on different incubation days and at different sites of injection.

Keywords: Broilers, Folic Acid, Glucose, Hatchability, In- Ovo injection, Old breeders, Post-hatch
and samples (i.e., wound swabs, fecal swabs, and urine samples) were collected from dogs and cats. Phenotypic and molecular identification, antibiotic susceptibility testing, and double-disk antibiotic resistance genes were downregulated in both bacteria species and there was a spp. cells which was investigated using SEM. It can be concluded that silver nanoparticles have blaCTX(bla) was assessed as well as their effect on the structural integrity of the bacterial cells using spp. was reported as 0.15 mg/ml and 0.3 mg/ml, respectively. Consequently, the expression of and ESBL-producing E. coli and Klebsiella spp.=6) were confirmed as ESBL producing. Silver nanoparticles indicated a promising antibacterial activity and could be considered an applicable alternative for the antibacterial effect where the minimum inhibitory concentration of AgNPs for ESBL producing E. coli. Despite the presence of modern antibacterial drugs, bacterial infections are still a major problem. Nanoparticles have been extensively used as an applicable and safe alternative to antibiotics.

Moreover, the effect of silver nanoparticles on the expression of antibiotic resistance genes (i.e., E. coli and Klebsiella spp.) was reported as 0.15 mg/ml and 0.3 mg/ml, respectively. Consequently, the expression of and ESBL-producing E. coli and Klebsiella spp.=6) were confirmed as ESBL producing. Silver nanoparticles indicated a promising antibacterial activity and could be considered an applicable alternative for the antibacterial effect where the minimum inhibitory concentration of AgNPs for ESBL producing E. coli. Despite the presence of modern antibacterial drugs, bacterial infections are still a major problem. Nanoparticles have been extensively used as an applicable and safe alternative to antibiotics.
S. gigantea, S. moulei, species were identified molecularly by 18S rRNA gene sequence analysis. Moreover, the 18S rRNA gene presented that all isolates produced bands of expected sizes on gel.

S. medusiformis and hosts for Sarcocystis microscopy. The macroscopic sarcocysts were detected in 9.1% (91/1000) of the esophagi. The Sarcosystis conoid in one of the apices, numerous micronemes, two rhoptries, as well as a long, convoluted bradyzoites were characterized by possessing a double-membrane pellicle and consisted of a S. gigantea ultrastructure of the sarcocysts was investigated by both scanning and transmission electron microscopy. The results of electron microscopy indicated the characteristic features of the macroscopic Sarcocystis species derived from domestic sheep and goats in Soran City, Erbil, Iraq. This study aimed to identify the isolated species. A total of 1000 esophagi were collected from sheep and goats and examined for the species of Sarcocystis isolation and EIA was used for cross-infection may also occur between them and the host specificity of these species was most closely related to Swar species.

ABSTRACT

Keywords: S. gigantea, S. medusiformis, S. moulei.
Canine parvovirus (CPV) infection is a global infectious and contagious viral disease of canine, which is highly contagious and usually fatal. The disease is mainly affecting puppies and young dogs, with a higher prevalence in summer (77.1%) followed by spring (55.5%), autumn (25%), and winter (16.6%). The maximum prevalence was noticed in non-descript dogs (48.5%) followed by German shepherds (26.7%), Doberman (23.07%), and Griffon (16.6%). The overall prevalence of CPV infection in dogs was reported as 59.7%. Dogs between 0 and 3 months of age indicated the highest prevalence of 68% followed by 4-6 months of age and 3 months of age indicated the highest prevalence of 68% followed by 4-6 months of age.
Government Authorities (LGAs) in the Central Zone, reported the disease in the past five years. In order to be able to assess the actual burden of the disease on-site, a retrospective study was conducted to determine the epidemiology of Contagious Bovine Pleuropneumonia (CBPP) in the Central Zone of Tanzania. The present study used data from archived information of Central Zone Veterinary Centre (CZVC) for the past five years in the central zone of Tanzania. In this extensive study must be carried out, since the parameters obtained during the study were refined in the selection of initial plants and aquaponic management could improve plant performance.

In addition, the experimental period lasted 12 weeks of age. The investigated herbs included coriander (Coriandrum sativum), oregano (Ocimum basilicum), dill (Anethum graveolens), samat (Plectranthus amboinicus), peppermint (Mentha spicata), thyme (Thymus vulgaris), Eryngium foetidum, and Eryngium bourgatii. A total of 50 individuals of each herb species and 150 juvenile Nile tilapias were distributed in 5 aquaponic modules. The survival rate, growth, and biomass production were measured for 8 culinary herbs and tilapias. All the herb species survived against the NFT aquaponic conditions. The findings indicated that the herb survival was species-dependent and ranged 42-98%. There was no significant difference in the biomass production of the investigated herbs; however, among them coriander (Coriandrum sativum), oregano (Ocimum basilicum), and samat (Plectranthus amboinicus) were the most productive species. Refinement in the selection of initial plants and aquaponic management could improve plant performance.

The present study aimed to evaluate the effect of L-carnitine and Yeast chromium supplementation on productive performance in Pekin and Sudani duckling breeds fed on diets supplemented with 450 mg LC/kg resulted in better performance traits studies: live body weight, body weight gain, feed intake and feed conversion ratio, relative weight of carcass quality and weight of lymphoid organs. Therefore, both the experimental treatments were as follows: the first treatment was the control with basal diets, treatments 2 and 3 received basal diets supplemented with 300 and 450 mg/kg diet L-carnitine (LC), respectively, while treatments 4 and 5 received basal diets supplemented with 400 and 600 mg/kg diet Yeast chromium (Cr), respectively. The results indicated that growing duckling fed diets supplemented with LC and Cr were significantly improved in live body weight, body weight gain, feed intake, and feed conversion ratio. The relative weight of carcass quality and weight of lymphoid organs significantly increased with supplemented diets. Thus, it can be concluded that the present study recommended the strengthening of control measures against this disease in the country.
Clostridium perfringens vaccines as they are more virulent strains. World Vet. J.

El-Helw HA, Taha MM, EF El-Sergany, EEZ Kotb, Hussein AS and Abdalla YA. isolates (n=26, 19.25%). The PCR was carried out to elucidate the virulence factors. It was to isolation and identification (morphologically and biochemically) for obtaining Identifying the Virulent Factors of Clostridium perfringens Locally Isolated from Different Species.

ABSTRACT indicated that all the 26 enterotoxin (CPE gene), whereas 23% of isolates of chicken and cattle intestinal samples Clostridium perfringens collected from different animal species of different localities in Egypt. Samples were subjected to isolation and identification (morphologically and biochemically) for obtaining Identifying the Virulent Factors of Clostridium perfringens Locally Isolated from Different Species.

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Keywords:

Incidence of Appendicular Bone Fracture in Dogs and Cats: Retrospective Study at veterinary orthopedic surgeons concerning affected limb and bone as well as the extent of tissue damage, site, and shape of the fracture line. Therefore, this retrospective study was designed to provide descriptive data at referral veterinary teaching hospital, faculty of veterinary

RADIOPHGRAPHY EXAMINATION

SURGERY

AFTER SURGERY

Keywords:

Kartika Sari DA and Apritya D. Urinary Bladder Stone Removal Surgery in Sulcata tortoise (Geochelon sulcata) with calculi in the urinary bladder. Radiographic results revealed that there was a radiopaque urinary calculi mass. Plastron osteotomy and cystotomy techniques were used to remove urinary calculi. The appetite of the tortoise returned to normal in a week after the surgery. The lateral plastron osteotomy technique was presented with a history of dehydration, polydipsia, and polyuria. Physical examination revealed a plastron with a stone-filled bladder. This was a safe area to open plastron since it was far from the urinary bladder. Treatment was started with Intravenous fluid, electrolytes, and antibiotics. The urine culture and sensitivity were done for 

Keywords:

Lactobacillus brevis, Lactobacillus plantarum

Silver Nanoparticles Using Lactic Acid Bacteria: Assessment of Antimicrobial Activity.

Research Paper

Escherichia coli

Candida albicans

Pseudomonas

Research Paper

Green Synthesis of Silver Nanoparticles Using Lactic Acid Bacteria: Assessment of Antimicrobial Activity.

Research Paper

The biosynthesis of silver nanoparticles (Ag-NPs) is a new methodology in nanotechnology with antimicrobial agents in the medicine and food industry.

Lactoba
The Effects of Adding Lysine Essential Amino Acid to Commercial Feed on Fatty Acid Contents of Pangasius Fish.

The treatment was done by adding lysine with different doses including P0 (0%), P1 (1.2%), P2 (2.2%), P3 (3.2%). Each treatment was repeated five times. The main parameters studied were the content of saturated and unsaturated fatty acids in pangasius. The observed differences in the content of saturated fatty acids, MUFA and PUFA in pangasius.

Key words: Lysine essential amino acid, Saturated fatty acids, Unsaturated fatty acids.

The Effect of Dietary Supplementation of Cod Liver Oil on Ratio of Saturated and Unsaturated Fatty Acids in the Meat of Giant Prawn.

This research aimed to determine the effect of adding cod liver oil to commercial feed on the ratio of saturated and unsaturated fatty acids to the meat of giant prawn. This research found that the provision of fatty acids, one of which is not in the meat, has an important influence. So, this study aims to determine the effect of adding cod liver oil to commercial feed on the ratio of saturated and unsaturated fatty acids in the meat of giant prawn. On the other hand, the results also showed that the best ratio was found in treatment 4 at a dose of cod liver oil 0% (control), and treatments 1-4 use 3% dose addition to each treatment.

Keypoints: Cod liver oil, Feed, Giant prawn, Saturated fatty acids.

ABSTRACT

Feeding with the right nutritional components can influence. So, this study aims to determine the effect of adding cod liver oil to commercial feed on the ratio of saturated and unsaturated fatty acids in the meat of giant prawn. In fact, the provision of fatty acids, one of which is not in the meat, has an important influence.

Camelus dromedaries with different qualities.

The deleterious effect of heat stress on cumulus-oocytes complexes (COCs) competence is well recognized in different livestock species. Therefore, the present study aimed to investigate the effect of physiologically relevant heat stress on the developmental competence of in vitro matured oocytes of Camelus dromedaries with different qualities.


Effect of heat stress on developmental competence of in vitro matured oocytes of Camelus dromedaries with different qualities.

A total of 1548 COCs were divided into six groups in this study. The deleterious effect of heat stress on cumulus-oocytes complexes (COCs) competence is well recognized in different livestock species. Therefore, the present study aimed to investigate the effect of physiologically relevant heat stress on the developmental competence of in vitro matured oocytes of Camelus dromedaries with different qualities.
ABSTRACT

The contamination of goat milk with pathogenic fungi can cause health hazards for the consumers either they consume it raw or even in the processed form. Since there are few studies concerning yeasts in raw goat milk, the present study aimed to determine the prevalence of yeasts and isolate *Candida albicans* from raw goat milk samples. Also, this study determined the distribution of virulence genes and the antifungal susceptibility profile of *Candida albicans* isolates. A total of 30 goat milk samples (collected from free-grazing goats) were mycologically examined. The confirmed *Candida albicans* isolates were subjected to PCR assay to detect the virulence genes (SAP4, RAS1, ALS1, HWP1, and PLB1). Also, antifungal sensitivity testing was performed against the commercially available antifungal agents and probiotics (*Lactobacillus acidophilus* and *Lactobacillus plantarum*). The mycological examination revealed that 14 out of 30 (46.7%) goat milk samples were positive for yeasts and only 4 (13.3%) isolates were confirmed as *Candida albicans*. The results from the PCR assay showed that RAS1 and ALS1 were found in 4 (100%) isolates, HWP1 and SAP4 were found in 2 (50%) isolates, while PLB1 was not detected in tested *Candida albicans* isolates (0%). Antifungal sensitivity testing results showed that ketoconazole gave the best activity against *Candida albicans* isolates, followed by fluconazole, nystatin, and itraconazole. All isolates were resistant to terbinafine. Moreover, both *Lactobacillus acidophilus* and *Lactobacillus plantarum* showed antifungal effects against *Candida albicans*, but *Lactobacillus plantarum* was more effective than *Lactobacillus acidophilus*. Antifungal resistance is a major problem that can lead to failure of candidiasis treatment. Regular antifungal sensitivity testing and searching for an alternative bio-eco-friendly approach for proper control and treatment of candidiasis are strongly needed to prevent treatment failure and emergence of resistant isolates.

Keywords: Antifungal sensitivity testing, *Candida albicans*, Goat milk, Virulence genes, Probiotics.