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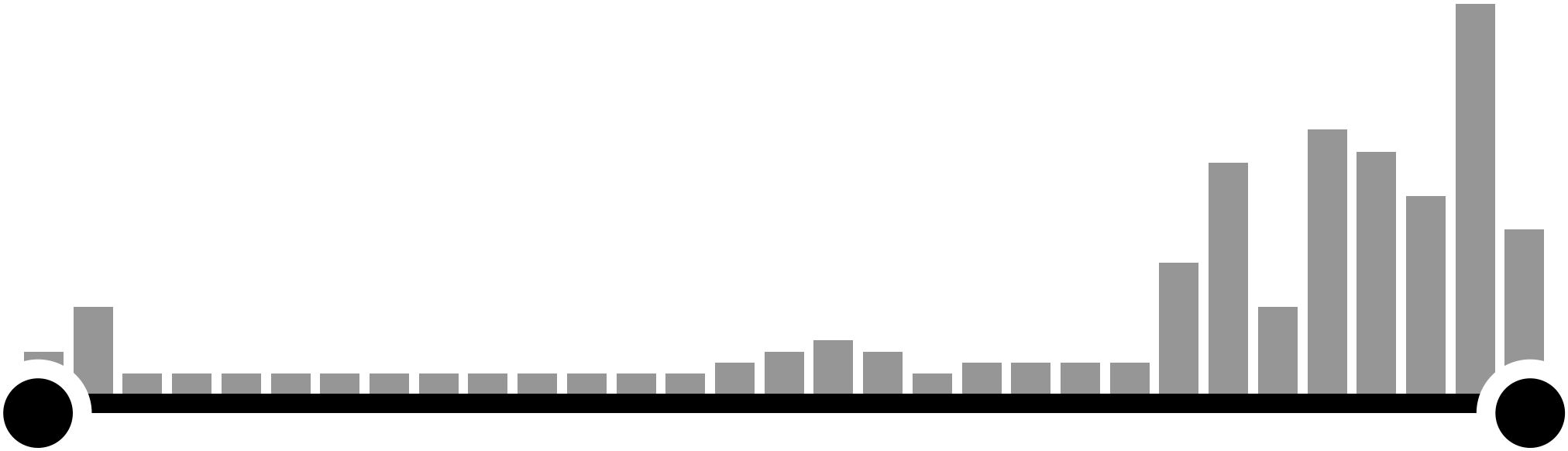

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	Article				
1	**Determination of the Effect of Nano-Lipid Colchicine and Ordinary on Sexual Hormones in Adult Male Rats | تحديد تأثير الكولشيسين الدهني النانوي على الهرمونات الجنسية في ذكور الجرذان البالغة**	Hassan, L.L., Abdullah, B.A., Hadree, D.H.	Egyptian Journal of Veterinary Science(Egypt) , 56(6), pp. 118–125	2025	0

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THIS STUDY AIMS to reduce the harmful effects of the drug colchicine on male hormones using lipid nanotechnology after loading colchicine onto the Nano- lipid (SNL) and confirming the loading by adopting several tests, including Efficiency of entrapment and loading of SNL, Scan and transmission electron microscope, Fourier transform infrared spectroscopy (FTIR), And X-ray diffraction (XRD). The study included 60 adult male rats were used in this study. The animals were split up into six groups, with ten animals in each group. First group, distilled water was administered as the control group, whereas oral colchicine (3 mg/kg body weight) was administered once a day. the second group The SNL was administered orally to the third group once a day at 2ml. whereas the fourth group (30 rats) was divided into three subgroups (10) rats for each subgroup treated with Nano-Lipid colchicine depending on the different concentrations of the drug. The doses were: The first subgroup with (1.5 mg/kg. body weight), the second subgroup with (3 mg/kg. body weight) and the third subgroup with (6 mg/kg. body weight). The duration of treatment was 30 days after completion. the samples were taken blood, and hormone levels were examined. A decrease in LH hormone and FSH hormone and Testosterone hormone levels was observed in the groups that were dosed with colchicine, while in the groups that were dosed with colchicine loaded with Nano lipid there was a significant increase in hormone levels, especially when the increased concentration of Nano -lipid loaded with colchicine. The current study demonstrated that Nano lipids reduce the undesirable effects of colchicine and improve its action.

Article

	Document title	Authors	Source	Year	Citations
2	**Evaluating the Effects of Aqueous Extract from Sage Leaves Powder and Licorice, Individually and in combination, on The Productive Performance of Peking Ducks | تقييم تأثير المستخلص المائي من مسحوق أوراق المريمية وعرق السوس منفردة أو مجتمعة على الأداء الإنتاجي للبط البكيني**	Abdullah, O.I., Al-Yasiry, A.R.M., Mahdi, M.R., Al-Gharawi, J.K.	Egyptian Journal of Veterinary Science(Egypt) , 56(6), pp. 1301–1305	2025	1

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THIS STUDY was conducted in Al-Muthanna University, College of the Agriculture to investigate the impact of aqueous extract of medicinal plants on the Chinese duck, conducted in a private field for duck rearing in Al-Muthanna Governorate, from 5/11/2021 to 11/1/2022,by 180 ducklings weighing about 42 gm, Randomly the experimental animals was distributed in four groups, T1 group: control group without any additives. T2 group: added 5 ml sage leaves water extract per 1 liter of drinking water. T3 group: added 5 ml of licorice water extract per 1 liter of drinking water. T4 group: added 2.5 ml of water extract of the mixture to each of the leaves of sage and licorice per 1 liter of drinking water for each extract. The results indicated that the groups T2, T3 and T4, led to a significant improvement on the productive performance of the white Peking ducks compared to the T1 group. The treatment of water extract mixture of sage leaves and licorice gave the best results, significant.

Article

3	**Normal Histological Developments of The Liver of Newborn Rats For Days (1, 3, 5, 7, and 10) | التطورات النسيجية الطبيعية لكبد الجرذان حديثي الولادة للأيم 1 ، 3 ، 5 ، 7 ، و 1**	Shaker, S.M., Hamead, B.K.	Egyptian Journal of Veterinary Science(Egypt) , 56(6), pp. 1347–1356	2025	0

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THE VER is a vital organ in the body responsible for a variety of functions that support metabolism, immunity, digestion, toxin removal, and vitamin storage, among others. Therefore, the aim of this study was to determine the most important histological changes inliver cells of laboratory-bred white rats after birth for the days (1, 3, 5, 7, 10). Additionally, it aimed to assess the activity of liver cells during the same period using the MTT assay. This study was conducted at the animal facility of the College of Veterinary Medicine, Tikrit University, Iraq. Eight rats were used in the experiment, divided into five females for breeding purposes and three males for mating. Subsequently, tissue sections of selected organs (liver parts) were prepared using hematoxylin and eosin staining. The results of these sections showed clear histological developments and changes in those cells, along with their high activity during the developmental process, consistent with the extent of development occurring during that period.

	Document title	Authors	Source	Year	Citations

Article

4 **Effect of Graviola (Annona muricata) on Some Physiological Parameters and Fertility of Male Albino Rats Exposed to Oxidative Stress**

Ahmed, T.S., Thanoon, R.T., Hadi, K.A.

Egyptian Journal of Veterinary Science(Egypt) , 56(6), pp. 1307–1315

2025

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THE on oxidative some PRESENT physiological stress.studyA totalwas parameters ofdesigned48 Wisterto and demonstratealbino the reproductive rats werethe effectdistributed efficiency of Graviolaamong of male (Annonafour rats groups, exposed muricataeach to) group containing 12 rats, control group, A group was administered H2O2 at a concentration of 0.5% for 2 months), a group was given H2O2 with Graviola 100 mg/kg/day for 2 months) and a group was dosed with Graviola 100 mg/kg/day for 2 months). The results of this study showed a notable decrease in sperm count, the percentage of sperm viability, the antioxidant activity (AOA), the level of sex hormone (testosterone, follicular stimulating hormone and luteinizing hormone), glutathione concentration, Superoxide Dismutase enzyme activity, germinal epithelium height, and seminiferous tubules diameter in H2O2 group. Likewise, there were significant increase in MDA, percentage of sperm abnormalities and dead sperm, in the H2O2 group compared to the control group. Though, when H2O2 is given in combination with Graviola, there was a significant improvement. This combined treatment led to a significant increase in sperm count, sperm viability, sex hormone levels, glutathione concentration, SOD activity, antioxidant activity, height of germinal epithelium, and the seminiferous tubules diameters. At the same time, there is a significant decrease in MDA, the percentage of sperm abnormalities and dead spermatozoa. In conclusion, H2O2 treated with Graviola efficiently restores antioxidant parameters, sperm count, and sperm viability to normal values. This research proposes that Graviola provide good benefits in enhancing the reproductive performance of male rats.

Article

5 **Plasma Metabolomics in Mice After Treatment by Structure Nano-Lipid SNL PGF2α and PMSG during Synchronization and Superovulation Protocol in Mice | استقالب البالزما في الفئران بعد العالج بواسطة النانو الدهني للبروستوكالندين 2الفاوو مصل الفرس الحامل أثناء التزامن وبروتوكول اإلباضة الفائقة في اناث الفئران**

Abdullaha, B.A., Al-Bayati, M.A.

Egyptian Journal of Veterinary Science(Egypt) , 56(6), pp. 1247–1254

2025

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METABOLOMICS is the study of metabolites, small molecule intermediates, and metabolites. We report the metabolomics in the plasma of mice administered SNL PGF2α and PMSG during synchronized and super ovulated protocols. Groups of 3 female Albino mice were each treated first group PGF2α 14.7 µg\kg BW. and PMSG 8.3 IU\kg BW. while second group SNL PGF2α 6.6 µg\kg BW. and PMSG 8.3 IU\kg BW. and, there group. The control group received no treatment. Metabolites in plasma were extracted with methanol-chloroform-water and identified by gas chromatography-mass spectrometry (GC Mass). The remarkable markers of candidates groups of plasma provide 221 total number in conventional were 76, in control 75 metabolomics, while in SNL 72 metabolomics when comparing between the groups in the conventional group higher than other groups.

Article

☐ 6 **The Testicular Toxicity Caused by 2, 3, 7, 8-tetrachloro-dibenzo-p-dioxin in / Rats, as well as the Potential Protective Impact of Resveratrol**

Sultan, A.A., Al-Kaisi, B.I.

Egyptian Journal of Veterinary Science(Egypt) , 56(6), pp. 1225–1237

2025

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DURING the developmental stage, both humans and animals exhibit heightened sensitivity to exposure to harmful substances. Dioxin, being an endocrine disruptor, is recognized for its ability to affect testicular functioning and fertility. The current study sought to investigate the influence of Resveratrol (RES) on the harmful effects of 2, 3, 7, 8-tetrachloro-dibenzo-p-dioxin (TCDD) in the testicular tissue of rats. (Acute and subacute toxicity models were executed, where the experimental design was consisted of 7 groups; G1 (control –ve), G2 vehicle (acetone + corn oil), G3 TCDD (4 µg/kg b. w.), G4 TCDD (2 µg/kg b. w.), G5 50 microgram/kg b w (RES), G6 (TCDD (4 µg/kg b. w.)+ RES),G (TCDD(4 µg/kg b. w.) + RES). The serum hormonal levels of testosterone were analyzed. The results of the current study demonstrate that the intoxication of TCDD leads to testicular injury, specifically affecting serum hormone levels and semen analysis parameters. Furthermore, assessment of the testis's microscopic features, including a histological defects due to. exposure to TCDD and the rise in apoptotic activity were detected. Furthermore, our findings unequivocally illustrate the therapeutic capacity of Res in mitigating testicular damage generated by TCDD.

Article

☐ 7 **Evaluation the Effect and Efficacy of Autologous Lyophilized Advanced Platelet- Rich Fibrin on Full Thickness Wound Healing in Dogs**

Shekho, H.A., Zedan, I.A., Al-Taee, S.K., Annaz, M.T.

Egyptian Journal of Veterinary Science(Egypt) , 56(6), pp. 1213–1223

2025

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PLATELET RICH FIBRIN (PRF) is a biological and innovative therapeutic which has important role in regenerative injured tissue. The aims of this study were to prepare lyophilized-PRF and determine its applications during wound healing, depending on histopathological and immunohistochemistry parameters. Six healthy, adult local breed dogs were used, the animals were randomly divided into 2 experimental main groups (treated and control) 6 animals for each group, ten ml of whole blood was aspirated from the same animal for platelet rich fibrin preparation and centrifugation of this fresh blood at 3000 rpm for 10 minutes was performed, the resulted PRF layer was removed to prepare lyophilized PRF by freezing and was stored at –80C∘ then the sample was freeze-dried for 12 hours by using Labconco lyophilizer at –51C∘ Surgical full thickness incision wound of 5cm length was performed under general anesthesia on back of dogs under aseptic technique, treated group Lyophilized A-PRF (Right side) was applied subcutaneously while normal saline 0.9% was applied instead of Lyophilized A-PRF in the control group (Left side). The wound was closed using surgical silk suture. The histological criteria for wound healing, inflammatory cell infiltration, re-epithelialization, and granulation tissue formation were evaluated according to the scoring system (0-4), Furthermore, the results of quantitative analysis of immunohistochemistry of PDGF expression showed that the group treated with Lyph-PRF was moderate, intense and mild cytoplasmic staining reactivity on the first, third and seventh days respectively after PO compared to the control.

Article • *Open access*

☐ 8	**Study The Effects of Lead and Cadmium on The Kidney and Liver of Albino Rats**	Alloul, S.H., Al-Juhaish, O.A., Al-Shammari, S.M.H.	Egyptian Journal of Veterinary Science(Egypt) , 56(4), pp. 791–796	2025	1

Document title	Authors	Source	Year	Citations

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AHIGHLY harmful heavy metal known as lead (PB) affects different organs' physiology and histology. Cadmium is a toxic element affecting some organs such as renal, and bones. This study aims to observe the microscopic tissue lesions of lead and cadmium in the liver and kidney. In this study, fifteen albino rats were divided into three groups. The first group is provided with oral normal saline, the second group is given a lead solution orally for three weeks at a dose of 17 mg/kg, and the third group is given a cadmium solution orally for three weeks at a dose of 15 mg/kg. The tissue sections are put directly in 10% neutral formalin solution to fix them for 24-48 hours and then cut into small pieces 1 cm3 then carried out the process of ascending alcohols and then in xylene, waxed in the form of molds and cut the pieces with a microtome on the thickness of (4-5) µm and then dyed with the routine stain hematoxylin and eosin. The findings included that the first group shows the normal architecture of the liver and kidney. The second group showed necrosis in the peripheral area due to the toxic effect of lead with fatty changes resulting from liver damage; the kidney showed proliferation of inflammatory cells (neutrophils), and mesengial cells in addition to the presence of coagulative nephritis. The third group showed liver fibrosis and inflammatory cells while the kidney showed mononuclear cells in chronic nephritis. We can conclude that lead and cadmium have negative and pathological changes in the kidney and liver tissue; these changes include accumulation of the inflammatory cells, congestion, and necrosis, in the liver, and kidney while showing nephritis in the kidney.

Article • *Open access*

☐ 9	**Induction of Irreversible Liver Fibrosis by Laparoscopic Closure of Common Bile Duct in Dogs**	Shekho, H.A., Ali, A.K., Alchalabi, A.S.	Egyptian Journal of Veterinary Science(Egypt) , 56(4), pp. 825–833	2025	0

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THIS study was aimed to assess the laparoscopic ligation of common bile duct using a titanium clip in eighteen healthy adult domestic dogs from both sexes, the age ranged from (24±6) months and weight ranged from (20±5) kg. After ligation of common bile duct, the animals were left for 21 days. All animals were subjected to evaluated progression of hepatic fibrosis by clinical, ultrasonography, radiography and laboratory examination. Clinical results such as severe abdominal pain, anorexia, emaciation, jaundice and paleness mucus membrane were observed. Ultrasonographical examination of the liver revealed dilatation of the gallbladder and common bile duct as well as an increased in thickness and echogenicity of liver texture, while the biochemical parameters at the 21 days of closure the common bile duct revealed significant elevation in liver serum enzymes and total, direct and indirect bilirubin at p≤0.05. In conclusion, the laparoscopic technique of inducing incurable liver fibrosis in dogs by surgical closure of the common bile duct with titanium clips is an unconventional, effective, less complication and straightforward technique to induce fibrosis.

Article • *Open access*

	Document title	Authors	Source	Year	Citations
10	**Protection of Resveratrol Against Nephrotoxicity in Rats Produced by 2, 3, 7, 8-Tetrachlorodibenzo-p-dioxin | مناية الريسفيراترول ضد السمية الكلوية في الجرذان المنتجة بواسطة 2 ، 3 ، 7 ، 8 رباعي كلورو ثنائي بنزو ب ديوكسين**	Sultan, A.A., Kaisi, B.I.Al.	Egyptian Journal of Veterinary Science(Egypt) , 56(3), pp. 605–616	2025	1

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WE CONDUCTED A STUDY to examine the impact of Resveratrol (RES) on the renal tissues of Wistar rats that were exposed to 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) and developed kidney damage. Applied on albino male rats (102), the age range (8-9) weeks and the weight range (80 -90) gms, (32) rats were used for acute stage of toxicity, while others (70) rats were involved as a chronic toxicity; the experiment design consists of 7 groups; G1 (control – ve), G2 vehicle (acetone + corn oil), G3 TCDD (4 µg/kg b. w.), G4 TCDD (2 µg/kg b. w.), G5 (RES), G6 (TCDD (4 µg/kg b. w.)+ RES),G (TCDD(4 µg/kg b. w.) + RES). We found that malondialdehyde (MDA), urea and creatinine levels in the groups treated with TCDD showed significant increases compared to the other groups, despite a decrease in the levels of reduced glutathione (GSH) and catalase (CAT) in the TCDD groups. Comparing to the other groups, we observed a rise in GSH and CAT levels, as well as a decrease in MDA, urea, and creatinine levels in the RES treated group. The administration of RES improved the oxidative stress markers and histological alterations caused by TCDD.

Article • *Open access*

11	**A Comparative Histological and Histochemical Study of the Neck, Abdomen, and Tail Regions of Skin in Gazella Subgutturosa**	Kadhim, K.H., Khaleel, I.M., Hussen, F.A.	Advances in Animal and Veterinary Sciences , 13(1), pp. 166–175	2025	0

Document title	Authors	Source	Year	Citations

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The study was conducted to compare between histological and histochemical characteristics of different skin regions (neck, abdomen and tail) responsible for the protection, sensory, thermoregulation and excretion in Gazella subgutturosa. Twenty skin samples from 10 males and 10 females of Gazella subgutturosa were collected from the ventral, lateral and dorsal parts of the neck, abdomen and tail regions. The results of thickness of epidermis in male appeared greater than in female, while the neck skin showed the maximum thickness in epidermis. The epidermis was a thin portion and composed of four layers: stratum basal, stratum spinosum, stratum granulosum and stratum corneum. The stratum basal was consisted of columnar cells and melanocytes. Whereas, the stratum spinosum was consisted of polyhedral cells. As well as, the stratum granulosum was appeared containing several layers of cells with lipid granules. While the stratum corneum was covered by keratinized stratified squamous epithelium in all regions of skin (neck and tail) except in abdomen was non-keratinized. The dermis of the abdomen skin of males was thicker than in females, while the dermal thickness of females in both neck and tail skin was higher than in males. The results of hypodermis showed high loose connective tissues and adipose tissues. Whereas, the tail region was contained a large amount of skeletal muscle fibers. Furthermore, sweat and sebaceous glands had a positive reaction to Periodic Acid-Schiff staining, while with alcian blue stain appeared sebaceous glands only. From this study concluded the layers thickness of Gazella subgutturosa skin were differed according to the body regions and gender. As well as, the skin acted as a protective barrier by utilizing its diverse cellular coalition.

☐	12	Article **Association between selected metabolic parameters and chronic digital dermatitis in Holstein dairy cows**	Allowaim, A., Marzok, M., Abed, G., ... El-Khodery, S., Farag, A.	Journal of Advanced Veterinary Research , 15(1), pp. 129–132	2025	0

Document title	Authors	Source	Year	Citations

Hide abstract Related documents

The objective of the present study was to investigate the association between chronic digital dermatitis (DD) and the selected metabolic and hematological parameters in Holstein dairy cows. For this purpose, thirty-eight parturient dairy cows investigated. Of all, 19 cows were suffering from chronic digital dermatitis, and 19 cows were clinically healthy. Cows were examined clinically and those with chronic DD were selected. Subjective evaluation of cows with DD was performed by one person and the score was recorded. Blood samples were obtained from diseased and control cows for measurement of metabolic profile. β-HB showed a significant increase in cows with DD in comparison to control health cows ($p< 0.01$). But glucose showed a significant decrease ($p < 0.05$). Regarding the macro-and micro elements, there was a significant decrease of calcium ($p < 0.0$) and phosphorus ($p < 0.01$) level in cows with DD in comparison with healthy control cows. while serum Mg showed non-significant changes between groups. Serum mineral values of Zn, and Cu were statistically significantly decreased ($p <0.01$) in cows with chronic DD in comparison with the control cows. Total leukocytic counts, neutrophils and neutrophils lymphocyte ration were significantly increased in diseased cases compared with control ($p < 0.01$). But lymphocytes were significantly decreased ($p < 0.001$). In conclusion, the results of the present study indicate that DD may affect greatly the metabolic status of the diseased cows with consequent occurrence of other metabolic diseases. The biochemical and hematological changes may highly be related to inflammatory stress.

Article • *Open access*

☐ 13	**Histological Study of Antibiotic Effect on Liver, Kidney and Breast Muscle in Poultry**	Hameed, B.K., Hameed, M.A., Hussein, H.M., Wadee, S.A.	Egyptian Journal of Veterinary Science(Egypt) , 56(1), pp. 39–46	2025	0

Document title	Authors	Source	Year	Citations

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VETERINARIANS growth frequency rates of illnesses of their and in birds, the poultry. poultry as well The industry Antibiotic as to increase utilize was utilized antibiotics egg output, in the to chicken feed improve efficiency, industry. the health and for both and the preventative and therapeutic purpose. However, the illicit use of these medications has resulted in the build-up of harmful poultry products containing antibiotics residue that are intended to conception of human. Furthermore, there is serious risk occurring in the community from this may be, microbiological, immunological, or toxicological. The present study was conducted to demonstrate the effect antibiotics on the histological structure of different poultry tissues (Liver, Kidney and Breast muscle). In this study 300 chicken were used and divided into two groups. Group(A): chicken are aged 38 day and subdivide into three subgroups, first group fed with ciprofloxacin in age 20 day for 4 days and second group fed with colistin in age 30 day for 4 days and last group in age 5 days used neomycin for 2 day. Group (B): chicken are aged 42 day and subdivided into two subgroups, first used colistin and tylosin antibiotics in age 13 day for 3 days and second group used erythromycin in age 20 day for 4 days.the dose of antibiotic ranged from 5-15 mg \kg of body weight. After the chickens were killed, a tissue sample was taken. Outcome includes effects on the kidney, glomerular atrophy and reduction of convoluted tubule epithelial cells. Hemolysis in blood vessels, while in liver caused cell degradation. Furthermore, results showed an impact on the breast muscle that led to nerve fiber degeneration and muscle fiber atrophy. The aim of the study was to investigate the histopathological effects of antibiotic residues on various bird tissues and potential health risks for humans.

☐	14	Article **Hepatotoxicity Induced by the therapeutic dose of Chlorpromazine and Ameliorative for Saussurea Costus Roots Extract and Effect of Physiological and Histological Liver of Albino Rats**	AL-Alh, N.M.A., Khalaf, N.H., Khudhair, N., Khalid, A.	Advances in Animal and Veterinary Sciences , 12(12), pp. 2540–2548	2024	0

Document title	Authors	Source	Year	Citations

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Chlorpromazine (CPZ) remains a widely used drug in psychiatric practice today. The aim of this study is to investigate the protective role of ethanolic costus root extracr in CPZ-induced functional and histological changes in rats' liver. The study was carried out on 30 male albino rats, 12-14 weeks old. The Rats were divided into 5 groups, G1 control negative received distilled water 2 ml. CPZ was administered orally at dose 2 mg/kg of body weight. The rats dosed CPZ were divided as follows: G2 a positive control group, received CPZ alone. G3 was given an ethanolic extract of costus at a dose of 1.5 mg/kg, and G4 was administered an ethanolic extract of costus at a dose of 3 mg/kg. G5 was administered an ethanolic extract of costus plant at a dose of 5 mg/kg. Groups G3, G4, and G5 served as a prophylaxis group dosed 1 hour after CPZ administration. Oral doses are given once daily for 4 weeks. The results of G2 showed increased body weights in rats and liver weights (286.25013.750 Body Weight) (10.5250.217 Liver Weight). In contrast a decrease in body and liver Weight is observed among control and Prophylaxis groups (G3, G4 and G5) while no significant difference ($p>0.05$) in liver and body weights were observed between the groups under study. There was a significant ($p<0.001$) increase in G2 group ALT, AST and ALP compared a significant decreasing ($p<0.001$) in prophylactic groups in particular a concentration 5mg/kg or G5 group. Histopathological changes of the liver of G2 including acute cell swelling and necrosis in hepatocyte, inflammatory cells infiltration, blood vessels congestion with perivascular inflammatory cells infiltration, bile ducts epithelial hyperplasia. we noticed that administration of ethanolic extract of Saussurea costus root and in resulted in amelioration of the morphological changes in Chlorpromazine treated rats, improved parameters and restored the parameters to near normal compared with group G1. The G5 group that was dosed with the alcoholic extract of the Indian Costus root and in conjunction with the drug Chlorpromazine at a concentration of 5 mg / kg showed higher improvement in the parenchyma of liver tissue's compared to the other groups.The concluded Data revealed that root of costus extract acted as a hepatic protective agent against the side effects ortoxicity induced by Chlorpromazine.

Article • *Open access*

☐ 15	**The Relationship of CXCL12 with Sperm Agglutination and Anti-Sperm Antibody Among Infertile Men**	Oleiwi, F.D., Mohammed, M.J., Ali, C.I.	Advancements in Life Sciences , 11(4), pp. 785–790	2024	0

Document title	Authors	Source	Year	Citations

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Background: It is known that structural elements like the ‘blood-testis barrier’ (BTB) and local & systemic tolerance mechanisms help to maintain testicular homeostasis, which shields germ cells and mature sperms from immune attack. Any damage to this barrier could result in immune attack and may cause infertility. Methods: The most important goal of this study was to find the vital connection between male infertility and immunological factors (CXCL12 and anti-sperm antibody). During the months of October 2021 and July 2022, a total of 144 samples were taken from patients who sought to have infertility tested. Semen and blood samples were taken from the subjects to assess seminal plasma CXCL12 levels and the prevalence of anti-sperm antibody (ASA) in their serum. Alternatively, research on sperm function parameters, sperm agglutination risk, and its relationship to ASA and CXCL12. Result: statistically there was no ‘significant’ difference in CXCL12 levels across study groups in this investigation. The prevalence of sperm agglutination was 23.61% across all patients under study, the majority of whom had asthenozoospermia. In contrast, 60% of the samples from ASA-positive patients were agglutinated. The results revealed a relatively weak positive link that may call for additional research even if there was no significant statistical correlation in the relationship between CXCL12 and sperm functions and ASA. Conclusion: The findings of this study suggest that ASA affects seminal fluid parameters, which in turn affects male fertility, and that a weak, non-significant association between CXCL12 and sperm function could impair sperm function by reducing sperm motility. Sperm agglutination could be a sign of immunological infertility. ASA can impact male fertility in a number of ways. Others had to do with sperm agglutination.

Article • *Open access*

	Document title	Authors	Source	Year	Citations
☐ 16	**Comprehensive Analysis of Chemical and Microbial Safety in Grilled Meat and Poultry from Baiji City Markets: A Focus on Red and White Varieties**	Musa, F.H., Altaee, Z.A., Albashr, T.Kh.M., Attallah, N.A., Saleh, E.N.	Egyptian Journal of Veterinary Science(Egypt) , 55(7), pp. 1955–1960	2024	0

Document title	Authors	Source	Year	Citations

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THIS study investigated the chemical composition and pollution levels, including heavy metals such as copper, cadmium, lead, zinc, and cobalt, and microbial contamination, in four types of grilled meat sold in the markets of Beiji City. The samples were collected from three different regions in the city between March 15, 2022, and mid-April. Results showed good levels of moisture, protein, and fat in the studied meat samples by A.O.A.C. with the highest moisture content recorded in chicken kebab samples (72.81%) and the lowest moisture content recorded in chicken shawarma (69.32%). Protein levels ranged from 16.87% to 19.23%, with the highest level in beef kebab and the lowest level in chicken shawarma. Results of the study showed an increase in zinc levels in all samples, with the highest level recorded in beef kebab (7.738 ppm). Zinc levels in chicken kebab, beef shawarma, and chicken shawarma were 6.911 ppm, 6.780 ppm, and 6.036 ppm, respectively. Lead levels were high in all studied meat samples, ranging from 0.1334 ppm to 0.1444 ppm. The highest cobalt level was recorded in chicken shawarma at 0.067 ppm. Copper levels varied with the type of meat, with the highest level recorded in beef kebab at 5.251 ppm and the lowest level recorded in beef shawarma at 3.038 ppm. Cadmium levels were highest in chicken kebab at 1.600 ppm and lowest in chicken shawarma at 1.018 ppm. Beef shawarma and chicken kebab had total bacterial counts of 64.12 x 103 CFU/g and 48.26 x 103 CFU/g, respectively. Microbial pollution showed the highest total bacterial count in beef kebab at 86.13 x 103 colony-forming units (CFU)/g and the lowest in chicken shawarma at 33.14 x 103 CFU/g. We conclude from the results of our current study the high level of moisture in the tissues of chicken kebabs, and that the highest level of protein was in the tissues of chicken kebabs, as well as the highest percentage of fat in meat shawarma.

Article • *Open access*

☐	17	**Ultrasonographic Evaluation of Liver Tissue after Surgically Induced Bile Duct Ligation in Dogs**	Shekho, H.A., Ali, A.K., Al-Iraqi, O.M.	Egyptian Journal of Veterinary Science(Egypt) , 55(6), pp. 1561–1568	2024	0

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THE bile weighingcurrent duct (20±5) using study surgical usedkgs andultrasound stainless-steel aged (24±6)to assessmonths. wire the in inducedAll 18 healthy animalshepatic local werefibrosis adult subjectedby dogs ligationto of evaluated both of common sexes, the progression of hepatic fibrosis by clinical and ultrasound examinations using a transabdominal convex transducer at frequency (5 MHz) to diagnose developing of surgically induced hepatic fibrosis at 0, 7, 14 and 21 days, respectively, after ligation of the common bile duct. Clinical results such as severe abdominal pain, anorexia, emaciation, jaundice and pale of mucus membrane were observed. Ultrasonographical examination of liver revealed dilatation of the gallbladder, common bile duct and portal vein as well as increased in thickness and echogenicity of liver tissue starting from the 7th day post-ligation till reaching the maximum in the 21 days. There was a significant difference in echogenicity of liver parenchyma between groups during the 0,7,14 and 21 days of the experiment in all dogs $p<0.01$. In conclusion, the use of ultrasound imaging to diagnose, evaluate and follow-up the diffused liver disease models is feasible and beneficial value to monitor the development of levels and stages of hepatic fibrosis and cirrhosis of individual dogs.

Article • *Open access*

	Document title	Authors	Source	Year	Citations
18	**Diagnosis of Infectious Bronchitis Infection in Broiler Chicken Farms in Salah Al-Din Governorate | تشخيص الإصابة بالتهاب الشعب الهوائية المعدية في مزارع الدجاج الالحم في محافظة صالح الدينعبدالجبار محمد حسين الجبوري وقصي صالح جمعه**	Aljubori, A.M.H., Jumma, Q.S.	Egyptian Journal of Veterinary Science(Egypt) , 55(6), pp. 1619–1626	2024	5

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T HE study aimed to diagnose the infection of infectious bronchitis in broiler chicken farms in Salah Al-Din governorate. Using the Infectious Bronchitis Virus (IBV) Rapid antigenic test and Polymerase Chain Reaction, The study included eight neighbouring regions for the city of Tikrit: (Al-Dabbssa, Al-Naaeimah, Al-Khazifei, Al-Alam, Sammrah, Al-Khzammeah Al-kharja and Al-Hammrah) during the period from October 2022 to February 2023. The results of our study showed diagnosis cases of infection with the disease in all regions and the infection rate was higher in regions Al- Naaeimah, Al-Khazifei and Al-Khzammeah. In addition, the infection rate was higher in October compared to other months. The results also showed the Infectious Bronchitis Virus (IBV) Rapid antigenic test gave real diagnostic results for infection with the disease. The study concluded that infection with the disease is present in all regions included in the study, and the infection rate was higher in three regions compared to the other regions. It was also shown that the weather has a role in the spread of infection during a certain time. In addition, the results showed that the IBV Rapid antigenic test can be relied upon in diagnosing cases of infection. disease because it gives real diagnostic results.

Article • *Open access*

19	**Effect of laparoscopic adrenalectomy on estrogen, progesterone and cortisol hormones in bitch**	Khudhur, E., Al-Ajeli, R.R., Al-Qadhi, A.S., Al-Anaaz, M.T., Shekho, H.A.	Iraqi Journal of Veterinary Sciences , 38(4), pp. 933–939	2024	0

	Document title	Authors	Source	Year	Citations

Hide abstract View at Publisher Related documents

The effect of laparoscopic left adrenalectomy on adult bitches ' estrogen, progesterone, and cortisol levels was studied. Fifteen adult stray bitches were used. The average weight was 20 kg, age was 27 months. The study animals were randomly divided equally into three groups, each group containing five bitches. The first group underwent unilateral laparoscopic left adrenalectomy (ULLA), the second group underwent left adrenalectomy with bilateral ovariectomy, and the third group was left as a control group. Blood samples were taken from all animals on days 0, 7, 14, and 30 after surgery to estimate estrogen, progesterone, and cortisol levels. The result of using sternal decubitus laparoscopic left adrenalectomy was a practical, feasible, and rapid technique with a short average surgical time of 72 minutes and easy dissection; therefore, it is considered a standardized technique. The results also showed that the estrogen concentration on the 30th day of the three groups was 141.2, 56.8, and 137.8, respectively, with a significant difference in the second group compared to the rest groups and the progesterone concentration on the 30thday of the three groups was 3.8, 3.6 and 4.5 respectively with a significant difference among the groups, and in another context the cortisol concentration on the 30thday of the groups was 128.4, 82 and 129, respectively, with a significant difference in the second group compared to the rest groups. In conclusion, the possibility of laparoscopic adrenalectomy with sternal recumbency in dogs is a standardized method, and unilateral adrenalectomy does not affect the levels of estrogen, progesterone, and cortisol due to the compensation mechanism.

		Document title	Authors	Source	Year	Citations
☐	20	Article **Molecular investigation and potential risks associated with Streptococcus equi infection in horses with upper respiratory tract infection**	Alessa, M., Kahtan, M., Hussein, H.M., ... El-Ashker, M., El-Khodery, S.	Journal of Advanced Veterinary Research , 14(7), pp. 1220–1226	2024	0

Document title	Authors	Source	Year	Citations

Hide abstract Related documents

The aim of the present study was to conduct molecular investigation and potential risks associated with Streptococcus equi infection in horses with upper respiratory tract infection. For this aim, sixty-nine horses were used (50 diseased and 19 apparently healthy). Horses under investigation were subjected to clinical examination and bacteriological investigation of nasal swabs. Polymerase chain reaction (PCR) for confirmatory identification of Streptococcus equi subspecies equi came to match the isolation percentage on its selective medium. For Streptococcus equi subspecies equi, sodA and seeI genes were detected at molecular weights of 235 bp and 520 bp, respectively. There was a significant (P value <0.05) association between breed, use, vaccination, number of affected animals in the premises, over-crowding and climatic conditions and the isolation frequency of Streptococcus equi subspecies Equi infection. The highest percentage of isolation was recorded in Arabian horses (32/53; 60.4%) compared with other breeds (21/53; 39.6%). Horses kept for racing or showing revealed higher isolation percentage (32/53; 60.4%) compared with draft horses that showed isolation percentage of (21/53; 39.6%). Vaccinated horses also showed a higher rate of isolation (29/53; 54.7%), compared with non-vaccinated ones (24/53;45.3%). The results of the present study highlighted the potential risk factors associated with S. equi subspecies equi in horses with upper respiratory tract infection. The present finding may support the authorities to construct strict preventive measures for this infection.

Article

☐ 21 **EFFECTS OF DIFFERENT VACCINATION METHODS AGAINST NEWCASTLE DISEASE ON IMMUNE RESPONSE AND SOME BLOOD PARAMETERS IN LOCAL CHICKEN (GALLUS GALLUS DOMESTICUS) IN SHIRQAT CITY**

Aljoburi, A.M.H., Jumma, Q.S., Al-Shammari, S.M.H.

Assiut Veterinary Medical Journal (Egypt) , 70(183), pp. 519–530

2024

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The current study aimed to investigate the effects of different vaccination programs against Newcastle disease (ND) on both immune response and some blood parameters in local chickens in Shirqat city. Ninety local chicks were divided into three groups, 30 chicks each. The first group (G1) left unvaccinated, while the second and third groups (G2, G3) were vaccinated with ND strains using different methods of administration. A significant decrease was recorded in both the number of red blood cells (RBCs), white blood cells (WBCs) and packed cell volume (PCV) in G3 at 14 days of age. Additionally, a significant decrease in antibody levels in the G2 at 24 days of age. A significant decrease was also noted in both the number of RBCs in the G2 and the hemoglobin in both G2 and G3. A significant decrease in both PCV and mean corpuscular hemoglobin concentration (MCHC) was recorded in the G3. Furthermore, a significant decrease in antibody levels was observed in both the ELISA and hemagglutination inhibition (HI) tests in G3, along with a significant difference in the number of RBCs in G2 and G3. There was also a significant difference in hemoglobin and PCV levels in G3 at 34 days, and a significant decrease in PCV value was noted in G3 at 42 days. In conclusion, the different vaccination programs against Newcastle disease led to a significant decrease in antibody levels in the second and third groups at 24, 34, and 42 days of age. The study also revealed that some blood parameters in the vaccinated groups showed a significant decrease at the level of $P \leq 0.05$.

	Document title	Authors	Source	Year	Citations
	Article				
22	**INVESTIGATION OF THE HISTOLOGICAL, HISTOCHEMICAL, AND BIOCHEMICAL CHARACTERISTICS OF THE KIDNEY AND ADRENAL GLAND IN RABBITS (ORYCTOLAGUS CUNICULUS) AT VARIOUS STAGES OF DEVELOPMENT**	Al-Juhaishi, O.A., Hameed, B.K., Hussein, F.A.	Assiut Veterinary Medical Journal (Egypt) , 70(183), pp. 507–518	2024	1

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This study aimed to investigate the development of the kidneys and adrenal glands in rabbits using histological, histochemical, and biochemical techniques. The experiment was conducted on 28 kidney and adrenal gland samples at different ages (one day, seven days, fourteen days, and ninety days). Histological findings revealed that the kidney was covered by a small amount of collagen and reticular fibers and had a thin capsule that thickened with age. The renal corpuscle increased in diameter as the age progressed. The proximal convoluted tubules were the longest, surrounded by cuboidal epithelial tissue, and had a brush border. The adrenal glands were encased in a well-developed capsule, and the cortex was divided into the glomerular, fasciculate, and reticular zones. The medulla was composed of large, pale-staining hexagonal cells arranged in small anastomosing strands held together by reticular fibers and separated by sinusoids. Norepinephrine cells were smaller. Histochemical studies showed that the brush border in the kidney responded positively to PAS, AB, and PAS-AB stains. PAS staining revealed that the basement membranes of the glomerulus and renal tubules were fully developed. Biochemical tests showed significant age-related differences in uric acid levels and each enzyme. As the urea burden increased, more urine was needed because the kidneys' ability to filter urea was limited. The kidneys underwent postnatal developmental changes, reaching maturity three months after birth when the normal adult nephron structure was observed. This indicated that the structure of the kidney and adrenal glands developed after birth with age progression.

	Article • *Open access*				
23	**IMPACT OF SULPIRIDE AND PMSG HORMONE TREATMENT ON ESTRUS AND NUMBER OF RESULTED OFFSPRINGS IN FEMALE RATS**	Abd, A.A.	Assiut Veterinary Medical Journal (Egypt) , 70(183), pp. 84–89	2024	0

Document title	Authors	Source	Year	Citations

Hide abstract ^ View at Publisher ↗ Related documents

This study aimed to evaluate the impact of sulpiride and PMSG hormone treatments on estrus and the number of offspring produced in female rats. Thirty mature rats were divided into three groups, each consisting of 10 females. The first group was treated intraperitoneally with sulpiride (0.25 mg/kg), the second group with PMSG hormone (20 IU/kg), and the third group with normal saline. Treatments were administered after the onset of estrus. Following treatment, natural mating occurred. The results of the study showed no significant differences between the PMSG hormone, sulpiride, and normal saline treatment groups regarding the number of females that showed estrus and mated. However, a significant difference ($P < 0.05$) was observed between the PMSG treatment group and the other groups with respect to the average number of embryos, which were 128, 75, and 55, respectively. The Luteinizing Hormone (LH) concentration was significantly higher ($P < 0.05$) in the sulpiride-treated group (1.44 ±0.12 ng/ml) compared to the PMSG hormone (1.23 ± 0.14 ng/ml) and normal saline treatment groups (0.76 ± 0.08 ng/ml). In conclusion, the application of PMSG was more effective in inducing ovulation and increasing the average number of offspring compared to sulpiride treatment in female rats.

Article

☐ 24 **The Role of Fabricated Coral Shell Powder in the Healing of Mandibular Bone Gap in Dogs** — Atiyah, A.G., Alkattan, L.M. — Iranian Journal of Veterinary Medicine, 18(4), pp. 489–500 — 2024 — 0

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Background: The reconstruction of mandibular bone defects poses a real challenge and difficulty for surgeons; biomaterial bone substitutes are the most used material for reconstructing mandibular bone defects. Objectives: This study explored the role of fabricated hydroxyapatite (HAp) powder from the coral shell in healing critical size mandible gaps in dogs. Methods: HAp was prepared using the hydrothermal method from coral shells. Characterization of the fabricated coral shell was done by x-ray diffraction (XRD), field emission scanning electron microscopy (FESEM), and energy dispersive x-ray spectroscopy (EDX). The designed research was performed on 18 dogs of both sexes (mean weight: 20±0.5 kg, mean age: 2±0.6 years). The samples were divided into two equal groups. Animals underwent experimental defects at the ventral surface of the lower mandible about 14.5 mm. Results: The results of XRD represented high crystallinity, the EDX results indicated the surface morphology of distributed particles of calcium, phosphorous, carbon, and oxygen, respectively, and the FESEM results suggested that the surface morphology of HAp appears as a spherical particle that regularly distributed within the sample. In the HAp group, at 30 days, the FESEM images show that the defective gap completely closed, and the center of the defect was filled with a thick layer of osteoid matrix. Radiographically, the HAp group at 30 days post-surgery indicated a well-defined circular radiolucent bone gap at the caudal portion of the mandible, with a partially sclerosed margin. Macroscopically, at 30 days, the gap appears very small and is invaded by new bone formation. Conclusion: In conclusion, recycling HAp from coral shells has practical value in the reconstitution of the mandibular gap, and the radiological and critical properties of prepared HAp emphasize this outcome.

Article • *Open access*

	Document title	Authors	Source	Year	Citations
25	**Effect of β-TCP Powder Derived from Biomaterials on Regeneration of the Femoral Bone Defects in Rabbits**	Atiyah, A.G., Hasan, M.S., Owain, M.S.	Egyptian Journal of Veterinary Science(Egypt) , 55(5), pp. 1239–1249	2024	0

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The current study evaluated the bone healing process of the β-TCP powder to treat experimentally induced bone defects in rabbit models. The β-TCP powder was prepared using the chemical method, which is characterized by Field Emission Scanning Electron Microscopy (FESEM), and Fourier Transform Infrared Spectroscopy (FTIR). After that, the β-TCP was converted into powder by applying mechanical compression pressure. Thirty (30) healthy New Zealand male rabbits were divided equally into two groups: the treated group and the control group. The previously prepared β-TCP powder filled the experimentally induced sagittal split fractures at the mid-shaft of the femoral bone in the group treated, while in the control group, the induced bone gaps were left without any treatment. The histopathological results showed normal bone marrow tissue with bone tissue regeneration that extended from both ends of the defect with active osteoblasts toward the powder in the treated group, while in the control group, there was a formation of hyaline cartilage surrounded by trabecular bone along with granulation tissue infiltrated with inflammatory cells, which surrounded the fracture location. The bone marrow examination showed the presence of Megakaryocytes and an increase in erythroid to myeloid in the treated group compared to the control group. The statistical analysis showed a significant increase (P<0.0001) in new bone tissue formation in the treated group as compared with the control group during eight months following surgery. The fibrous tissue formation increased significantly (P<0.0001) in the control group compared to the treated group. Moreover, the current work indicated that the β-TCP powder can be used as a bioactive material for bone tissue regeneration, but it requires more time to be resorbed.

Article • *Open access*

26	**Diagnostic Study for Salmonella Infection In Broiler Farms In Kirkuk Province**	Aljoburi, A.M.H., Sultan, A.A., Awad, A.H.	Egyptian Journal of Veterinary Science(Egypt) , 55(5), pp. 1183–1190	2024	0

Document title	Authors	Source	Year	Citations

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he aim of the study is diagnosis Salmonella infection in broiler chickens in Kirkuk province. For this purpose, 120 samples were collected from broiler chicken organs, which included form the cecal tonsils, liver, spleen, and gallbladder. ELISA, PCR, Culture methods, whole blood agglutination tests, and slide agglutination tests were all used for Salmonella infection diagnosis. The study recorded the rate of Salmonella isolated from the cecal tonsils,liver,gallbladder and spleen 39 (61.9%),28(44.4%),16(25.4%) and 13 (20.6%) respectively, while the results showed that 52.5% of the broiler chickens had Salmonella bacteria isolated from them, as it was found that the cecal tonsils are the best place to isolate that bacteria, and the results also showed that Salmonella enteritidis is the most prevalent species. The ELISA test resulted 60.3%, whereas other widely used tests produced a result of 100%. The test of ELISA, the test of slide agglutination and the test of whole blood agglutination for Salmonella enteritidis, with the test of slide agglutination results for Salmonella typhimurium recorded 68.4%,71.9%, 62.3%,73.9%,83.8% and 71.4%, respectively. The study concludes that the best place to isolate the bacteria is the cecal tonsils. In addition, the most common type of Salmonella that was diagnosed in the samples studied was the Salmonella enteritidis.

Article

☐ 27 **Molecular Detection of Feline Herpesvirus 1 in Cats in Mosul City** — Waleedismailkhudhur, Albaroodi, S.Y., Sadiqnomi, B. — Indian Veterinary Journal , 101(8), pp. 20–27 — 2024 — 0

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The study included 200 cats of various ages, genders, nature of breeding, source, and vaccination programs, as well as health status. They were examined clinically, and the clinical signs appearing on them were recorded, and then swabs from the conjunctiva of the eyes, the oropharyngeal, and the nose were collected and transferred to the laboratory. The feline herpes virus's DNA molecule was examined using swabs obtained for the investigation. The DNA was extracted, and a specific primer was then used in the polymerase chain reaction technique to identify the thymidine kinase template gene.. The extract DNA for each sample an final reaction volume of 182 bp. After recording positive samples in many samples, 10 positive samples were positive and their DNA was purified. Then the genetic sequence of each sample was performed in the Marcogen laboratory, Korea, and then the similarity to the genetic sequence in the database was determined using the Basic Local Alignment Search program, which is located on the electronic page. For the National Center for Life Technologies (NCBI) (www.ncbi.nlm.nih. gor), the multiple sequence alignment was then created using the Cluster Omega program, and then the phylogenetic tree was created using the MEGA 7 program.

Article • *Open access*

☐ 28 **Detection of ESBL E.coli That Carried STX1 and STX2 Form Common Carp (Cyprinus carpio) in Salhaldeen Province** — Jumma, Q.S. — Egyptian Journal of Veterinary Science(Egypt) , 55(4), pp. 1165–1170 — 2024 — 5

Document title	Authors	Source	Year	Citations

Hide abstract View at Publisher Related documents

E .coli is the most important bacteria that contaminates of fish farms and leads to Pollution and corruption of fish, which causes a threat to public health, the current study aimed to find the distribution of ESBL E.coli that carried STX1 and STX2 from common carp (Cyprinus carpio) in Salhaldeen province, for this purpose 100 sample were collected from fish, traditional and genetic methods were used. The results of the current study reveal to that Out of 100 fish sample, E. coli isolated from 48 in rate of 48%, and 19 isolates out of 48 were diagnosed as ESBL E.coli in rate of 39.5%, according to PCR test Stx1 gene detection on 31 isolates out of 48 isolates in rate of 64.5% while Stx2 gene detection on 39 isolates in the rate of 81.2%. We can conclude the high contamination rate of fish and its farms with E.coli in Salhaldeen province, most isolates are ESBL, Stx2 gen is more frequent than Stx1 gene.

Article • *Open access*

☐	29	**Molecular identification of some virulence and antibiotic resistance genes in Pseudomonas aeruginosa isolated from UTI infection | التشخيص الجزيئي لبعض جينات الفوعة ومقاومة المضادات الحيوية في جراثيم الزائفة الزنجارية Pseudomonas aeruginosa المعزولة من اصابات المجاري البولية**	Ossman, A.R., Hamad, M.A., Ahmed, S.S.	Egyptian Journal of Veterinary Science(Egypt) , 55(4), pp. 1143–1150	2024	0

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THE study aim to isolates Pseudomonas aeruginosa from urinary tract infections using PCR, virulence gene, and antibiotic resistance detection using conventional and molecular methods. all sample of UIT for detection of P. aeruginosa were diagnosed by conventional,biochemicals and VITEK-2 Compact technique; each isolate was cultivated on two plates of brain heart infusion agar, one used as a stock culture for antibiotic sensitivity test, while the other was used for genetic materials extraction and amplification of them to detect the presence or not of the virulence genes and the genes responsible for antibiotics resistance. The drug susceptibility test of 24 isolates of Pseudomonas aeruginosa was studied by the classical disk diffusion method against [12] antibiotics on Mueller-Hinton agar. The percentage ranged between [12.5%] imipenem and [100%] ampicillin. The molecular confirmation revealed that all 24 isolates were P. aeruginosa and came by the results of the VITEK-2 Compact technique. The results of molecular detection of virulence genes showed that 83.33% [20/24] of isolates were positive for the presence of the algD gene, in contrast, 70.83% [17/24] of them proprietor toxA gene. According to the outcomes of molecular identification of antibiotics resistance genes, the overwhelming majority of isolates carried the CTX-M gene [91.66%], and 75% of them were bearer SHV gene. In comparison, the TEM gene appeared in 45.83% of isolated P. aeruginosa. In conclusion, P. aeruginosa has the genetic weapons for considering and persisting infections, the bacteria own antibiotic-resistance genes that construct resistant bacteria which makes the cure and control of infection very hard.

Article • *Open access*

	Document title	Authors	Source	Year	Citations
30	**Impact of Retained Fetal Membranes on Concentration of Some Biochemical Parameters and Liver Enzymes in Cattle**	Al-Rawy, I.Y., Dhahir, N.N., Ismaeel, M.A.	Egyptian Journal of Veterinary Science(Egypt) , 55(4), pp. 1077–1082	2024	2

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CURRENT study was aimed to investigate effect of retained fetal membrane on the concentration of some biochemical parameters and liver enzymes in cows. Total forty five multipara local Iraqi Holstein (n=35) cows suffered from retained fetal membrane were considered as treatment group and 10 normal cows (n=10) as control group, in Salah El-Din province, were used in the current study at the period September 2020 up to April 2021. Blood samples were collected and serum extracted for biochemical parameters and liver enzymes analysis from all animals. The concentration of calcium, phosphorous, iron, magnesium, copper, total serum proteins, glucose, cholesterol and triglyceride were measured by spectrophotometer. Aspartate aminotransferase (AST) and alanine aminotransferase (ALT) were also estimated. The results of present study revealed that the triglyceride showed significant (P≤0.05) increases in cows suffered from retained fetal membranes (20.863±1.222 mg/dl) compared with healthy cows (16.3±2.172 mg/dl), while the total protein, Glucose and cholesterol didn't show significant differences between groups. Both Calcium and phosphorous showed significant (P≤0.05) decreases in cows suffered from retained fetal membranes (1.598±0.166 mg/dl and 1.105±0.118 mg/dl respectively) compared with healthy animals (2.058±0.191 mg/dl and 1.52±0.0393 mg/dl respectively). The liver enzymes didn't show any significant changes between the groups. In conclusion the present study elucidated that calcium and phosphorous are the main minerals which have important role in occurrence of retained fetal membranes in cows.

Article • *Open access*

31	**Diagnosis of Pregnancy in Iraqi Awassi Ewes Through Progesterone Hormone Measurement and Ultrasonography Following Induction of Fertile Estrus with Sulpiride**	Abd, A.A., Ibrahim, N.S.	Egyptian Journal of Veterinary Science(Egypt) , 55(4), pp. 945–953	2024	3

Document title	Authors	Source	Year	Citations

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HE aim of this study was to diagnose pregnancy in Iraqi Awassi ewes by assessing progesterone (P4) levels and using ultrasonography after inducing fertile estrus during the anestrus season with Sulpiride, a dopamine antagonist for improvement of reproductive efficiency. This study was conducted from December 2022 to June 2023, with ewes randomly divided into two groups, each consisting of 6 ewes. The treatment group received a dose of 0.6mg/kg of Sulpiride, while the control group received normal saline. The results showed a significant ($P < 0.05$) estrus response in the treated group. P4 concentrations were significantly higher ($P < 0.05$) in the treatment group on days 14, 21, and 28. However, the results of ultrasonography for pregnancy detection were non-significant in both the treatment and control groups at 30%, 60%, and 75% on days 30, 60, and 75, respectively, due to a high rate of early embryonic mortality. In conclusion, the use of Sulpiride proved to be a successful method for inducing fertile estrus in ewes, serving as a non-hormonal intervention during the seasonally anestrus period. The Seasonal anestrus is considered one of the main causes important problems in sheep, which causes Poor reproductive efficiency. P4 hormone measurement and ultrasonography were found to be rapid, safe, and reliable methods for diagnosing early pregnancy for improvement of reproductive efficiency in Iraqi Awassi ewes.

Article • *Open access*

☐ 32	**Estimation of Breeding Values and Genetic Variances at First Exon-region of IGF1 Gene and its Association of Growth Traits in Awassi Sheep which are Breeding in Iraq**	Al-Azzawi, Z.M.M., AdhamAhmed, B., Shihab, O.H., Aldoori, Z.T.	Indian Veterinary Journal , 101(5), pp. 11–15	2024	0

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The study aimed to determine the breeding values and genetic ariation based on the inor mation o the genetic polymorphism o the first exon region o IGF1geneusing by RFLP andits relationship to growth traits (birth weight, weaning weight, and average daily gain) The study was conducted at the Ruminant Research Station o the General Authority or Agricultural Research / Ministry o Agriculture a sample o 55 Awassi Turkey ewes in the animal breeding station in Baghdad and the Center or Biotech nology / University o AlNahrain The breeding value (B) o genotype BB was higher (404) compared with AA and AB (372 and 388) or the birth weight (BWT) respectively, while B was higher or AA genotype in weaning weight (WWT) and average daily gain (ADG) traits (2047 and 1634), respectively It is ound that the value o dominance variance (D) within the genetic variation is high as compared with the additive variance (A) in WWT and ADG it reached 0037 and 0018 which indicates the eect o the dominance interaction on thesis traits The average o the allele eect and the eect o substitution o alleles were a avor or the allele A compared to mutant allele (B), which gives evidence about the direction or the selection o the dominant allele, as the requency o allele A was more distributed (070) in the studied sample, so it is necessary to maintain the requency o this allele and increase its requency with the help o selection with genetic markers

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Article • *Open access*

	Document title	Authors	Source	Year	Citations
33	**The effect of inflammatory cytokines on occurrence of retained placenta in cattle**	Dhaher, N.N., Eesa, M.S., Al-Mutar, H.A.H., Ismaeel, M.A.	Advancements in Life Sciences , 11(2), pp. 414–418	2024	0

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Background: In simple terms, retained placenta is a common issue after parturition in cattle that can affect their reproductive ability. In pregnancies with fetal growth restriction (FGR), the placenta has low anti-inflammatory cytokines and high pro-inflammatory cytokines. By looking at variations in cytokine levels in the blood, we can diagnose the condition. The focus of a recent study was to examine the role of some interleukins (Interleukins-10, Interleukins-6, Interleukins-1β), C-reactive protein (CRP) and Tumor Necrosis Factor (TNF)-α, in retained placenta occurrence in cattle. Methods: The study involved 40 cows, aged 3-8 years in the Salah-Din province. Each animal suffered from retained placenta also eleven healthy cows served as the control group in a period of January to August 2022. The blood serum was analyzed using enzyme immunoassay techniques (ELIZA) to measure the levels of IL-10, IL-6, IL-1β, CRP and TNF-α. Results: Serum levels of IL-10, IL-6, IL-1β, CRP and TNF-α showed a significant increase in cows experiencing retained fetal membranes compared to healthy cows (2.31±0.11 vs 1.41 ±0.07) (10.48±0.24 vs 5.40±0.19), (13.6±2.1 vs 4±0.9), (0.9±0.02 vs 0.32±0.04) and (60.1 ± 12.79 vs 29.5 ± 16.58) respectively. Conclusion: from the present study we conclude that IL10, IL6, IL1β and TNFα play an essential component in retained placenta incidence, and the estimation levels of these parameters in serum may be considered good indicator for occurrence in cattle. RT-PCR revealed increased expression of SDHA genes in the maternal compartment of the placenta.

Article • *Open access*

34	**Evaluation of Isolation and Polymerase Chain Reaction in Diagnosis of Mycoplasma Gallisepticum in Broiler Chickens in Kirkuk Governorate, Iraq**	Hamdon, M.S., Noomi, B.S., Al Rasheed, A.A.	Egyptian Journal of Veterinary Science(Egypt) , 55(3), pp. 775–783	2024	2

Document title	Authors	Source	Year	Citations

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THE objective of this study was to evaluate isolation, and evaluate the polymerase chain reaction (PCR) technique to confirm diagnosis of Mycoplasma gallisepticum (MG) in broiler chickens. One of the finest independent organisms is MG, can be reproduced autonomously, the lack of a cell wall, allowed it to take on various shapes and sizes, and to resist cell-wall targeting antibiotics. When MG infect chickens it caused chronic respiratory disease (CRD), characterized by rales, sneezing, coughing, nasal discharges, dyspnea, conjunctivitis. Decreased feed intake, feed conversion, an increase in mortality, carcass damage and medication costs, causing high economic losses. Diagnosing the cause is the first step in treatment, for evaluation isolation and direct PCR a total of 180 tracheal swabs were collected from broiler chickens (28-40) days old who had symptoms of CRD, during the period (1/12/2022-28/2/2023). Prevalence of MG by, isolation and direct PCR was 30.5% (55/180) and 32.77% (57/180) respectively. The sensitivity and specificity of direct PCR were 100% and 96.8% respectively. When comparing culturing with PCR, the study found that the sensitivity and specificity were 93% and 100% respectively. The study concluded that culturing is still the golden standard test for MG detection for its high sensitivity and specificity but takes a long time, direct PCR is very fast and efficient.

Article • *Open access*

☐	35	**Impact of Fabricated Coral Shell Hydroxyapatite Powder and Autologous Plasma Rich-fibrin in Remodeling of the Mandibular Bone Critical Size Defect in Dogs: Histopathological and Immunohistochemical Study**	Atiyah, A.G., Alkattan, L.M.	Journal of Applied Veterinary Sciences , 9(2), pp. 111–119	2024	0

Document title	Authors	Source	Year	Citations

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Histopathological and immunohistochemical assessment of fabricated coral shell hydroxyapatite (CSHA) and plasma rich fibrin (PRF) in remodeling of the induced critical size defect of the mandibular bone in the dogs: Twenty-seven adult dogs of both sexes were included and equally divided into three equal groups: control, plasma-rich fibrin (PRF) and hydroxyapatite group (CSHA). The experimental mandibular bone defect was induced in a circular shape, and the dimensions of the defect were 14×5mm. Evaluation of the healing progress of the defect and associated macroscopical, histopathological, and Immunohistological findings was recorded in all studied groups at 7, 15, and 30 days post-operatively. Macroscopically, the healing was evaluated by the presence of new bone tissue filling the bone gap defect in all groups during different follow-up periods. In the plasma-rich fibrin (PRF) group, the gap was highly filled with hard, firm tissues that filled all borders and the centre of the induced gap in comparison with the coral shell hydroxyl apatite group (CSHA), which is partially filled with hard tissue. Histopathologically, the progress of healing in the PRF group was represented by the presence of highly mature connective tissue and new woven bone formation at seven days and well-developed mature bone inside defective bone at 15 and 30 days post-operatively, whereas in the CSHA group, the results were represented by the occlusion of highly mature connective tissue and new woven bone formation inside the induced hole at 15 and 30 days post-operatively. At 30 days post-surgery, in the control group, there was the presence of newly formed woven bone surrounded by the edge of the mandible bone. The immunohistochemical expression of the alkaline phosphatase (ALP) in the mandible bone at 30 days PS in the control group was represented by weak positive expression, while mild positive expression was indicated in the CSHA group and moderate positive expression in the PRF group. In conclusion, this research exhibited the role of both CSHA and PRF in improving the healing process of defective mandible bones, with a clear superiority of the beneficial value of using PRF. The histopathological and immunohistochemistry assessments emphasize these results.

Article • *Open access*

	Document title	Authors	Source	Year	Citations
☐ 36	**Burned Wound Healing Effect of Prepared Pumpkin Seed Oil Nano Phytosome Loaded Lidocaine in Rabbit**	Abduwhab, W.M., Hasan, W.A., Al-Bayati, M.A.	Advances in Animal and Veterinary Sciences , 12(4), pp. 723–731	2024	0

Document title	Authors	Source	Year	Citations

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The conversion of regular pumpkin seed oil into a nanotechnology-driven composition involves encapsulating Lidocaine within the phytosome structure of the oil. This process aims to bolster its physical resilience and therapeutic advantages while mitigating potential adverse reactions. The central objective of this research centers on assessing the curative impacts of the innovative Nano phytosome pumpkin-lidocaine gel in the context of third-degree burn wound healing. The reformulation of standard pumpkin seed oil involved the encapsulation of conventional Lidocaine within a phytosome structure, resulting in the formation of nanoparticles. This modification was undertaken to enhance both the physical stability of the oil and the therapeutic properties of pumpkin seed oil, while simultaneously mitigating the potential side effects associated with Lidocaine. Evaluation of the therapeutic effect of Nano phytosome pumpkin-lidocaine gel on the healing of third burn wounds. Twenty-five,10 to 18-week- old,white male and female adult rabbits weighting 2.5-3 kg divided to5 groups (n=5) as following negative control group, positive control group, ordinary pumpkin seed oil group, Nano phytosome pumpkin-lidocaine 100% gel group, and Nano phytosome pumpkin 100% gel group. The Nano phytosome pumpkin-lidocaine gel at a concentration of 100% and the Nano phytosome pumpkin gel at a concentration of 100% showed a significant entrapment % and loaded efficiency%, entrapment % were 95.2 ± 9.41, and 87.32 ± 8.1 respectively, while loaded efficiency% were 86.84 ± 7.77, and 79.40± 3.72 respectively. As well as, both the Nano phytosome pumpkin-lidocaine gel at a concentration of 100% and the Nano phytosome pumpkin gel at a concentration of 100% revealed a significant closure rate of 0.216±0.05, and 0.215 ±0.03 mm/day respectively, compared to ordinary pumpkin seed oil treated group, and both positive and negative control group. From this study concluded the pumpkin seed oil loaded with Nano phytosome pumpkin-lidocaine demonstrated good physical stability, reducing the crystal nature of active extract substances, with good entrapment% and loaded efficiency %, and improving the wound healing of burn wound.

Article • *Open access*

☐ 37	**The Effect of Different Types of Essential Oils on Some Blood Characteristics of Awassi Lambs**	Ahmed, B.A., Salman, A.H., Shehab, O.H., Ahmed, A.S.	Indian Veterinary Journal , 101(3), pp. 13–16	2024	0

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This study was conducted in the fields of the College of Veterinary Medicine - Tikrit University. The study included 20 Awassi lambs, 5 lambs for each treatment (T1 control, T2 using laurel oil, T3 using clove oil, T4 using sage oil) at the age of 6 months, dosed daily with a concentration of 500 mg/animal of the mentioned oils for a period of 90 days. This study is aimed to evaluate the effect of essential oils on blood characteristics (total protein, albumin, glucose, urea, cholesterol, triglycerides, uric acid, creatinine, calcium, magnesium, GOT, GPT, HDL, VDL, LDL, ALP).The results showed that using sage and clove oil was superior to the control treatment in terms of glucose (82.40, 80.40, 67.20, 56.80mg/dl)and triglycerides (91.40, 63.40, 60.20, 59.60 mg/dl), and adding clove oil was superior to the control treatment in calcium (9.81, 9.20, 9.32, 8.32 mg/dl) and magnesium (5.62, 5.40, 4.66, 4.56 mg/dl) and GPT (28.60, 24.80, 22.0, 21.80 U/L) and HDL (29.60, 26.60, 25. 40, 24.20 mg/dl). The laurel oilusing treatment was superior to the control in VDL (17.60, 16.20, 16.0, 14.80 mg/dl).

	Document title	Authors	Source	Year	Citations
	Article				
38	**Immunogenicity of culture filtrated proteins and whole-cell killed formalin of Listeria monocytogenes to induced cellular immune response in vivo**	Al-Bayati, H.H.K., Abdullah, S.A., Shihab, T.J., Sultan, M., Jumaa, Q.S.	Open Veterinary Journal, 14(12), pp. 3581–3598	2024	0

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Background: Listeria monocytogenes (LM) is a life-threatening bacterium affecting many individuals worldwide, including elderly people, pregnant women, and immune-deficient patients. Aim: Whole-cell killed formalin of LM antigens (WKLMAgs) and Listeria culture filtrated proteins (LCFPs) against challenge-attenuated LM after two booster doses (0 and 14 days) of immunization act as an antigen activating a high level of IgG3, IgM, CXCL2, and IL-1 beta. Methods: Forty male rats were randomly assigned to four groups. The first group served as a control negative, while the second positive (+) control was inoculation orally 1 ml with virulent (1 × 107 colony forming unit CFU/ml) of LM on day 28, whereas the other two groups were injected with 1-ml WKLMAgs and 1-ml LCFPs in two subcutaneously doses with day 14 intervals, with at day 28 a challenged effective dose (1 × 107 CFU/ml) of virulent LM. Serum blood parameters were measured. During the 35 days, the euthanized animal histopathology studies were performed on the spleen, liver, small intestine, and brain. Results: The current study indicated a significant difference between WKLMAgs and LCFPs for serological tests Immunoglobulin (Ig) M, chemokine (C-X-C motif) ligand 2, Ig G3, and interleukin-1 beta compared to both negative and positive controls at $P < 0.001$. Additionally, the WKLMAgs and LCFPs led to a decrease in the histopathological changes of organs such as (brain, spleen, liver, and intestine) compared to the positive control, which affected the organs with microgranuloma, with a pathological difference between the WKLMAgs and LCFPs compared to the negative control group. Conclusion: Both WKLMAgs and LCFPs are capable to be as a vaccine candidate antigen for the induction of protective immunity against L. monocytogenes.

	Article				
39	**Isolation and molecular identification of bacteria from sheep with eye infections**	Hasan, M.S., Fahad, O.A., Hussein, M.A., Owain, M.S.	Open Veterinary Journal, 14(12), pp. 3563–3568	2024	0

Document title	Authors	Source	Year	Citations

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Background: Ocular disease in sheep is a severe concern for the health and welfare of livestock animals, as well as losses of productivity and value to the livestock industry. Aim: This study aimed to isolate and characterize bacteria in sheep with eye disease on the molecular level. Methods: One hundred fifty sheep with eye infections were treated, and tissue samples were taken for microbiological studies. We isolated bacteria from traditional cultures and discovered molecules by polymerase chain reaction (PCR) of single bacterial genes. Results: A total of 150 ocular samples were collected from sheep, with bacterial growth observed in 120 samples, resulting in an isolation rate of 80%. Staphylococcus aureus was the most bacteria isolated in this study, which PCR also confirmed. We found antibiotic-resistant bacteria such as S. aureus, Escherichia coli, and Pasteurella multocida. These results reveal that preventing sheep ocular infections requires the effective use of antibiotics. Conclusion: This study suggests the prevalence of bacterial infection in sheep eyes and argues the utility of molecular methods in veterinary diagnosis. Record levels of antibiotic resistance must be maintained in animal husbandry and the use of antibiotic stewardship programs.

Article • *Open access*

☐	40	**The Role of Ozonated Jerusalem Artichoke Ointment on the Healing of Surgically Created Full-Thickness Cutaneous Wounds in Rabbits**	Atiyah, A.G., Hasan, M.S., Owain, M.S.	Veterinary Medicine International , 2024, 9966943	2024	0

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Jerusalem artichoke(J.A.) tubers contain compounds that exhibit anti-infammatory efects and can minimize tissue damage. Ozone is an alternative antimicrobial and immunomodulatory agent for promoting tissue regeneration. Te present study aimed to evaluate the therapeutic efect of the ozonated J.A. ointment on a surgically created full-thickness cutaneous wound in rabbit models. Te previously prepared J.A. ointment was ozonated using a Herrmann generator, followed by a subsequent evaluation of its physical and antibacterial properties. Tirty healthy male albino rabbits were used in this study. Te animals were divided into two equal groups: the control and treated group. An excisional wound model was used to assess wound healing activities. All of the animals underwent surgical preparation of their dorsal surfaces, and excisional lesions of 3 cm in diameter were created on each animal's dorsal surface of the thoracolumbar region. In the control group, the wounds were left untreated. Te animals in the treatment group received a topical application of ozonated J.A. ointment twice daily for fve days following the injury. Te animals were euthanized on Days 7, 14, and 21 after the injury for histological evaluation. Te agar well difusion method demonstrated the antimicrobial efcacy of the ozonated J.A. ointment. Also, macroscopic and histopathological results showed a signifcant ($p < 0.05$) increase in wound area contraction with enhancement re-epithelization in the treated group compared to the control group. In conclusion, the ozonated ointment derived from J.A. tubers has antibacterial properties and can promote and enhance the wound healing process.

Article • *Open access*

	Document title	Authors	Source	Year	Citations
41	**Hematological and thermographical changes in rat's model exposed to long-term RF modulated signals**	Aghaa, O.B., Hameed, B.K.	Open Veterinary Journal, 14(11), pp. 2837–2847	2024	0

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Background: Long-term exposure to LTE signals at different frequencies has become a crucial problem in our daily life. Aim: The aim of the study to figure out the thermal influence of LTE signals (850 MHz, 1800 MHz, and 2600 MHz) on hematological values in rat's model during different periods. Methods: Forty adult male rats were randomly distributed into four equal groups (control, 850 MHz, 1800 MHz, and 2600 MHz exposure groups). The rats were exposed for 2 hours per day over a period of up to 60 days using a radiofrequency generator. Results: The results showed that the different frequencies have different effects on both hematological and thermo-graphical image analysis. Conclusion: The study findings demonstrate that these LTE frequencies have a detrimental effect on the rat model through thermal mechanisms.

Article

42	**EVALUATION OF THE PREVALENCE MYCOPLASMA GALLISEPTICUM IN BROILER FARMS IN SAMARRA CITY | تقييم مدى انتشار بكتريا مايكوبالزما غاليسبتكم في مزارع الدجاج الالحم في مدينة سامراء**	Aljoburi, A.M.H.	Iraqi Journal of Agricultural Sciences , 55(5), pp. 1620–1626	2024	0

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This study was aimed to evaluate the extent of the spread for Mycoplasma gallisepticum in the broiler chicken flocks of the Samarra city. 202 samples were collected from eight meat chicken fields in the city of Samarra for the period from September to December 2022, as these samples showed respiratory symptoms. The collected specimens were dissected in order to obtain both the trachea and the air sacs; After isolating the causative agent on Pleuropneumonia - like organisms (PPLOs) medium, mycoplasma infection reached 32.2%. The result appeared in the form of colonies with a shape similar to that of a "fried egg." The rates of mycoplasma infection at culture for each of the trachea were (41.1%), while in contrast to the air sac samples, which amounted to (22.1%). Polymerase Chain Reaction (PCR) results for the 16S rRNA gene also showed a positive result for Mycoplasma gallisepticum. The results were also disturbed by the appearance of respiratory signs, such as coughing and sneezing, along with the presence of ocular and nasal secretions. It was also noted that pathological changes were recorded in both the trachea and air sacs, represented by congestion of these organs.

Article • *Open access*

43	**Investigation of the morphological and histological features of the testes of pigeon (Columba livia domestica) in pre-puberty and post-puberty**	Khalaf, H.H., Al-Juhaishi, O.A., Ashour, M.S.	Open Veterinary Journal, 14(9), pp. 2163–2169	2024	0

Document title	Authors	Source	Year	Citations

Hide abstract View at Publisher Related documents

Background: Morphological and histological examination of the testes can provide a suitable insight into the health of the reproductive system. Aim: The objective of the current study was to investigate the morphological and histological features of the testes of local pigeons (Columba livia domestica) at mature and immature stages of age. Methods: Two groups of collected specimens underwent macroscopic and microscopic investigation to evaluate and compare the main general properties of their testes. Results: The findings indicated that the testis has an oval shape in both pre-puberty and post-puberty stages, situated on the inner side of the kidney towards the caudal extreme of the lungs. However, the left testis was bigger than those on the right side. In the pre-puberty stage group, the testicular parenchyma was small, and almost collapsed seminiferous tubules containing a single layer of Spermatogonia and Sertoli cells. In contrast, in the post-puberty stage, the parenchyma space between seminiferous tubules was small, and tubules adhered closely to each other. Also, mature cells including sertoli, spermatogonia, and spermatocytes were noticed to spread within the tubules. Conclusion: The change in the histological structure of testes before and after maturity may help to evaluate the complexity of the male reproductive system of pigeons and draw attention to the organization of sex hormones and the function of several types of cells within the testes.

Article • *Open access*

☐ 44 **The radiological study of using fabricated calcium hydroxide from quail eggshell and plasma-rich fibrin for reconstitution of a mandibular bone gap in dogs**

Atiyah, A.G., Alkattan, L.M., Shareef, A.M.

Iraqi Journal of Veterinary Sciences , 38(1), pp. 55–62

2024

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In this study, Calcium hydroxyl was fabricated from quail egg-shell and autogenous plasma-rich fibrin (PRF) to reconstitute the mandibular gap in dogs. In this study, 27 dogs of both sexes were used, enrolled in three groups, nine of each. A defect as a circular gap experimentally induced on the ventral surface of the lower mandible with a diameter of (14,0.5 mm). Clinical and Radiographical examinations were evaluated at (0,15,30 and 60 days post-surgery), and the XRD (X-Ray Diffractometer), Field Scanning Electron Microscopy (FESEM), and Energy Dispersive X-ray Spectrometer (EDS) analysis were performed. Clinically there was normal mastication and no award complications. Radiographically in 1st group treated with $Ca(OH)^2$, the healing near completed, and the opacification of the bone defect in the caudal body of the mandible, with a sclerosed margin representing maturating callus with complete trabecular bridging, whereas in 2nd group at same period representing good maturating callus with complete trabecular bridging, there is disappearance of gap and complete opacification. The XRD scanning of the quail eggshell proved the hexagonal crystalline shape of calcium hydroxide containing essential elements of natural bone calcium, oxygen, and Carbone. At the same time, FESEM demonstrated the characteristic hexagonal shape of the particles, allowing identifying them as calcium hydroxide in Ca(OH)2 group with no porous in PRF. In conclusion, using fabricated calcium hydroxide quail egg shell and prepared autogenous PRF demonstrated an effective bioactive agent with superior biocompatible properties of PRF for reconstitution mandibular defect in dogs; there was increased radiographic density of defective bone.

Article • *Open access*

	Document title	Authors	Source	Year	Citations
45	**Therapeutic Role of Vitamin D3, K2, Garlic Extract, Calcium and Spirulina Algae Powder on Induced Hyperlipidemia in Rats**	Aziz, A.S., Tawfeeq, F.K.H., Ahmed, M.S.	Egyptian Journal of Veterinary Science(Egypt) , 55(3), pp. 651–659	2024	0

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THE study aims to determine the therapeutic role of vitamin D3, k2, garlic extract, spirulina and calcium on induced hyperlipidemia. The experiments included 90 male albino rats and were divided into two groups, the first group were given a standard diet for two months and the second were fed on fodder with 4% cholesterol added for two months. The groups were treated for a month with statin (40mg/kg) vitamin D3 (1000IU/kg), k2(100mg/kg of feed), garlic extract (400 mg/kg), spirulina (1000g/kg) and calcium (800mg/70kg). the results showed increase in the level of cholesterol, triglyceride, LDL, VLDL and decrease the level of HDL in the hyperlipidemia group compared with the control group and decrease in the level of cholesterol and triglyceride in treatment groups which treated with statin, vitamin D3, k2, garlic extract, calcium and spirulina compared with the non-treatment hyperlipidemia group with increase in the level of HDL in treatment groups which treated with statin, vitamin D3, vitamin k2, garlic extract, calcium and spirulina compared with non-treatment hyperlipidemia group

Article • *Open access*

	Document title	Authors	Source	Year	Citations
46	**Impact of Baobab Consumption on Some Biochemical Alterations in Male Diabetic Rats | تأثير استهلاك الباوباب على بعض المتغيرات البيوكيميائية في ذكور الجرذان المصابة بالسكري**	Salih, D.W., Alnajar, H.S., Hadree, D.H.	Egyptian Journal of Veterinary Science(Egypt) , 55(1), pp. 147–156	2024	2

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DIABETES is a chronic metabolic, which contributes to disease progression and complications. Baobab is a tropical fruit tree known for its medicinal properties and rich content of antioxidants and anti-inflammatory compounds. This research aimed to investigate the potential anti-inflammatory effects of baobab (Adansonia digitata) in an induced diabetic rat. The study utilized an interventional design and divided the rats into various treatment groups, including a control group, diabetic group, and groups treated with baobab extract, metformin, or a combination of both. Blood samples were collected at various time points to evaluate blood sugar levels, tumor necrosis factor-alpha (TNF-α), interleukin-6 (IL-6), and interleukin-10 (IL-10) levels. The results showed that baobab and metformin, either alone or in combination, significantly reduced blood sugar levels compared to the positive control group. Additionally, baobab demonstrated a potential for reducing TNF-α, IL-6, and IL-10 levels, indicating its anti-inflammatory effects in the diabetic model. These findings suggest that baobab may have therapeutic implications in managing inflammation associated with diabetes. However, further research is required to fully elucidate the underlying mechanisms and evaluate the clinical effectiveness of baobab in human subject.

Article • *Open access*

	Document title	Authors	Source	Year	Citations
47	**Nephrotoxicity Evaluation of Captopril and Enalapril in Rats: Comparative Study**	Ibrahim, M.D., Saeed, M.G., Hasan, W.A.	Egyptian Journal of Veterinary Science(Egypt) , 55(1), pp. 69–81	2024	1

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THE objective of this study was to look into the renal toxicity of high-dose captopril and enalapril. The animals in this experiment were separated into five groups of ten animals each, with the first serving as a control group, receiving only distilled water, the second receiving captopril doses 10 and 20% of LD50, and the fourth and fifth receiving enalapril 10 and 20%. For four weeks, the dose is given orally twice weekly. Samples were obtained after one week and again four weeks afterwards. Significant increases in urea and creatinine concentrations were seen after 1 week of therapy with 20% enalapril, as well as urea and creatinine were considerably raised in the 20% captopril and 20% enalapril-treated groups after 4 weeks of treatment. In the one-week 10% therapy groups, kidney tissue showed intact glomeruli and proximal renal tubules comparing with 20% treatment groups revealed glomerular atrophy, dilation of Bowman's space, and vacuolar degeneration of the epithelial cell. After 4-weeks the 10% captopril group revealed glomerular atrophy, and epithelial cell vacuolar degeneration. The 20% captopril group's kidneys revealed atrophy, dilatation of Bowman's space, and necrosis. Enalapril 10% and 20% groups showed glomerular atrophy, dilation of Bowman's space, and vacuolar degeneration. The study examined TNF-expression in immunohistochemistry. The control group had no expression, but the captopril 10% and enalapril 20% groups had minor and moderate expression, respectively. The study concluded that enalapril at a concentration of 20% has more severe toxic effects on the kidneys than captopril at the same dose.

Article • *Open access*

	Document title	Authors	Source	Year	Citations
48	**Evaluation The synergism Activity of Portunus armatus and Apium graveolens Extract as Antioxidant in Rats Exposed to Oxidative Stress**	Oubeid, W.S.	Egyptian Journal of Veterinary Science(Egypt) , 55(2), pp. 335–343	2024	2

Document title	Authors	Source	Year	Citations

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THE Portunus armatus is a crab that is highly valuable economically, has a broad geographic distribution and is used medicinally. It is also regarded as seafood in several countries like Iraq. Celery (Apium graveolens) is a native medicinal plant to Europe. This plant has a Very wide range of usage and cultivation. Celery (Apium graveolens) is usually used in traditional medicine as a diuretic or anti-hypertensive agent. The study included 15 experimental rats aged 2-3 months, weight 150-250gm .all the experiments were done in animal house/the college of veterinary medicine at the university of Tikrit. The 15 rats disterbured into 5 groups (G1 given distilled water for four weeks as a negative control group, G2 given hydrogen peroxide at concentrations 1% with distal water for four weeks as a positive control, orally using gavage,G3 given hydrogen peroxide at concentrations 1% with Apium graveolens extract of one ml for each rat daily, G4 given hydrogen peroxide at concentrations 1% with Portunus armatus extract 1 ml for each animal daily and G5 given hydrogen peroxide at concentrations 1% with given the both extract daily (1ml of ach one) for four weeks, respectively. At the end of experiment the animals were scarified. The blood was drawn by orb, to obtain the blood for hematological tests and the serum for biochemical tests, The levels of MDA increased significantly in the G2 comparative with control group and others treatment group's p ≤ 0.05, The TAC and Glutathione peroxidase level decrese significantly in oxidative stresses group G2 P ≤0.01 and increase in alone extract comparative with the other groups, while the level of TAC increase significantly in synergism group comparative with oxidative stress group (p≤ 0.05). the concentration of SOD reduced in oxidative stress comparative with control group (p≤0.05), while its return to normal value in the synergism group pf both extract. The results show a significant increase of liver enzyme and glucose level in oxidative exposure animals comparative to control group were the enzymes began to return to its normal value after treatment with both extract. High significant (p≤ 0.01) was obtained through the synergism effect.

Article

☐ 49 **Induction of Oestrus by Sulpiride and Measurement of Estrogen Hormone in Iraqi AwassiEwes during the out of Breeding Season**

Abd, A.A., Ibrahim, N.S.

Indian Veterinary Journal , 100(12), pp. 15–18

2023

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Aim of the study was to induction of estrus in anestrus Iraqi Awassi ewes by sulpiride treatment. The results of estrus response reveals significant differences (P<0.05) between treated and control groups. The time elapse to estrus followingtreatmentwas7±1.30days.Theaverage estrus duration average was 29.3±2.4 hours in treated group. The estrogen concentration was significantly (P<0.05) between treatment and control group (15.00±0.57 and 12.00±0.77 pg/ ml) respectively. It can be concluded that using sulpiride in programs for induction of estrus as non-hormonal intervention in seasonally anestrus ewes shows a high rate of successful estrus induction in Iraqi Awassi ewes.

Article • *Open access*

☐ 50 **Evaluation of histopathological and healing potentials of the full-thickness cutaneous wound for a topical ointment formulation containing extract of bark Quercus aegilops in mice**

Shihab, T.J., Sultan, A.A., Atiyah, A.G., Alwash, S.W.

Iraqi Journal of Veterinary Sciences , 37, pp. 121–128

2023

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Document title	Authors	Source	Year	Citations

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Cutaneous wounds are significant problems that can be treated with traditional herbal supplements. This study evaluated the wound healing potential of Quercus aegilops barks extract formulations on excision wounds. BQAE extractions were acquired and employed to make two distinct formulas, namely, 10 and 20% barks of Quercus aegilops extract. These formulations were applied topically once daily for 12 days to check out their capacity to heal wounds in a mice model of excision wound repair. At 0,3,6,9 and 12 days, wound sizes and healing areas were observed. Hematoxylin and Eosin staining were used to skin tissue samples for histopathological evaluation. The formulations of the ointments were found to be stable and skin-safe. Comparing the wound contraction and healing area to the positive (standard reference Povidone-iodine) and negative controls, the 10 and 20% BQAE formulations both caused a substantial (P<0.05) reduction in these two parameters (wound contraction and healing area). A significant (P<0.05) increase in the levels of Reduced glutathione, Superoxide dismutase, and Catalase, as a decrease in the levels of Malondialdehyde was observed in 10 and 20% BQAE groups when compared with positive and negative groups. The histopathological studies of excision biopsy on day 12 observed 10 and 20% BQAE groups increased collagen formation, increased number of neovascularization, and reformation of sebaceous glands, with full thickness epithelization of the epidermal layer as soon as compared with the standard reference Povidone-iodine 10% (positive control) and negative control groups. Thus, the study in vitro (physical properties of the ointment) and in vivo scientifically validated the wound-healing activity for barks of extract (BQAE), which explained the increased collagen production and potential antioxidant activity, thereby supporting the traditional claims.

Article

☐ 51 **Interaction Effect of Methotrexate and Aspirin on MCF7 cell line Proliferation: In vitro Study** | Hussein, H.M., Wadee, S.A. | Journal of Advanced Veterinary Research , 13(9), pp. 1767–1771 | 2023 | 0

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Methotrexate, a folic acid molecular alternative inhibiting dihydrofolate reductase (DHFR), is employed for the treatment of various types of tumors combined with aspirin; acetylsalicylic acid is a nonsteroidal an-ti-inflammatory drug (NSAID). The present study aimed to detect the combined effects of both medications on MCF7 cell line activity. The drug combinations of aspirin and methotrexate were tested for cytotoxicity against the breast cancer cell line MCF7 using the MTT assay. The results showed that methotrexate, aspirin, and combination drugs have potent cytotoxicity against MCF7 cells. The mean IC50 of the methotrexate-treat-ed group was 155.7 µg/ml (range, 77.89 to 311µg/ml. However, the IC50 of the aspirin-treated group was 465 µg/ml (range, 243.3 to 888.6 µg/ml). The IC50 of combination drugs used in the CompuSyn Isobologram on MCF7 cell lines, the cytotoxicity of medications methotrexate, aspirin, and combination demonstrated a synergistic action, and combination drugs have potent cytotoxicity against MCF7 cell lines. In conclusion, the combination of methotrexate and aspirin has a potent anticancer effect.

Article

	Document title	Authors	Source	Year	Citations
52	**Dose Dependent Cytotoxicity Effect of Doxorubicin on Breast Cancer Cell Line (AMJ13) Proliferation: in Vitro Study**	Hussen, E.H., Wadi, S.A.	Journal of Advanced Veterinary Research , 13(9), pp. 1772–1775	2023	0

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The purpose of the current investigation was to identify the dose-dependent effect of doxorubicin on the proliferation of the AMJ13 cell line. The AMJ13 breast cancer cell line was used to investigate the cytotoxicity of the medication doxorubicin. The median inhibitory concentration (IC50) was calculated using the Methyl thiazolyltetrazolium (MTT) assay. Doxorubicin's IC50 value, which ranged from 162.2 to 308,3, was 223.6. Doxorubicin inhibited the proliferation of AMJ13 cells to a greater or lesser extent at concentrations of 1000, 500, 250, 125, 62.5, and 31.2 g/ml (58.8%, 46.4%, 32.3%, 23.8%, 11.3%, and 0.896%). respectively. The percentage of cytotoxicity (CT) After 72 hours of treatment, doxorubicin inhibited MCF7 cell growth in a dose-dependent manner, with a CT% of 90% at a dosage of 50 M. To sum up, doxorubicin displays strong cy-totoxicity against the AMJ13 breast cancer cell line. It could be concluded that the effect of doxorubicin on the proliferation of the AMJ13 is dose dependent. In addition, morphological changes and apoptosis significantly enhance the inhibition of growth.

	Article				
53	**Clinical and Biochemical Study of Pregnancy Toxemia in Iraqi Ewes**	Khames Mustafa, M., Shareef Saed, O., Abdulealah Ismaeel, M.	Archives of Razi Institute, 78(3), pp. 1131–1139	2023	2

Document title	Authors	Source	Year	Citations

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Pregnancy toxemia (PT), also known as ketosis or twin lamb disease, is a group of in-sequence metabolic disorders usually observed in the last pregnancy period of ewes. Blood samples from 60 Awassi ewes were collected, including 50 ewes suffering from PT and 10 healthy ewes (2-8 years old) as a control group. All of them were in their final month of pregnancy from different regions of Salah Aldin Governorate, Iraq. The samples were collected between October 2021 and February 2022. Biochemical analysis of serum concentrations of all parameters was performed using the atomic absorption spectrophotometer, except for the beta-hydroxybutyrate and non-esterified fatty acids that were analyzed by enzyme-linked immunosorbent assay method. The results of the clinical criteria tests for temperature, respiration, and pulse showed nonsignificant differences (P<0.05) in the infected animals, compared to the healthy group. Clinical signs included depression, loss of appetite, weight loss, lying down, odor of ketogenic bodies through breathing, inability to walk, neurological signs, dental grinding, jaundice, blindness, bloat, dystocia, animal death, and fetal death. Based on the results of the biochemical parameters tests of the blood, a significant increase (P<0. 05) was observed in the parameters of the results of beta-hydroxybutyrate, non-esterified fatty acids, triglycerides, total bilirubin, and liver enzymes (ALT, AST, ALP, and GGT) in the animals affected by PT, compared to the control group. However, a significant decrease (P<0.05) was observed in the parameters of glucose, cholesterol, total protein, albumin, and globulin in the affected animals, compared to the healthy group. Concerning the association between disease and oxidative stress criteria, the infected animals showed a substantial (P<0.05) increase in malondialdehyde concentration and a significant (P<0.05) drop in glutathione and superoxide dismutase levels.

Article

☐ 54 **Interleukin-1β rs1143634 Polymorphism and Susceptibility to Periodontitis in the Iraqi Population** — Dahash, S.A., Hussein, K.L. — Archives of Razi Institute, 78(2), pp. 751–756 — 2023 — 1

Hide abstract View at Publisher Related documents

Periodontitis is a complex multifactorial inflammatory disease, and its genetic basis has been studied. The Interleukin-1 beta (IL-1β) is a crucial proinflammatory mediator in the pathogenesis of periodontitis with high polymorphism. This study aimed to investigate whether the rs1143634 genetic variant of the IL-1β gene is associated with an increased risk for periodontitis. For this purpose, genotyping of the IL-1β rs1143634 polymorphism was performed using the polymerase chain reaction-restriction fragment length polymorphism method on 90 patients within the age range of 35-60 years old. They were divided into two groups: 64 periodontitis cases (stage 3 and 4 periodontitis according to 2017 classification) and 26 racially matched healthy cases as the control group. Fisher's exact test showed a significant decrease in TT homozygous genotype in periodontitis cases, compared to the control group (P=0.018), suggesting that this genotype is a protective factor in the test population. Allele frequency showed an elevated odd ratio (1.24) and increased risk for periodontitis in subjects with allele C and reduced odd ratio (0.81) and reduced risk for periodontitis in subjects with allele T. Allele T of IL-1β rs1143634 polymorphism could be a protective factor, while Allele C of this polymorphism could be a risk factor for periodontitis in the studied Iraqi population.

Article • *Open access*

	Document title	Authors	Source	Year	Citations
55	**Preparation and Characterization of Bovine Small Intestine Submucosa (SIS) Hydrogel**	Hummadi, S.K., Al-Falahi, N.H.R.	Iraqi Journal of Veterinary Medicine , 47(2), pp. 15–22	2023	0

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The aim of this study was to prepare and characterize a small intestine submucosa (SIS) hydrogel as a bio-scaffold. In this study, SIS from five calves, aged 8-12 months and weighing 250-300 kg, was obtained from a slaughterhouse immediately after slaughtering. The SIS was then decellularized, powdered, and subsequently transformed into a hydrogel. This transformation was achieved by dissolving the decellularized SIS powder in phosphate-buffered saline (PBS) at a concentration of 50% w/v, and allowing it to form a hydrogel over a 12-hour period at 37 °C. Characterization of the SIS hydrogel was conducted using various techniques. Fourier Transform Infrared Spectroscopy (FTIR) was employed to identify the chemical structure of the hydrogel, revealing three primary peaks at 1639 cm-1, 1571 cm-1, and 1338 cm-1, corresponding to amide I, II, and III bands, respectively. Additionally, a broad signal at 3440 cm-1 was observed, indicative of the hydroxyproline side chain. The hydrogel's swelling capacity was evaluated, showing an expansion of 437% after a 12-hour immersion in PBS at a pH of 7.4. Scanning Electron Microscopy (SEM) analysis of the lyophilized hydrogel revealed a highly porous and interconnected architecture, resembling a honeycomb structure. Moreover, the hydrogel's antibacterial efficacy was assessed against Staphylococcus aureus using an agar diffusion test, which demonstrated a zone of inhibition measuring 16.11 mm. The combined chemical, morphological, and antibacterial properties of the SIS hydrogel developed in this study suggest its potential as a promising bio-scaffold for inducing tissue regeneration and restoring tissue function.

Article • *Open access*

56	**Macroscopic Effect of Small Intestine Submucosa Hydrogel-Silver Nanoparticles Composite on Healing of Infected Wounds**	Hummadi, S., Al-Falahi, N.	Advances in Animal and Veterinary Sciences , 12(2), pp. 216–225	2023	0

Document title	Authors	Source	Year	Citations

Hide abstract View at Publisher Related documents

Treatment of infected wounds is one of the common challenges in veterinary practice. This study highlights the synthesis and use of hydrogel derived from small intestine submucosa (SIS) and AgNPs composite for accelerate the healing of infected wounds and improve cosmetic outcomes. A 5% w/v SIS hydrogel was prepared and formulated with 100 µg/ml AgNPs to evaluate its effect on healing of infected wounds in rabbit. Forty eight adult rabbits aged 8-12 months, weighing 1.5-2.5 kg, were divided randomly into three equal groups (n=16) after inducing infected wounds. In control group (GI), the infected wounds were managed by rinsing with normal saline after debridement and bandaging without any topical application. In SIS hydrogel group (GII), the infected wounds were treated by application of SIS hydrogel after wound management. In SIS hydrogel-AgNPs composite group (GIII), the infected wounds were treated by application of composition of SIS hydrogel and AgNPs after wound management. The wound healing was assessed clinically macroscopically by measurement of wound contraction at days (0, 3, 6, 9, 12, 15, 18, 21, 24, 27 and 30) post treatment in addition to macroscopic finding images (3, 7, 14 and 30 days) post treatment to monitoring the changing in wound bed. Such investigation indicates that the percentage of wounds closure were significantly increased (P<0.05) in GII and GIII as compared to GI from day six extended to day thirty, while the significant increase in wounds closure in GIII were began from day 15th until day 24th post treatment and completely closed at day 27th without scar formation, in contrast with wounds area of GII which was nearly closed at periods of day 30th, while the wounds of GI exhibited incomplete closure at the same period. In conclusion, the composite bioscaffold integrates the properties of AgNPs with those of SIS hydrogel, providing a synergistic effect for wound healing improvement and showed the best outcome in healing of infected wound.

Article • *Open access*

	Document title	Authors	Source	Year	Citations
☐ 57	**Enhancing the composting process by using lactic acid bacilli for the hygienic disposal of dead fish**	Erdeni, A.A., Jwher, D.M.T., Hassan, M.G., Al-Doory, D.K.	Open Veterinary Journal, 13(11), pp. 1458–1464	2023	0

Document title	Authors	Source	Year	Citations

Hide abstract View at Publisher Related documents

Background: Fish producers in Iraq currently facing large and growing problems, represented by the difficulty of getting rid of large numbers of dead fish as a result of mass phenomenon mortality since 2018. As their treatment and disposal have become very cumbersome and costly, and leaving it to wild animals and natural forces is unacceptable, so most of them resort to the composting method because it is a simple, easy, and inexpensive process and benefits outputs, but it takes a long time. Aim: The study aimed to compare two different composting methods for the disposal of dead fish, one of them includes the use of lactic acid bacilli (LAB) to improve composting efficiency. Methods: Sawdust, hay, one-inch perforated plastic tubes, plastic covers, and dead fish were used to make four equal composting piles, two of them were treated with LAB, and others were left to compost naturally, the composted content was daily tested physically for color, odors, pH estimation, and LAB count. Results: The results showed that there are significant differences between normal-composed and LAB-treated groups in duration and efficiency, the total threshold limits of temperature, pH, and LAB count were 60°C ± 8°C, 6.7 ± 0.04, and 10.8 × 106 ± 1.96 CFU/g, respectively, in normal composting groups, while they were 70°C ± 2.8°C, 4.26 ± 0.01, and 23.2 × 106 ± 1.34 CFU/g, respectively, with total decomposition and disintegration of fish carcasses through 31 days in effective microorganisms treated groups. Conclusion: We concluded that the use of LAB in composted materials led to a quick and efficient composting process in terms of heat, pH, LAB count, total disintegration speed, and the ability of biosafety.

Article • *Open access*

58 **ANTIFUNGAL AND SYNERGISTIC EFFECTS OF ZNO NANOPARTICLES AGAINST T.VERRUCOSUM CAUSED RINGWORM IN COWS | التأثير المضاد الفطريات والتآزري لجسيمات الزنك النانوية ضد الشَّعْرَوِيَّ ة الثُّؤْلولِيَّة المسببة للقوباء الحلقية في الابقار هبة يونس خلف**

Khalaf, H.Y.

Iraqi Journal of Agricultural Sciences , 54(3), pp. 868–873

2023

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The current study was aimed to determined the main causes of ringworm in cows and antifungal and synergistic effects of ZnO nanoparticles. For this purpose 50 skin scrapes were collected from cows infected with ringworm, culture media, staining and genetic methods used for diagnosis. MIC and MFC for antifungal and ZnO were determined. The result showed that Trichophyton spp was isolated in rate of 76%. The isolation rate of T.verrucosum, T. mentagrophytes and T. rubrum were 68.4%, 21.0% and 10.5% respectively. MIC of Nystatin, fluocytosin, ZnO, Nystatin+ ZnO and Fluocytosin + ZnO were 200,150,200,150 and 100 µg/ml respectively. in conclusion, that T.verrucosum is main caused of Ringworm and ZnO has antifungal and synergistic effects.

Article • *Open access*

59 **EFFECT OF DEFERENT GESTATION PERIOD ON SERUM ESTROGEN, PROGESTERONE AND SOME BIOCHEMICAL PARAMETERS IN AWASSI EWES | تأثير مدد الحمل المختلفة في مستويات هرمون الاستروجين والبروجستيرون وبعض المعايير الكيمياحيوية في مصل الدم في**

Ismaeel, M.A., Saed, O.Sh., Dhahir, N.N.

Iraqi Journal of Agricultural Sciences , 54(3), pp. 884–889

2023

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Document title	Authors	Source	Year	Citations

Hide abstract View at Publisher Related documents

This study was designed to investigate the influence of different gestation periods on serum estrogen, progesterone and biochemical attributes levels in Awassi ewes. Ten ewes of 2-5 years old and 35-50 kg live body weight were used currently during the period from September 2019 to February 2020. Estrogen concentration seemed to decline since 2nd month and reached its lesser level at 4th month and re-increased at 5th month of gestation. The progesterone level increased (P≤0.05) at 2nd and 3rd months and decreased at 5th month of gestation. Serum Cholesterol, glucose, total protein, albumin and glubulin were decreased (P≤0.05) at the last gestation period. AST, ALT, and ALP activities take similar trend being decreased at the last gestation period. In conclusion estrogen, progesterone and other blood biochemical parameters were changed obviously during different gestation periods of Awassi ewes.

Article • *Open access*

60 **EFFECT OF FOLIC ACID ON SOME PHYSIOLOGICAL PARAMETERS IN FEMALE RABBITS TREATED WITH METHOTREXATE | تأثير حمض الفوليك على بعض المعايير الفسيولوجية في اناث الأ ا رنب المعاملة بعقار الميثوتريكسات**

Hadi, K.A., Al-douri, S.D.S., Hadree, D.H.

Iraqi Journal of Agricultural Sciences , 54(3), pp. 730–734

2023

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The present study was carried out to investigate the effect of folic acid (FA) on the hematological picture of female rabbits treated with methotrexate MTX. A total of twenty female rabbits were used in this study. They were at age 4-5 months. Their body weight ranged between 1-1,200 Kgm. All animals were kept under normal condition. its divided in to four groups and each group consist of five animals as follows (Control group: 5 rabbits were received distilled water, Folic acid group: 5 rabbits were received folic acid at 0.07mg/kg body weight daily, Methotrexate group: 5 rabbits were received methtrexate (0.03 mg/kg body weight) three times a week, folic acid with Methotrexate group: 5 rabbits were received folic acid (0.07 mg/kg body weight) and methotrexate (0.03mg/kg body weight) three times a week. The drugs were given by intubation. The experiment was last for 9 weeks. Blood sample were collected after end of the experiment to study the following hematological parameters: RBCs count, Hb, PCV, RBCs indices (MCV, MCH, MCHC). The group treated with folic acid showed a significant increase P≤0.05 in RBCs count, Hb conc. and PCV% as compared with all other groups. The results of MTX group reveal a high significant decrease in their RBC count, Hb conc., PCV%. At the same time there is a significant increase in MCV, MCH and MCHC indices. The group of animals received FA with MTX showed a good prognosis with health improvement characterized by high significant changes in all studied parameters to return back to their normal values. It was concluded that folic acid is very important for erythropoiesis. MTX treatment induce megaloblastic anemia resulted from inhibition of DNA synthesis in RBCs mainly by folate deficiency. FA administration with MTX correct these changes and the animals return to normal conditions. More work is needed to study the effects of these drugs on other systems in the body.

Article • *Open access*

	Document title	Authors	Source	Year	Citations
61	**Effect of clarification on some characteristics of pomegranate juice processed by two different methods during storage | Efeito da clarificação sobre algumas características do suco de romã processado por dois métodos diferentes durante o armazenamento**	AL-Jammaas, O.H.A., Yaseen, S.S., AL-Janabi, A.M.A.A.	Revista de Ciencias Agroveterinarias , 22(2), pp. 321–328	2023	0

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This study aimed to assess the effectiveness of two clarifying procedures and their effects on some properties in thermally or microwave-pasteurized pomegranate juices. The experiment consisted in combining pectinase and protease as well as chitosan and gelatin once they were being stored in the refrigerator. The experiment consisted in three parts, being the first one a fresh juice without any clarification treatment, whereas, the second one was the fresh juice treated with clarifying agent consisted of pectinase and protease mixture ratio (2:1) at 0.75 v/v,and 50 °C for 20 min. Finally, the third one was fresh juice treated with chitosan and gelatin mixture at 0.4 and 0.8) g/L, respectively, at 50 °C for (20) min. The pasteurization of all three experiments was done by using two techniques, i.e., one with thermal water bath at 85 °C for two min and the microwave at 400 Watts for two min. All pomegranate juice bottles were stored at 4 °C for three months. The results showed a significant effect of the clarification method variable on the properties studied, especially turbidity, polyphenol and anthocyanin values. Moreover, the juice clarified with the enzymatic clarification method had better characteristics than the traditional ones during storage, what has therefore a better commercial appeal. The area of significance was founded with the use of traditional clarification with concentration at (0.4 and 0.8) g/l, and microwave pasteurization with 400 watts and zero month of storage at 4 °C, respectively, which is provided a minimum turbidity value.

Article • *Open access*

62	**Evaluation of Pain and Inflammation Protection Activities of Meloxicam in Chickens**	Abdullah, A.D., Hadi, K.A., Albadrany, Y.M.	Egyptian Journal of Veterinary Science(Egypt) , 54(2), pp. 237–243	2023	2

Document title	Authors	Source	Year	Citations

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THIS in chickens. study aimed Methods to explore : The median the pain lethal and inflammation dose (LD50) protective and median effects effective of meloxicam analgesic dose (ED50) of intraperitoneally (i.p.) administered meloxicam were determined using an up- and-down technique. Drug safety indices based on the collected results. The dose-dependent analgesic efficacy of meloxicam in chicks was determined by electrical stimulation. The formalin test was used to validate the pain and inflammation protective properties. Results: The median lethal dose (LD50) was 156.5 mg/kg intraperitoneally. The median effective analgesic dose (ED50) of meloxicam in chicks was 8.25 mg/kg intraperitoneally. Meloxicam's therapeutic index, standard safety margin, and therapeutic ratio when administered intraperitoneally, were 20, 0.4, and 6.7, respectively. Meloxicam's dose-dependent analgesic effect at 8 mg/kg and 16 mg/kg ip began 0.5 h after treatment and persisted for more than 4 hours. The analgesic effect of meloxicam peaked 2 h after intraperitoneal administration. Meloxicam induced a substantial increase in the latency to raise the right foot in the formalin test when compared to the control value, as well as a significant decrease in foot lifting frequency. The foot thickness decreased significantly compared to the control value. Conclusion: These findings indicate that meloxicam has pain and inflammation protective properties, which will serve as the foundation for future pharmacological investigations, and that this medicine may be safely administered to chickens.

Article • *Open access*

63 **The Effect of Erythritol Injection in Decreasing of Abortion Rate in Local Breed Ewes**

Owain, M.S., Hasan, M.S., Atiyah, A.G.

Veterinary Medicine International , 2023, 8197703

2023

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This study designed to evaluate the effect of Erythritol injection in decreasing of abortion rate in local breed ewes. Fifty pregnant ewes from local breed aged 2-4 years with a history of abortion except G1, were fed ad libitum hay and grains with water. The study was carried out in Salah Aldein province at special farm at a period of July-November 2022. These animals were tests for brucella by using rose Bengal and ELISA at zero day for confirmation; these animals were divided into 5 groups: G1 was brucella -ve and pregnant at 60 days, G2 was brucella +ve and pregnant at 60 days, G3 brucella+ve pregnant animals and treated by antibiotics gentamicin 10%, 3 ml/animal for 3 days, G4 brucella +ve and pregnant and giving erythritol, 10 ml S/C of 10% solution (solve in water and glycerol), and G5 was brucella +ve, and all pregnant and giving Erythritol+ gentamycin 10%, 3 ml/animal for 3 days. The experiment takes 12 weeks. Blood was withdrawn at different times of experiment (0, 2 weeks and end of experiment). The seroprevalence of brucellosis was shown that all animals at G4 and G5 where seropositive after 14 days of experiment, at end of pregnancy the seropositivity were highly significantly in G4 and G5 as compared with another groups. The current results showed that percentages of abortion were higher in G2, followed by G3, while it has been reduced significantly in G4 and G1. In conclusion, Erythritol alone can decrease the rate of abortion by making the bacteria extracellular far from placenta and evading of infection by immunity and/or gentamicin injection. Also, erythritol can be used as elicit diagnosis of brucellosis in latent infected animals.

	Document title	Authors	Source	Year	Citations
	Article				
64	**Analysis of Proinflammatory Cytokines in COVID-19 Patients in Baghdad, Iraq**	Adnan Mezher, M., Bahjat Alrifai, S., Mahmood Raoof, W.	Archives of Razi Institute, 78(1), pp. 305–313	2023	5

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Due to the pandemic of COVID -19 disease and the fact that the effective variables in the severity and control of the disease have not been established, numerous factors have been investigated, including the study of inflammatory factors. A cross-sectional study was carried out to investigate the proinflammatory cytokines in patients with COVID -19, conducted in Baghdad, Iraq. The age of the patients was above > (15) years old, with confirmed infection documented by polymerase chain reaction (PCR). The subjects were 132 patients, 69 (52.3%) males, and 63 (47.7%) females. Patients were divided into three pathological groups: mild patients (45), moderate patients (34), and severe patients (53), each group was divided into four weeks according to symptoms onset date. The most common clinical symptoms were cough, fever, and headache, while sore throat, gastrointestinal symptoms, chest pain, and loss of taste and smell were less common in COVID -19 patients. Sandwich-Enzyme-Linked Immunosorbent Assay kits were used to evaluate levels of proinflammatory cytokines, including IL-1β, IL-6, IL-8, and TNF-γ. The results IL-6 and TNF-γ were significantly elevated in mild during the four weeks with (P=0.0071) and (0.0266) respectively, levels of IL-1β were increased with highly significant differences (P=0.0001) while levels of IL-8 were decreased with highly significant differences (P=0.0001) during the four weeks. In moderate patients, levels of (IL-1β, IL-6, and IL-8) increased without significance (P=0.661, 0.074, 0.0651), respectively; in contrast, the levels of TNF-γ increased with significant (P=0.0452) across four weeks. Severe COVID-19 patients showed significantly increased differences in levels of (IL-6, IL-8, and TNFá) (P=0.0438, 0.0348, 0.0447), respectively, while no significant differences in the level of IL-1β (P=0.0774). This study showed that investigating inflammatory factors in the COVID-19 pandemic is crucial in controlling and treating.

	Article • *Open access*				
65	**Some physiological and biochemical criteria in the local buffalo infected with stomach and intestinal worms in the city of Samarra**	Hadree, D.H., Shihab, O.H., Fadhil, R.M., Hadi, K.A., Suleiman, J.M.	Iraqi Journal of Veterinary Sciences , 36(1), pp. 71–75	2022	1

Document title	Authors	Source	Year	Citations

Hide abstract View at Publisher Related documents

The study included 70 local buffalo animals (between six months and two years), 50 buffalo were confirmed to be infected with gastrointestinal worms and 20 were considering as a control group. The results of the feces tests showed that local buffalo was infected with different types of worms. It was observed that worm incidence was as follows: 85% Nematodes, 10% Cestode and 5% Trematode. The results of the study showed a significant decrease in the total number of red blood cells, hemoglobin concentration, packed cell volume, total number of platelets, and significant increase was observed in the total number of white blood cells and was most likely caused by a significant increase in the rates of eosinophil's. Also the results showed that the effect of worms on some biochemical parameters was significant decrease in total protein concentration, albumin, and globulin. So, it could be concluding that buffalo spread in the city of Samarra suffers from parasitic diseases that affect the health of animals, through change the study criteria, so a therapeutic program must be adopted by cattle breeders to control parasitic diseases and thus improve the health and production of animals.

Article

66 **Genetic Detection of Genes Encodes Some Enzymes in Entamoebahistolytica in Diarrhea Children in Iraq**

Saleh Ahmed, S., Ghanim Abdulwahhab, I., Salman Alagely, H.

Archives of Razi Institute, 77(6), pp. 2201–2206

2022

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Entamoebahistolytica is a protozoan, an anaerobic intestinal parasite that causes about 50 million infections and a mortality rate of more than 100,000 worldwide. For diagnosis, two hundred samples of children with diarrhea signs were evaluated using staining and polymerase chain reaction techniques. The current study recorded 11 positive cases of E. histolytica, which were diagnosed by polymerase chain reaction (PCR) out of a total of 51 positive cases diagnosed microscopically for pediatric children arriving at Tikrit General Hospital in Tikrit city and the nearby areas. The percentage of positive cases reached 21.57% for the PCR assay, as significant differences appeared compared to the microscopic examination. The results showed that the parasite infection rates differed between males (54.9%) and females (45.1%). The percentage of infected numbers in the age group less than one year was about 43.1%, while the percentage of disease control and prevention programs f infected people in the age group 1-2 years was (31.4%). The results showed that the percentage of infected age group between (2-3) years was 15.7%. The recorded data showed that 5.9% and 3.9% of the participants were infected in the age group of3-4 and over four years old, respectively. The genes encoded in Cysteine proteinase five and Phospholipase were diagnosed using the PCR technique. The concordance with the current study isolate and 90% match globally. In conclusion, the methods of detection of E. histolytica appeared differences in positive results for this parasite.

Article • *Open access*

67 **Immune response strategies of Brucella melitensis and their antigens in rats**

Noomi, B.S., Ahmed, S.S., Khalaf, H.Y., Jafar, N.A.

Iraqi Journal of Veterinary Sciences, 36, pp. 27–30

2022

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Document title	Authors	Source	Year	Citations

Hide abstract View at Publisher Related documents

Brucella melitensis is an intracellular bacterium and is the main brucella species that cause abortion and placenta retention in sheep and goats. It has many mechanisms to evade the immune response. The current study aimed to investigate Brucella melitensis strategies for producing immune responses in rats after challenging the bacterium. For this purpose, live and killed Brucella melitensis REV1 strain was given to rats subcutaneously, and immunological markers like TLR2, TLR4, IFN-γ, and anti-brucella antibodies were determined. The results showed that the level of immunological markers like TLR2 and TLR4 did not significantly increase in rat groups inoculated with live Brucella melitensis, while it increased in the rats' groups vaccinated with the sonicated Brucella melitensis; also, the results showed an increase in the level of IFN-γ and anti-brucella antibody titers in all animal groups. The study concluded that the inoculation with killed bacteria and REV1 could protect the animals against challenging doses, as seen when the groups were inoculated with challenge dose of the bacterium.

Article • *Open access*

68 **Evaluation of the antioxidant activity of Zingiber officinale alcoholic extract and vitamin e on liver damage induced by paracetamol drug in males of New Zealand rabbits**

Hadree, D.H., Farhan, A.A., Fadhil, R.M.

Iraqi Journal of Veterinary Sciences , 36, pp. 1–5

2022

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The aim of study is to reduce hepatic damage from paracetamol will be funded using alcohol extract for ginger and vitamin E as antioxidants in male New Zealand rabbits. Paracetamol (acetaminophen) is a widely used over-the-counter analgesic and antipyretic drug which is known to cause liver injuries in both humans and experimental animals when administered in overdose. The current study was conducted at the animal house of the College of Veterinary Medicine, Tikrit University to detect certain side effects developed with the use of the drug paracetamol, some physiological values resulting from liver damage through the use of 40 male New Zealand rabbits aged 5-7 months, randomly divided into four equal groups, including: The control group were given the normal physiological solution and the second group were given the paracetamol drug was given orally 400 mg/kg per rabbit while the third group was given vitamin e 50 mg/kg body weight as well as 400 mg/kg of the paracetamol drug was given orally. The fourth group was dosed with ginger alcoholic extract of 150 mg/kg body weight, which was given 400 mg/kg of the paracetamol drug was given orally. The study's findings demonstrated a significant decrease in the levels of catalase (CAT), super oxidase dismutase (SOD) and glutathione (GSH) in the treatment with a paracetamol drug compared to the control group, as well as a significant increase in the levels of liver enzymes and malondialdehyde. The study's results also found a significant decline in the levels of liver enzymes and malondialdehyde while revealing a significant increase in the levels of CAT, SOD and GSH in 3rd and 4th group compared to 2nd group. From the aforementioned findings, it can be concluded that vitamin e and ginger alcohol extract both reduce the unfavorable and harmful effects in some physiological parameters coming from liver damage caused by Paracetamol drug usage.

Article

	Document title	Authors	Source	Year	Citations
69	**Omega-3 as a Dietary Supplement in Rabbits: Effect on the Growth Rate, Blood Parameters and Lipid Profiles**	Al-Janabi, A.A., Alsalami, M.S., Mohammed, A.B., Al-Douri, A.A.R.	Advances in Animal and Veterinary Sciences , 10(9), pp. 1998–2003	2022	0

Hide abstract View at Publisher Related documents

This study aimed to investigate the influence of Omega-3 on the growth rates, blood parameters and lipid profiles in New Zealand (albino) rabbits. Twelve male rabbits aged 6-7 months with an average initial weight of 1308.00±39.97 g were used in this study. The rabbits were divided into three groups; the control group was treated orally with distilled water, and the second and third groups were treated orally with 150 or 300 µl Omega-3, respectively. The rabbits' body weight significantly increased in both Omega-3 treated groups, as well as red blood cells, haemoglobin, packed cell volume, lymphocytes and monocytes, after 60 days, relative to the control group. On the other hand, total white blood cells, including serum cholesterol, triglycerides, low-density lipoproteins and the aspartate aminotransferase (AST) and alanine transaminase (ALT), were significantly decreased in both Omega-3 treated groups compared to the control. In conclusion, the supplement with Omega-3 (150 and 300 µl) induced the growth rate, and liver enzymes, and reduced their lipid profiles, suggesting it would be a beneficial dietary supplement for rabbits

Article

70	**Extra-Gastroduodenal Manifestation and Helicobacter pylori Infection**	Sowaid, I.Y., Ali, O.M.K., Hussian, S.A.S.	Archives of Razi Institute, 77(3), pp. 1017–1026	2022	3

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Helicobacter pylori (H. pylori) which are known as Gram-negative bacteria tend to selectively colonize in the gastric epithelium. The infiltration of neutrophilic and mononuclear cells in the antrum and corpus mucosa is one of the consequences of acute and chronic gastritis colonization with H. pylori. This chronic active gastritis is the primary condition related to H. pylori colonization, and other H. pylori-associated disorders result from this chronic inflammatory process. The present study aimed to assess the relationship between H. pylori infection and extra-gastroduodenal manifestations, such as iron deficiency anemia, chronic spontaneous urticarial, diabetes mellitus, and celiac diseases with low ferritin levels. There were 235 subjects aged 3-75 years in the patient's group. The selected eligible patients were subjected to examination by non-invasive methods using stool antigen test and 14C-urea breath test (14C-UBT). The H. pylori antigen rapid test cassette (feces) was used for the qualitative detection of H. pylori antigens in human feces specimens. In the present study, 183 (71.8%) patients demonstrated positive results for H. pylori which had been detected by stool antigen test, out of whom 106 (57.9%) and 77 (42.1%) cases were female and male, respectively. The recorded data pointed out that the rates of Iron deficiency anemia, diabetes mellitus, and celiac diseases were 92(50.3%), 62 (33.9%), and 25 (13.7%), respectively. The findings of the present study revealed that H.pylori is more prevalent in females. Moreover, the diagnostic potential of the 14C UBT method was higher and more accurate than the stool antigen assay.

Article

	Document title	Authors	Source	Year	Citations
71	**Effect of Moringa oleifera Leaves against Hepatotoxicity Induced by Bisphenol A**	Ibrahim Salih, A., Mohammed Saleh, H., Sulaiman Khalaf, A., Sabbar Ayed, H.	Archives of Razi Institute, 77(3), pp. 1083–1089	2022	6

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Bisphenol A (BPA) is a synthetic compound with alterations in the liver, antioxidant enzymes, and reproductive hormones. The therapeutic potential of Moringa oleifera extract has recently been considered. The present study aimed to estimate the leaf extract of M. oleifera against hepatotoxicity induced by BPA. In total, 44 adult male rats were used in this study, and the experiment was conducted on 11 groups (4 animals per group). The rats were administrated (orally) with 5 and 10 mg/kg BPA and treated (orally) with 100, 200, 300, and 400 mg/kg of the aqueous extract of M. oleifera. After 28 days of challenge, liver enzymes, including aspartate transaminase (AST), alanine aminotransferase (ALT), and alkaline phosphatase (ALP), as well as a pathological study using the liver tissue sections were determined. The findings showed a significant (P≤0.05) increase in the AST, ALT, and ALP in the BPA groups with different histological changes that included the sclerosis of the bile duct surrounded by fibrocytes and lymphocytes infiltration. After treatment with M. oleifera, the liver enzymes and tissue returned to a normal state and showed non-significant (P≤0.05) differences, compared to the control group. According to the results, it can be concluded that the aqueous extract of M. oleifera has a great potential to prevent and improve liver damage of BPA.

	Article				
72	**A Comparative Study of Parasitic Infections in Domestic and Wild Pigeons in Iraq**	Alasadiy, D.K.Y., Mahmood, M.R., Alhasnawi, N.A.	Archives of Razi Institute, 77(2), pp. 709–715	2022	10

Document title	Authors	Source	Year	Citations

Hide abstract View at Publisher Related documents

Parasitic infections in pigeons are very important due to their adaptability to different environmental conditions, as well as their relationship with human society. In this study, 250 samples of domestic and wild pigeons (Columba livia) were collected from different areas in Samawah, Al-Muthanna province, Iraq, from March 2020 to January 2021. Clinical examination of external parasites was conducted by screening fecal samples for intestinal parasitic infections and preparing direct swabs from the beaks. Out of the 250 pigeon samples (125 domestic and 125 wild pigeons), 65 pigeons were found infected (26%), including 40 domestic (32%) and 25 wild pigeons (20%) (P≤0.05). The results showed that these parasitic infections belong to three major groups of bird parasites: 1) Protozoa, such as Eimeria species (spp.) oocyst, Cryptosporidium spp., and Trichomonas gallinae, with prevalence rates of 21 (16.8%), 14 (11.2%), 19 (15.2%), 11(8.8%), 7 (5.6%), and 2 (1.6%), 2) Helminths, such as cestodes (Raillietina tetragona) and nematodes (Ascaridia columbae) with prevalence rates of 5 (4%), 4 (3.2%), 4 (3.2%), and 2 (1.6%), as well as Arthropods, including lice (Menacanthus stramineus) with prevalence rates of 5 (4%) and 3 (2.4%) in domestic and wild pigeons, respectively. Additionally, no significant difference was found between male and female pigeons in their infection rate (P≤0.05). The findings also revealed that the highest percentage of infection in both genders of domestic and wild pigeons was caused by one spp. of parasites (62.5% and 64% in domestic and wild pigeons, respectively), followed by two spp. (24% and 27.5% in domestic and wild pigeons, respectively), and three spp. of parasites (10% and 12% in domestic and wild pigeons, respectively). However, there was no significant difference between domestic and wild pigeons regarding their infections with one, two, or three spp. of parasites (P≤0.05). It is thus concluded that differences in the prevalence of these parasites in different regions are partly due to differences in nutrition, feeding habits, and geographical environment.

		Document title	Authors	Source	Year	Citations
☐	73	Article **Serological Detection of Helicobacter pylori Infection in Pregnant Women Related to ABO Blood Group**	Al-Dorri, Z.R.A., Salih, I.N., Khuder, S.H.	Archives of Razi Institute, 77(2), pp. 591–597	2022	2

Document title	Authors	Source	Year	Citations

Hide abstract View at Publisher Related documents

Helicobacter pylori was known as a pathogen related to peptic ulcers and gastric carcinoma. Some researches confirmed that the infected pregnant women with H. pylori have poor pregnancy outcomes so that its effects extended to other systems other than gastrointestinal tracts. This study aimed to evaluate H. pylori infection in pregnant women who had morning sickness (nausea and vomiting) related to the ABO blood group. In total, 202 pregnant women within the age range of 15-45 years with severe nausea and vomiting attended the outpatient and specialized clinic. The seroprevalence of H. pylori was 62% in pregnant women, especially at the age group of 20-24 years with 32.5% of the cases who had epigastric pain, nausea, vomiting, flatulence, and burning of the stomach, the majority of which related to O+ (33.3%), followed by A+ and B+ (25.39%) blood groups. Most infected pregnant women with H. pylori were during the first (41.26%) and second trimesters (34.12%), especially in multigravida (68.25%) cases. This study found that hyperemesis (severe nausea and vomiting), dyspepsia, and other gastrointestinal symptoms during pregnancy were related to the infection with H. pylori; therefore, it is a risk factor for complications in pregnancy and its poor outcomes, especially in developing countries, such as Iraq. These results can be minimized by improving the socioeconomic and sanitation conditions. H. pylori infection in pregnancy is considered a health problem and should be treated before and during pregnancy. Further investigations are required in this regard and researchers are recommended to conduct studies on the RBC antigens to recognize the pathophysiology related to H. pylori infection.

Article • *Open access*

☐	74	**Effect of adding carrots as feed supplementation on reproductive performance in Awassi ewes**	Dhahir, N.N., Ismaeel, M.A., Al-Doori, Z.T.	Iraqi Journal of Veterinary Sciences , 36(2), pp. 413–417	2022	5

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The present study was designed to estimate the effect of carrots supplementation on reproductive performance in ewes. Thirty Awassi ewes. Ewes were randomly divided into three equal groups, distributed as 10 ewes for each group. First group consider as control, second group feed 400 g carrot/animal daily, third group feed 800 g carrot/animal daily. Each group were synchronized with intra vaginal sponges and injected with 400 IU of eCG at the time of sponge withdrawal. Estrus ewes were conceived naturally with rams and pregnant ewes were followed until parturition. The results of current study demonstrated that G3 had high estrus response and fertility rate 90% compared with G2 and control 80 and 70% respectively. Fecundity rate increased significant in G3 200% compared to G2 and 125 and 100% respectively. Ewes in G3 showed the highest multiple lambing rate 66.67% compared with G2 25% and control 0%. Blood progesterone concentration was high increasing at the 18th day of estrus in the ewes for G3 and G2 compared with control, also, estrogen level at the day of estrus showed high increasing in G3 compared with G2 and control group. We concluded that carrots fed as a supplementation have essential effect on enhancement of reproductive performance in ewes.

Article • *Open access*

	Document title	Authors	Source	Year	Citations
75	**Histopathological finding about different type of tumor that affected skin of sheep**	Al-Sabaawy, H.B., Al-Sultan, A.A.	Iraqi Journal of Veterinary Sciences , 36(1), pp. 139–143	2022	2

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The current study was undertaken to record and describe various neoplasms that affect sheep's skin and to determine the relationship between tumor occurrences, age, and sex of the animals. A total number of 12 sheep were examined for abnormal masses in different skin areas including head, eye, ear, udder, teat, the animals age was ranged between 2-6 years. Three different types of cancer were diagnosed in sheep as squamous cell carcinoma, fibroma and papilloma with incidence rates 41.6, 25.1, 33.3% respectively. Neoplasms were recurrent in females more than males and in old ages more than young animals. It can be concluded that the malignant neoplasm especially squamous cell carcinoma was the predominant tumor found in sheep.

Article • *Open access*

	Document title	Authors	Source	Year	Citations
76	**Immunopathological Responses to the Bovine Mastitis Associated with Staphylococcus Species Infection**	Al-Rasheed, A.A., Ahmed, S.S., Al-Jashamy, K.A., Garba, B.	Iraqi Journal of Veterinary Medicine , 46(2), pp. 7–11	2022	4

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Bovine mastitis is a disease that concerns animals' welfare and increases the economic production losses. Bacterial agents such as Staphylococcus species are the main causative agent of bovine mastitis. This bacterial agent expresses some inflammatory cytokines that might enhance the cell-mediated, which may promote the pathogenesis of mastitis. The objective of the current study was to investigate the bovine innate immune response circulating levels of pro-inflammatory and anti-inflammatory cytokines. A total of 10 mL of milk specimens were collected randomly from 100 clinically mastitic cows, and another 20 clinically healthy cows were considered as a control group for the California Mastitis test. The microbiological cultures of milk specimens were performed. The interleukins (ILs)that involved IL-4, IL-6, and IL-10 were detected using the ELISA test for the evaluation of the pro-inflammatory bovine mastitis pathophysiology. The results of this study showed that Staphylococcus aureus detection was in 31.2% of mastitic milk and 8.7% of non-mastitic milk specimens; and the coagulase-negative Staphylococcus was detected in 14.8% and 18.7% in the mastitic and non-mastitic milk specimens, respectively. The IL-6 level was shown significantly higher ($P<0.05$) in the specimens of mastitic milk (194±12.8 pg/mL) compared to the non-mastitic milk (31±2.9 pg/mL). In conclusion, the elevated level of expression of IL-6 cytokine in the milk of cows with mastitis suggested that IL-6 might be used as a potentially suitable biomarker for early bovine mastitis diagnosis.

Article • *Open access*

	Document title	Authors	Source	Year	Citations
77	**EFFECT OF THE HYDROGEN PEROXIDE AND SALICYLIC ACID ON INDUCTION THE SOD GENE EXPRESSION OF DATE PALM (Phoenix dactylifera L.) AS DEFENSE FACTOR AGAINST SALINITY STRESS | تأثير بيروكسيد الهيدروجين وحامض السالسليك في تحفيز جين لنخيل التمر كعامل محفز لتحمل ظروف الاجهاد الملحي**	Aljassani, I.F., Alqaisi, M.R.M., Al-Ahbabi, A.J.	Iraqi Journal of Agricultural Sciences , 53(5), pp. 1099–1106	2022	2

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This experiment was conducted in order to determine the effect of spraying acid salicylic (SA) at concentrations of 250, 500 mg L-1 and hydrogen peroxide H2O2 at 3% and 6% compared with water as a control treatment on three cultivars of date palm tree (Barhi, Hilali and Majhoul), which are propagated via tissue culture under salt stress conditions, to estimate the gene expression of Superoxide dismutase (SOD), The SA 250 and 500 mg L-1 for Folding values achieved the highest gene expression for the cultivar Barhi and Hilali, which reached 2.549121, 3.363586, 5.098243, and 4.924578, respectively, While the highest gene expression of this enzyme for the Majhoul when treated with 6% hydrogen peroxide, which was recorded at 2.828427.

Article • *Open access*

78	**Mentha piperita Oil Exerts an Antiepileptic Effect in Pilocarpine and Pentylenetetrazol-Induced Seizures in Mice**	Abdulsahib, W.K., Kathem, S.H., Al-Radeef, M.Y., Jasim, L.S.	Veterinary Medicine International , 2022, 4431317	2022	4

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Introduction. Epilepsy is a progressive, chronic neurological disorder characterized by recurrent seizures. Peppermint (Mentha piperita L.) (MP) is one of the most commonly ingested herbal teas or tisanes with a single component. Aim. We aimed to assess the potential antiepileptic and neuroprotective features of MP essential oil (MPO) in pilocarpine (P) and pentylenetetrazol (PTZ) models of epilepsy. Methods. The study used eight groups of mice to assess the anticonvulsant activity of MPO in both the P and PTZ acute models in mice. P (350 mg/kg, i.p.) was given 30 minutes after MPO (1.6, 3.2, and 6.4 ml/kg, i.p.). As a positive control group, diazepam (1 mg/kg, i.p) was used. PTZ (95 mg/kg, i.p.) was given 30 minutes after MPO (6.4 ml/kg, i.p.). The first convulsion's latency time, the number of convulsions, the latency time to death, and the percentage of deaths were calculated in all groups. Results. MPO significantly ($P<0.05$) increases the first convulsion's latency time and the death's latency time. Moreover, the essential oil significantly decreases the number of convulsions and reduces the mortality rate compared to the negative control group. Conclusion. MPO at 3.2 and 6.4 ml/kg doses can reduce the percentage and the number of convulsions and increase the latency time of both the first convulsion and death so that it can be used as a supplement in the treatment of epilepsy.

Article • *Open access*

	Document title	Authors	Source	Year	Citations
79	**MORPHOLOGICAL AND CHEMICAL CHARACTERISTICS OF TWO SPECIES BELONG TO ALYSSEAE AND LEPIDIEAE TRIBES SPREAD IN NORTHERN IRAQ | الخصائص المظهرية والكيميائية ألنواع من عشيرتي Alysseae وLepidieae المنتشرة في شمال العراق**	Al-Abide, N.M.	Iraqi Journal of Agricultural Sciences , 53(4), pp. 911–921	2022	1

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This research was aimed to study three species which are prevalent in northern Iraq: Alyssium strigosum Banks and Sol., Clypeola jonthlaspi L, and Isatis tinctoria L. belonging to the Alysseae and Lepidieae tribes. The general characteristics of the roots, stems, leaves, fruits and seeds are studied and it turned out that and the two species A. strigosum and C. jonthlaspi are similar due to their belonging to the Alysseae tribe, and the species I. tinctoria differs since it belongs to the Lepidieae tribe. In addition, 6 secondary metabolites are diagnosed using the qualitative tests: alkalis, phenols, tannins, flavonoids, glycosides, and sapindales. The presence of terpenoids was not observed, and the alcohol extract is superior to the aqueous extract regarding the accuracy of the results. The phenols are detected using HPLC technology and four compounds are found: Rutin, Quercetin, Kaempferol and P-Coumarin. The importance of studying the chemical content comes from its use in subsequent studies and knowledge of its uses in the medical fields.

Article • *Open access*

80	**EFFECT OF BLENDED TRIPLE SUPERPHOSPHATE WITH UREA ON N, P CONCENTRATIONS IN PLANT AND GROWTH OF BROAD BEAN IN A GYPSIFEROUS SOIL | تأثير خليط السوبرفوسفات الثالثي مع اليوريا في تراكيز النايتروجين والفسفور في النبات ونمو الباقلاءفي تربة جبسية**	Farhan, M.J., Muhawish, N.M.	Iraqi Journal of Agricultural Sciences , 53(4), pp. 931–940	2022	3

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A field experiment was conducted on a gypsiferous sandy clay loam soil to examine the effects of blending Triple superphosphate (TSP) with urea on N, P concentrations in plant and growth parameters of broad bean. The experiment was a factorial randomized complete block design (RCBD) with three replicates. The first factor was type of application as briquettes which include T1 (one layer of TSP between two layers of urea) and T2 (one layer of urea between two layers of TSP), the second factor was application depth (5 and 10 cm D1 and D2), and the third factor was application rate (1.0, 1.25, and 1.50 as much as N and P fertilizer recommended for broad bean, R1, R2 and R3). Broad bean was planted and the following growth parameters were taken: plant height, no. of leaves, plant dry weight, chlorophyll content, leaf area, N and P concentration in plant. Results showed that the following treatments: T1 of blending (briquette no. 1), D1 and R2 were significantly superior over other treatments in all growth parameters and N, P concentration in plant. The triple interaction treatment T1D1R2 was significantly superior over other treatments with values reached 60.99 cm, 442.7 leave plant-1, 20.32 cm2, 63.87 Spad, 5.59 g plant-1, 5.55 %, and 0.27 %, respectively for plant height, no. of leaves plant-1, leaf area, chlorophyll content, plant dry matter, N and P conc. in plant.

Article • *Open access*

	Document title	Authors	Source	Year	Citations
81	**Effect of Labazyme on Growth Performance, Physiological Parameters, and Economic Efficiency of Broiler Chickens**	Abdulwahid, A.S., Mohammed, A.B., Raouf, S.M., Aljumaily, T.K.H.	World's Veterinary Journal , 12(2), pp. 156–163	2022	2

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Enzymes have a significant positive effect on nutrient digestion, feed efficiency, and growth rate of poultry. The current experiment aimed to determine the optimal dosage levels of Labazyme as feed additives. A total of 240 oneday-old broiler chickens (Ross 308) were randomly assigned to four groups with three replicates. The feeding experiment was carried out from hatching to day 42 of age. Three experimental groups contained Labazyme at 0.5, 1, and 1.5 mg/kg of the total diet. The control group received a basal diet. Growth performance, European performance efficiency index (EPEI), production index (PI), biochemical and lipid profiles, as well as antioxidant parameters were then measured. The results showed that chickens fed Labazyme supplementation (1 and 1.5 mg/kg) had a higher growth performance than those in the control group. Nonetheless, there was a significant difference between the Labazyme and the control group in terms of feed intake. In addition, Labazyme groups had a significantly positive effect on broiler economic scores. The EPEI and PI of the Labazyme-fed chickens were both higher than the control. There was a non-significant difference in total protein, albumin, globulin, and uric acid. The serum glucose level of the chickens fed Labazyme (1 and 1.5 mg/kg) was lower, compared to the control group. In contrast, chickens that consumed a diet supplemented with Labazyme 1 and 1.5 mg/kg indicated lower serum cholesterol, triglyceride, low-density lipoprotein, and very-low-density lipoprotein levels in broilers, compared to the control group. Serum high-density lipoprotein levels were improved and more pronounced in chickens fed Labazyme, compared to the control group. In conclusion, the results of the current study indicated that supplementation of Labazyme could help the improvement of growth performance, lipid profile, and profitability of broiler chickens.

Article • *Open access*

82	**Armed conflict and the proliferation of antimicrobial resistance: The situation in war-ravaged Afghanistan**	Ahmadzai, M.A., Shinwari, Q., Al-Rasheed, A.A., Garba, B.	International Journal of One Health , 8(1), pp. 43–47	2022	2

Document title	Authors	Source	Year	Citations

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Antimicrobial resistance (AMR) constitutes a serious impediment to the attainment of the World Health Organization's Sustainable Development Goals, which seek to ensure and promote healthy living among humans and animals. Studies have identified the vulnerability of conflict-affected populations to exposure to antimicrobial-resistant pathogens. Resourcelimited countries like Afghanistan have suffered for long periods from armed conflicts, and this situation is exacerbated by the already poor or dilapidated healthcare delivery services. The country has suffered human and economic losses due to antimicrobial-resistant bacterial infections driven by the prolonged war, as well as a limited number of antimicrobials and frequent under dosage. Most reports point to the overuse of broad-spectrum antibiotics as the main reason for building up resistant strains. There is a need for more efforts toward identifying the major contributors and enlightening the public on the importance of AMR. This review aimed to provide a critical appraisal regarding the current situation of AMR in Afghanistan

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Article • *Open access*

☐ 83 **EFFECT OF SUPPLEMENTARY IRRIGATION SYSTEM ON WHEAT PRODUCTION EFFICIENCY USING A STOCHASTIC FRONTIER ANALYSIS | تأثير انظمة الري التكميلي على كفاءة انتاج القمح باستخدام التحليل الحدودي العشوائي**

Ali, E.H., Baker, Y.T., Al-Douri, B.F.

Iraqi Journal of Agricultural Sciences , 53(2), pp. 353–364

2022

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This study was aimed to director wheat production's technical efficiency grown under two irrigation systems(fixed and pivot sprinkler irrigation systems)using random border analysis.Samples were collected randomly from267farmers from Salah Al-Din Governorate/Iraq.The samples were divided into two groups;187farmers used a pivot sprinkler irrigation system with three categories of possession(80,60and120dunums),while the other group used a fixed sprinkler irrigation system with four categories of possession(40,30,20and10dunums).Transcendent production function was used to study the effect of production factors on wheat yield. The results indicated that the mechanization work and the amount of added irrigation water increased by 1% while the wheat yield increased by0.08and0.15%,respectively.The pivot sprinkler irrigation system's technical efficiency averaged0.86,while the fixed sprinkler irrigation system's efficiency was0.84.The technical efficiency and experience increased with the farmers' experience with supplementary irrigation, the cultivated area and age. On the other hand, technical efficiency and experience decreased with the family's size and wheat cultivating experience. Furthermore, farmers who owned mechanization were more efficient than the lessors. The sprinklers' highest productivity was in the pivot sprinkler irrigation system at120dunums and was 108,930 kg. The highest productivity per water unit was0.86in the fixed sprinkler irrigation system of10 and 40 dunums. The efficiency of water use was 86% when the cultivated area was120dunums with the pivot sprinkler irrigation system and87% at40 dunums with the fixed sprinkler irrigation system.

Article • *Open access*

	Document title	Authors	Source	Year	Citations
84	**Effect of Thymus vulgmus Addition to the Diet of Laying Hens on Egg Production, Egg Quality, Biochemical and Antioxidant Parameters**	Mohammed, A.B., Abdulwahid, A.S., Raouf, S.M.	Advances in Animal and Veterinary Sciences , 10(2), pp. 427–433	2022	9

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This study evaluated the impact of thyme powder supplementation on the hen egg production (HD%), total egg production, egg quality, antioxidant and biochemical parameters of laying hens. One hundred and eighty Hy-line Brown hens, 40 weeks old were randomly divided into 9 groups of 20 hens and subjected to one of the following treatments: T1 (control diet), T2 (5g/kg of thyme), and T3 (10g/kg of thyme). Each treatment was tested using three groups of hens, which were subject to treatments from 40 to 47 weeks of age. The productive metrics were measured on daily and weekly basis in the period from 40 to 47 weeks of age, while the egg quality was measured after 56 days. Hematological, biochemical and antioxidants parameters were also determined at the end of the experiment. The results showed that the egg production and feed conversion ration were significantly improved in both thyme treatments (T2 and T3). Also, the PCV (%) and the WBC count. However, there was no significant difference in the egg quality between the thyme-treated and control hens. The hens on thyme-supplemented diets were found to have lower serum cholesterol concentration than those of the control. Supplementing a laying hen's diet with thyme significantly increased glutathione, while, decreased the malondialdehyde, AST and ALT activity in comparison to the control. Therefore, it can be concluded that thyme additives can be used in laying hens diet to improve egg production, egg quality, antioxidant and biochemical parameters in a dose-dependent manner.

Article

85	**ISOLATION, DIAGNOSIS AND INCIDENCE OF RINGWORM IN CATTLE IN SALAH AL-DIN GOVERNORATE**	Abdullah, T.K., Wadee, S.A., Owain, M.S.	Veterinary Practitioner, 22(2), pp. 62–64	2021	0

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To study ring worm in cattle in Salah El-Din Governorate, 100 samples of skin scales were collected from cows suffering from hair loss and suspected of having ringworm. This study was conducted on cows of different age, breed and climatic seasons to study some of the factors that affect the spread of the disease. The results obtained proved that the prevalence of the disease is greater in animals that are in contact with each other and in fattening animals. The disease also spreads in poorly ventilated places and all ages are susceptible to infection, but animals that are in young age stages are more susceptible to the disease. The infection rate was 73%, and it was found that the highest infection rate was in animals that were less than a year old, where the infection rate was 63%, and the male infection rate was 54.8%, which is higher than the female infection rate by 45.2%, while the highest infection rate was recorded during the winter season in a month January 27.4%. Three species of the genus Trichophyton, Mentagrophytes, have been diagnosed T. rubrum, T. verrucosum, and the rate of isolate T. verrucosum was 68.5%, which is higher than the rest of the species.

Article • *Open access*

	Document title	Authors	Source	Year	Citations
86	**Molecular detection of rfbO157, shiga toxins and hemolysin genes for Escherichia coli O157: H7 from canine feces in Tikrit and Mosul cities, Iraq**	Abdulrazzaq, K.M., Oain, M.S., Majeed, H.M., Alhyani, O.H.	Iraqi Journal of Veterinary Sciences , 35(2), pp. 325–329	2021	9

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Escherichia coli O157:H7 is considered as an important pathogen of diarrhea in adult dogs and puppies because it contains virulence genes. The study objective was to the molecular detection of the rfbO157 encoding the O-antigen specific for E. coli O157: H7,shiga toxins and hemolysin genes of E.coli O157:H7 in feces of dogs that collected from different regions in Tikrit and Mosul cities, Iraq. One hundred fecal swabs were collected from pet and K9 dogs including (72 dogs with diarrhea, and 28 without diarrhea). All the Collected swabs were cultured in the nutrient and MacConkey agars, Then the suspected colonies were cultured in the EMB agar. Metallic sheen colonies were cultured by using the chrome agar. All bacteriological identified isolates were enrolled by using the polymerase chain reaction (PCR) technique. The results of this study showed that 7(9.7%) of 72 dogs suffered from diarrhea were positive for E. coli O157:H7 that contained the rfbO157 gene (n= 6), carry stx1 gene (n= 3), carry stx2 gene (n= 3), and hlyA gene (n= 1). On the other hand, 2 (7.1%) of 28 dogs without diarrhea were positive for E. coli O157:H7 that contained the rfbO157 gene (n= 1), stx2 gene (n= 1), and hlyA gene (n= 1). In conclusion, dogs can be a significant reservoir for pathogenic E. coli O157:H7, particularly dogs with diarrhea.

Article • *Open access*

87	**Evaluation the safety and synergistic effect of $NiFe_2O_4$ nanoparticles with antibiotic against Pseudomonas aeruginosa**	Majed, H.M., Khalef, H.Y., Awadh, H.A., ... Jafar, N.A., Hadi, K.A.	Iraqi Journal of Veterinary Sciences , 35(1), pp. 71–77	2021	10

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The antimicrobial resistance currently impedes and threatens the future of effective prevention and treatment of the continually expanding range of infections caused by bacteria. This study aimed to identify the bacterial causes the wound infection among animals and using the antibiotic/nanoparticles mixture as a new attempt for the treatment the wound infection induced in rats. For this purpose, 112 swabs wound infection cases in the different animal types (36 sheep, 21 goats, 12 cows, 4 horses, 8 dogs, 9 rabbits, 7 genies pigs and 15 rats) were studied in the for bacterial isolation. The Pseudomonas aeruginosa was tested for its sensitivity to the antibiotics and the nanoparticles (CoFe2O4 and NiFe2O4) in vitro by using the MIC method. Also the wound infection was induced in the rats and the effect of nanoparticles/antibiotics mixture were tested in vivo. The results showed that P. aeruginosa was the predominant bacterial type that the caused wound infection. The minimum inhibitor concentration of NiFe2O4 and CoFe2O4 nanoparticles were 32 µg /ml and 16 µg /ml respectively. A clear synergistic effect of antibiotic/ nanoparticles as antibacterial were noticed which appear as a decrease in MIC and increase of the inhibitory diameter zone. According to the result of Random Amplification of Polymorphic DNA test, the nanoparticles effects on genetic material of P. aeruginosa observed as an appearance/disappearance of bands, increase in thickness and clarity of the bands.

	Document title	Authors	Source	Year	Citations
	Article				
88	**Enzymatic Effectiveness of Alcoholic and Aqueous Extract of Salvia Officinalis in Mice Poisoned with Tetrachloride**	Kadhim, R., Ali, N.H., Aziz Ibrahim, D.	Archives of Razi Institute, 76(6), pp. 1777–1786	2021	0

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Regarding the antioxidant, anti-inflammatory, and antibacterial effects of Salvia officnalis (S. officinalis) extracts and the use of medicinal herbs as an alternative to chemical drugs, this study aimed to evaluate the enzymatic changes and reduction of hepatocyte damage in mice poisoned with carbon tetrachloride (CCl4) after treatment with aqueous and alcoholic extract of Salvia officnalis. A total of 40 adult male mice were divided into eight groups including six experimental, one negative, and one positive control group, which were exposed to CCl4 at the concentration of 2.3 mg/kg. The active compounds in the alcoholic and aqueous extracts of S. officinalis were obtained using high-performance liquid chromatography. Subsequently, S. officinalis extract in 100, 200, and 300 mg /kg doses were fed orally to mice for six days. The enzymes (GST, ALP, ALT, AST, and MDA) were determined in mice serum. The study results showed that enzyme activity was significantly decreased in the group treated with S. officinalis extract, and the concentration of 300mg/kg proved to be most effective. In addition, it was indicated that the alcoholic extract had a higher effect than the aqueous extract, which might be due to the greater amount of active compounds in the alcoholic extract. The improving effects of S. officinalis can be attributed to the bioactive components with antioxidant properties that inhibit the damaging effects of free radicals, chemical drugs, and tissue damage.

	Article				
89	**Association between bovine gdf9 snps and calving rate (superovulation) in holstein-friesian cows**	Rasheed, S.T., Younis, L.S., Abbud, Q.M.	Archives of Razi Institute, 76(4), pp. 1035–1045	2021	2

	Document title	Authors	Source	Year	Citations

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The present study aimed to assess the relationship of Growth Differentiation Factor 9 (GDF9) genotypes with calving rate, Follicle-stimulating hormone (FSH), and Estradiol (E2) in the Iraqi Holstein-Friesian breed. A number of 15 blood samples were collected from a mother of dizygotic twin birth (DZTB) (with high calving rate records), and another blood sample was collected from 15 single birth (SB) cows. The DNA was extracted and six primers were designed for PCR and sequencing analysis. The FSH and E2 levels were tested through the estrus phase for the two groups (n=10 in each group). The sequence evaluation revealed the presence of two single nucleotide polymorphisms (SNPs) in exon II: A (1109) T and G (1133) A. The genotypic frequency for mutant genotypes was higher significantly (P<0.01) in DZTB cows (with calving rate), as compared to wild genotypes at the same loci. On the other hand, the wild genotypes recorded a significant increment (P<0.01) for SB cows, when compared to mutant genotypes in the same loci. Moreover, a significant rise (P<0.05) was reported in E2 and FSH levels for DZTB cows and mutant genotypes (P<0.01) against SB cows and wild genotypes in 0 and 24 h of estrus phase, respectively. Furthermore, non-significant differences were recorded in E2 concentration among the same genotypes at the same period. In conclusion, the GDF9 exon II SNPs increased the calving rate in Holstein-Friesian cows. The blood FSH and E2 concentrations were higher in the DZTB cows and control the superovulation. Finally, these SNPs can be regarded as markers to accelerate the breeding programs and used in embryo transfer and in vitro embryo production for Iraqi Holstein-Friesian cow breed.

		Document title	Authors	Source	Year	Citations
☐	90	Article **Physiological and histological changes in pancreatic gland associated with ageing in local rabbits in Iraq**	Rasheed, K., Thamer, I., Hussine, F.A., Ibraheem, A.	Archives of Razi Institute, 76(4), pp. 855–862	2021	0

Document title	Authors	Source	Year	Citations

Hide abstract View at Publisher Related documents

The pancreas is a pear-shaped flat organ resembling the letter L, and yellowish to pink in color. This organ is of medical significance since it is associated with two life-threatening diseases including diabetes mellitus and pancreatic cancer. This study was conducted on male rabbits which were assigned into 3 age groups (6-month-old, 1-year-old, and 3-year-old rabbits). Physiological and histological changes of the pancreas were studied in the adopted age groups. The physiological aspect and the histological structure of the pancreas were also studied by the analysis of the level of pancreatic gland hormones and hormonal changes. Based on the results, there were significant differences in the concentration of pancreatic gland hormones. Insulin level in the second study group was more than that in the first and third groups, while the highest concentration of blood sugar (glucose) was observed in the third group, compared to the first and second. Although the basic structure of the pancreas was similar in all samples, changes were observed in the tissue structure of the pancreas throughout the process of aging. By the increase of age (from 1 to 3 years old), Langerhans islets increased in size, contained alpha and beta cells that were surrounded by a loose connective tissue in the third stage. Moreover, no significant difference was observed in the diameters of cells that produced enzymes at all stages of life. Physiological and histological changes indicated that age plays a role in the function and structure of the pancreas gland during different stages of life. In addition, this study indicated that the hormonal variability of the pancreas is closely related to the histological composition of gland components. Therefore, further studies on the role of factors, such as gender, different breeds, or environmental conditions seem to be necessary and may provide more information on factors that may affect the effectiveness and activity of the pancreas gland.

		Document title	Authors	Source	Year	Citations
☐	91	Article **Effect of microbiota in the development of breast cancer**	Saud Hussein, A., Ibraheem Salih, N., Hashim Saadoon, I.	Archives of Razi Institute, 76(4), pp. 751–758	2021	12

Document title	Authors	Source	Year	Citations

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Breast cancer is the most frequent cancer among women and causes the greatest number of cancer-related death among women all over the world. It approximately accounts for 15% of all cancer death. The human microbiota is the term applied to the aggregate of microbes that live in different habitats of living organisms 'bodies, including the gut, skin, vagina, and mouth, as well as nose, conjunctiva, pharynx, and urethra, among others. Increasing evidence is pointing to the role of the microbiome in the occurrence and development of a variety of cancers. Intestinal microbiome imbalance is related to the occurrence of gastrointestinal tumors, such as esophageal, gastric, colorectal, and gallbladder cancer. The present study aimed to identify the role of microbiota in the development of breast cancer. The women with breast cancer (n=130) in this study were in the age range of 25-75 years. The study was conducted in Kirkuk city of Iraq from September 10, 2019, to March 15, 2020. The control group included 20 women diagnosed with benign breast lesions in the age range 25-75 years, who matched the women in the patient group. Blood samples and breast tissue samples were taken from patients with breast cancer and benign breast lesions. Blood samples were examined through immunological methods, enzyme-linked immunosorbent assay (ELISA) was adopted for the detection of interleukin-19 (IL-19). Breast tissue samples were taken from breast cancer and benign breast lesions patients to isolate and identify bacteria. Based on the obtained results, only 6 out of 30 (20%) cultured breast tissue samples from women with breast cancer showed bacterial growth. In total, 4 (67%) and 2(33%) of these 6 positive cultures were Escherichia coli was and Staphylococcus aureus, respectively, and this relation was statistically significant. However, no bacterial growth was observed on the cultured breast tissue samples taken from women with benign breast lesions. Moreover, the difference between women with a positive and negative result of bacterial culture and stages of breast cancer was statistically non-significant. It is worth mentioning that 50 % of women with breast cancer and bacterial growth were within the age range of 40-49 year. The present study revealed that the difference between women with breast cancer and those with benign breast lesions was statistically highly significant according to the place of residence. In addition, the mean level of IL-19 among women with breast cancer was lower than that in women with benign breast lesions, and this relation was statistically highly significant.

Article • *Open access*

	Document title	Authors	Source	Year	Citations
☐ 92	**Effect of Folic Acid on Some Biochemical Parameters in Female Rabbits Treated Experimentally with Methotrexate**	Hadi, K.A., Jawad, A.S., Shaker, S.F., Azeez, A.A.	Egyptian Journal of Veterinary Science(Egypt) , 52, pp. 29–34	2021	0

	Document title	Authors	Source	Year	Citations

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The present study was carried out to investigate the effect of folic acid (FA) on the some biochemical parameters of female rabbit's treated and non-treated with methotrexate (MTX). Twenty female rabbits were divided in to four groups,control group 5 rabbits were received distilled water, (FA) group rabbits were received folic acid at 0.07mg/kg body weight orally, Methotrexate group: 5 rabbits were received methtrexate (0.03 mg/kg body weight orally) three times a week and (FA) with (MTX) group: 5 rabbits were received folic acid (0.07 mg/kg body weight orally) daily and (MTX) (0.03mg/kg body weight orally) three times a week. The drugs were given by intubation. The experiment was last for 9 weeks. Blood sample were collected after nine weeks of the experiment to study the following biochemical parametersbilirubin in serum,unbound Iron Binding Capacity (UIBC), Total Iron Binding Capacity (µg/dl), Total Serum Iron and Ferritinconcentration in serum. The results of MTX group reveal high significant decrease (P≥0.05) bilirubin conc. At the same time there is a significant increase in total SI, TIBC, UIBC in this group. The group of animals received FA with MTX showed a good prognosis with health improvement characterized by high significant changes in all studied parameters to return back to their normal values.It was concluded that (FA) is administration with MTX very important to correct these changes and the animals return to normal conditions. More work is needed to study the effects of these drugs on other systems in the body.

Article • *Open access*

☐ 93	**Effect of Systemic Treatment by Nanoparticles on The inferior Alveolar Nerve Regeneration and Brain after Crush Injury in Rabbit.**	Hameed, M.A., Azawi, N.A., Hellal, M.M.	Egyptian Journal of Veterinary Science(Egypt) , 52, pp. 69–75	2021	0

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AXONAL accident and regeneration peripheral of nerve the nerve injury. is the Zinc important oxide have target many to functional properties recovery like antimicrobial after the activity, osteogenesis and angiogenesis, and have cytotoxic in different tissue in high dose. The effects on the nerve tissues may enhance functional recovery after peripheral nerve injury. The aim of the study was to evaluate the therapeutic effects of systemic ZnO NPs following inferior alveolar nerve (IAN) crush injury. Twelve rabbits were divided two groups six rabbits in the every group treated and control, all the animal were have the injury in left side of the face following the nerve crush injuries of the IAN, the treated group receive daily intramuscularly injections of 20 mg/kg 1 ZnO NPs. Fourteen days after induction of nerve injuries, ZnO NPs was injected over the mental foramen for the evaluation of neuronal survival. At the end of the 2 week period, histologic examination of IAN samples were performed. The microscopic evaluation showed the ability of ZnO NP to enhance the nerve regeneration in the peripheral nerve and the high dose effect to the brain tissue.

Article • *Open access*

☐ 94	**Comparative Study of Anti-staphylococcus aureus Effect of Chlorhexidine and Calcium Hydroxide in Dentine**	Ahmed, S.S., Alrasheed, A.A., Khalaf, H.Y.	Egyptian Journal of Veterinary Science(Egypt) , 52, pp. 15–19	2021	0

Document title	Authors	Source	Year	Citations

Hide abstract View at Publisher Related documents

THIS chlorhexidine study was and conducted calcium hydroxide to investigate on staphylococcus the effect aureus of different bacteria concentrations isolated from the of roots of the teeth of patients. As the bacteria were isolated from one of the patients arriving at the Teaching Hospital of the Faculty of Dentistry / University of Tikrit by taking a swab from the ends of the tooth root, and it was implanted and grown in media prepared for this purpose in the microbiology laboratory of the College of Veterinary Medicine / University of Tikrit. Graduated concentrations were used respectively from the chemical solutions of chlorhexidine and calcium hydroxide (0.5%, 1%, 2%, 4%). Minimum Inhibitory (MIC) and Minimum Bactericidal Concentration (MBC) were calculated for the samples and it was found through the study that the concentration 2% of chlorhexidine compound after 36 hours caused inhibition of bacterial growth, as the tubes appeared transparent. The calcium hydroxide compound was found to cause inhibition of bacterial growth, 48 hours after the start of the treatment at a concentration of 4%. We conclude from these results and the variation that occurred in the times of inhibition and the concentration of the inhibitory substance that chlorhexidine is more effective than calcium hydroxide in its use as a mouthwash and treatment of bacteria present in the roots of the teeth.

Article • *Open access*

95 **Immunohistochemical and pathological changes in BALB/c mice immunized with whole sonicated Listeria monocytogenes antigens and the effect of probiotics**

Shihab, T.J., Ibrahim, Z.I.

Iraqi Journal of Veterinary Sciences , 35, pp. 79–85

2021

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The current study was undertaken to investigate the role of macrophages as a cellular immune function against immunization with whole sonicated Listeria monocytogenes antigens (WSLMAgs) and the effect of probiotics. A preparation of WSLMAgs containing whole L. monocytogenes cell, after two subcutaneous immunization of BALB/c mice with 0.5ml WSLMAgs 0.5 mg/ml at an interval of two weeks. The bacterial identification was conducted by a conventional culture method using Listeria selective media PALCAM and confirmed by Polymerase Chain Reaction (PCR), As well as, the immunohistochemical and pathological change of it was studied in vivo by inoculating mice with pre-challenge WSLMAgs and post-challenge with virulent L. monocytogenes 1x108 CFU/mL. The results revealed the cellular immune function against pre-and post-immunization in spleen organ via lymphocytic hyperplasia in white pulp and coalescence of lymphoid follicles and marker F4/80+ show the immune-positive cells in aggregation adjacent to lymphoid follicle or focal aggregation of macrophages between follicles. In conclusion, the effectiveness of sonicated L. monocytogenes pre and post-immunization then challenge with virulent L. monocytogenes in the induction of cellular immune response, might serve as an immunization platform for applicants.

Article

	Document title	Authors	Source	Year	Citations
96	**Detection of anaemia caused by parasitic infections and estimation of haematological variables and blood picture in sheep**	Abdulazeez, S.S., Salih, H.H., Oubied, W.S., Jassim, N.A., Hadi, K.A.	Veterinary Practitioner, 22(1), pp. 100–104	2021	0

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This study was conducted to detect anemia caused by parasitic infection, by ways of determining changes in some blood values, and blood picture to evaluate the histological change. Blood samples were collected from Awassi sheep (150 animals as anaemic group and 75 as control group), in Salahudeen city. The samples were collected with ages varying from (1-5 years). The results showed a significant reduce in (PCV, (Hb), MCV, MCH, and MCHC). The results of the current study showed the presence of parasites of the following types Babesia, Thileria, Anaplasma, which caused anaemia of sheep's.

Article • *Open access*

97	**Ameliorative role of arabic gum against nephrotoxicity induced by ciprofloxacin in rats**	Abdullah, A.D., Ahmed, M.A.	Iraqi Journal of Veterinary Sciences , 35(4), pp. 789–798	2021	1

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Medicinal plants have gained wide popularity at present time due the side effects of chemical drugs on the body in general and on the kidneys in particular. This study aimed to explore the protective effect of Arabic gum (AG) against nephrotoxicity of ciprofloxacin. Twenty-four rats divided into four groups administrated for 14 days as following: control group administrated orally with distilled water 1 ml/kg, ciprofloxacin group 750 mg/kg, orally. Third group administrated with AG solution 15% and fourth group administrated with ciprofloxacin 750 mg/kg combined with AG 15% respectively. Results demonstrated the effect of Ciprofloxacin in significant increased levels of nephrotoxicity biomarkers such as blood urea nitrogen, creatinine, uric acid, MDA, and a significant decreased urine flow rate, creatinine clearance and degeneration in renal tissue via attenuate antioxidant system tissue. The combined administration of AG with Ciprofloxacin showed the ameliorative role of AG on nephrotoxicity biomarkers, nephron function, antioxidant availability and protected renal tissue from damage. We concluded that AG in concentration 15% has a protective role against renal toxicity exposed by ciprofloxacin in rats.

Article • *Open access*

98	**The role of Helianthus tuberosus powder in healing of full-thickness wounds in mice**	Atiyah, A.G., AL-Falahi, N.H.R.	Veterinary World, 14(5), pp. 1290–1298	2021	5

Document title	Authors	Source	Year	Citations

Hide abstract View at Publisher Related documents

Background and Aim: Recently, many medicinal plants have received considerable attention in the medical field because of their role in the wound healing potential. This study aimed to determine the effectiveness of H. tuberosus powder on the healing pathway of full-thickness cutaneous wounds in a mouse model. Materials and Methods: H. tuberosus powder was prepared by a freeze-drying process using a lyophilizer and its active ingredients were evaluated by high-performance liquid chromatography (HPLC), while its antibacterial properties were evaluated by agar well diffusion assay. The percentage wound contraction was also assessed. Thirty mice were used, which were divided equally into two groups, a control group and a treated group. A full-thickness wound, 1 cm×1 cm in size, was established on the dorsal aspect of the thoracolumbar region, into which H. tuberosus powder was topically applied in the treated group. In contrast, the control group was left without any treatment. The animals were euthanized on days 7, 14, and 21 after wounding for histopathological study. Results: The agar well diffusion method indicated the antibacterial activity of H. tuberosus, while the HPLC results indicated that the active ingredients of H. tuberosus powder mainly consisted of three major kinds of fatty acid. In addition, the macroscopic results of wound contraction rate and the histopathological outcomes of the healing process were significantly ($p \leq 0.05$) enhanced in the treated group compared with those in the control group. Conclusion: H. tuberosus powder acts as an antibacterial agent with the ability to enhance the wound healing process.

Article • *Open access*

☐	99	**Pathological, molecular and phylogenic study of fowlpox virus in domesticated chickens of Tikrit City, Iraq | Estudo patológico, molecular e filogenético do vírus da varíola aviária em frangos de corte domesticados da cidade de Tikrit, Iraque**	Hasan, I.I., Rasheed, S.T., Shakor, M.K.	Brazilian Journal of Veterinary Research and Animal Science , 58, e176255	2021	3

Document title	Authors	Source	Year	Citations

Hide abstract View at Publisher Related documents

Fowlpox virus (FPV) is one of the viruses affecting chickens worldwide, causing pathological and economic losses in the poultry industry. Viral lesions are easily recognizable by the eye and usually appear in the featherless areas, especially the head. Moreover, the virus could lead to blindness and mortality in some cases. This study diagnosed the suspected fowlpox cases, identified and classified the causative agent. We also analyzed the differences and similarities of closely related viruses at the neighboring and regional countries. Fifty samples were collected from three locations of Tikrit city from the domesticated chickens, which showed cutaneous lesions. Virus DNA was extracted directly from tissue samples before the nested PCR technique was performed. The virion core protein (P4b) gene is partially sequenced and analyzed with routine histological sectioning. Results showed that the virus causes pock lesions of dermal hyperplasia and hyperkeratosis. Hyperplasia and congestion of the chorioallantoic membrane were also recorded. The study also showed that the DNA of FPV could be extracted directly from animal tissue without further purification. The sequence analysis showed that the FPV was confirmed in all samples clustered in clade A identical with Iranian and Egyptian isolates. In conclusion, this study approved that the virus belongs to the classical dermal type of poxviruses and the short genetic distances between viruses related to closely neighboring countries. We also concluded that the conservative P4b gene included mutation sites that make this gene practical for diagnosing the virus and phylogenetic analysis.

Article • *Open access*

☐ 100	**Haematological And Blood Biochemical Parameters Of Pre - And Post Lambing Periods For Iraqi Nuaemie Ewes | المعايير الدمية والكيموحيوية للدم لمدة قبل وبعد الولادة في النعاج النعيمية الع ا رقية**	Awad, A.H., Ismaeel, M.A., AL-doori, Z.T.	Iraqi Journal of Agricultural Sciences , 52(4), pp. 941–948	2021	4

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The present study designed to investigate the hematological and blood biochemical changes in pre and post lambing periods in Iraqi Nuaemie ewes. Ten Nuaemie ewes weighed 35-45 kg and aged between 2-3 years were reared in animal's house of Veterinary College / Tikrit University from October-2018 to March-2019, Ten ml of blood samples were collected from each animal during the periods of last gestation month, at lambing and 2 weeks thereafter, Two and half ml of blood samples were collected in EDTA-containing tubes to determine the hematological parameters and the remaining was used to separate serum and stored at -20 °c for blood biochemical assessment. The results revealed decreased in total red blood cells, haemoglobin and packed cell volume during post lambing period. The total white blood cells count and neutrophils were decreased during the post-partum period, while the lymphocyte was decreased at the day of lambing (50±5.8%). The biochemical parameters exhibited lesser total protein concentrations at the day of lambing (6.5± 1.85 g/dl) while greater glucose, cholesterol and triglyceride concentrations during post-partum period. The concentration of urea and creatinine increased during the pre-partum period whereas, LDL and HDL concentrations increased in post-lambing period. The minerals concentrations revealed lesser concentrations of Zink and iron during the post-partum period while, copper concentration was greater during similar period. In conclusion, the physiological status of animals have clearly effects on the haematological and biochemical parameters in Iraqi Nuaemie ewes.

Article • *Open access*

	Document title	Authors	Source	Year	Citations
101	**ENVIRONMENT SENSITIVITY MAPS OF LAND DEGRADATION AND DESRTIFICATION USING MEDULAS MODEL AND REMOTE SENSING IN SHIRQAT CITY/IRAQ**	Khalaf, A.A., Hussien, A.S.	Iraqi Journal of Agricultural Sciences , 52(3), pp. 697–711	2021	9

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This research of aims to study environment sensitivity of desertification and land degradation using MEDULAS project and remote sensing in AL-Shirqat City/Salahadin/Iraq. A 10 soil pedons were chosen from study area depending on difference in soil preperties, landuse and causes of desertification and degradation as (Salinity, Erosion, Gypsum and vegetation cover). Soil profile description, soil samples and GPS were conducted. The physical (texture) and chemical (CaCO3, CaSO4.2H2O, O.M, EC and pH) properties were determined. The Soil were classified as Torrifluvents in the (P1, P2, P3), Torripsamments in the (P5 and P7), Calcigypsids in the (P6, P8 and P10) and Calcids in the P4. The landsat 8 image at 20sep. 2019 and 19 sep. 2013 were aquired in the spectral indices calculate and spatial maps by using ERDAS 15 and GIS 10.2. The result show contrast in soil propreties as sand, clay, soil gypsum, CaCO3, OM and EC that reflect on Soil Quality Index (SQI) which were (60)% poor quality and (40)% moderate quality degradation. While (19.10) % that moderate quality and 80.90% that poor quality for Vegetation Quality Index. The results show that 0.1% of the study area is classified as C1; 25.35% as C2; 74.55% of the areas as C3. The spectral indices as LAI, SI5, OSAVI were approporiate for monitor of desertification and degradation in study area. Add, spatial change in the spectral indices as NDVI and LAI. The results shown that MEDALUS model is a important model in the areas disposed to desertification and degradation.

Article • *Open access*

102	**Detection of Listeria Monocytogenes in Raw Milk and Aborted Cow Cases At Salahudeen Province**	Noomy, B.S., Anwar, S.A., Salih, S.M.	Iraqi Journal of Agricultural Sciences , 52(2), pp. 315–321	2021	7

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Listeria monocytogenes is a pathogen that causes infectious diseases in animals. It is one of the causal agents causing abortion in infected cows. This study was conducted to detect listeria monocytogenes in aborted cows. Also to estimate the role of the milk in the distribution of the pathogen by detecting the bacteria in milk of aborted cows as well as in raw milk from the market of Salahudeen province. The study includes 46 aborted cows from which 46 milk samples were taken to detect the causative agents. Also 38 vaginal swabs were taken from the same aborted cows and 8 samples from fetuses. 30 raw milk samples were also taken from market at Salahudeen province. The results showed that Listeria monocytogenes were detected in 5 (13.1%) of vaginal swabs, 2 (25%) of aborted fetuses, 13 (28.26%) in milks from aborted cows, and 9 (30%) of raw milks. The isolated pathogens were screened for the presence of 3 virulence factors; InlJ, InlA, and HIY. The results showed that theses virulence genes were found in the majority of the isolates and the isolation rate ranged between 75%-100%. The study concluded that milk is one of the main sources for the pathogen spreads to other animals.

	Document title	Authors	Source	Year	Citations
	Article • *Open access*				
103	**Prevalence and antimicrobial susceptibility profiling of salmonella isolated from poultry products sold in Sokoto metropolis, Nigeria..**	Ibrahimmusawa, A., Bashiru, G., Al-Rasheed, A., ... Muhammad, N., Umar, M.	Journal of Animal Health and Production , 9(2), pp. 148–155	2021	8

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The emergence of multidrug-resistant Salmonella in poultry meat and products presents a serious global public health problem. A cross-sectional study was conducted to investigate the isolation rate of Salmonella species in eggs and chicken meat randomly sampled from some selected retail outlets in Sokoto metropolis, and to determine the antimicrobial resistance pattern of the isolates. Bacteriological culture and biochemical characterization, followed by the antimicrobial susceptibility testing using the Kirby Bauer disk diffusion method were employed. Out of the 300 samples comprising 150 eggs, and 150 chicken meat samples analyzed, 20 (13.3 %) were positive for Salmonella among chicken meat, while 11 (7.33 %) were positive among the egg samples. Based on the sampling locations, the frequency of isolation of Salmonella was highest in Sokoto south and Wamakko areas with 17.5 % each for the chicken meat, while Sokoto south area with 10.0 % had the highest among the egg samples. The results of the antimicrobial susceptibility test showed 15 isolates (75 %) for chicken meat being 93.3 %, 86.7 %, 60.0 % and 60.0 % resistant to penicillin, oxytetracycline, Sulphamethoxazole/trimethoprim, and erythromycin respectively, while all 11 (100 %) isolates from egg swab culture showed resistance to one or more of the antimicrobials tested. However, a high proportion of isolates were susceptible to neomycin (93.3 %). The Salmonella isolates also exhibited multidrug-resistance against four of the antimicrobials tested that included erythromycins, Sulphamethoxazole/trimethoprim, penicillin, and oxytetracycline. It could be suggested that the rational use of antibiotics needs to be adopted in commercial poultry farming system of Sokoto to curtail the spread of these drug-resistant pathogens and its concomitant hazard to human health.

	Article • *Open access*				
104	**THE ROLE OF LACTOBACILLUS CASEI AND LACTOBACILLUS ACIDOPHILLUS TO DECREASE THE BIOLOGICAL EFFECTS OF POTASSIUM BROMATE IN RATS**	Mohammed, M.J., Mahdi, M.S., Jameel, A.H., Thalj, K.M.	Iraqi Journal of Agricultural Sciences , 52(1), pp. 70–78	2021	3

Document title	Authors	Source	Year	Citations

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This study was conducted to investigate the ameliorative effect of lactic acid bacteria Lactobacillus casei and Lactobacillus acidophilus against Potassium bromate (25, 50) mg / kg toxicity by some physiological indicators in 35 of female rats after 21 days. The animals were divided into 7 groups within each group 5 animals weighted 140 – 155 g. The results showed a significant decrease (P<0.05) in value of Red blood cells (RBC), hemoglobin (Hb), White blood cells (WBC), Lymphocyte (LYM) and Platelets (PLT), While increasing the values of Granules (GRN). Also found that the addition of Potassium bromate Potassium bromate led to increase in cholesterol, triglyceride (TG), Low Density Lipoprotein (LDL) and blood glucose, while decreased the values of High Density Lipoprotein (HDL) for rats groups with increasing the concentration of Potassium bromate compared with control group. The addition of two types of lactic acid bacteria L. casei and L. acidophilus with Potassium bromate showed a positive effect to reducing the negative effect of Potassium bromate on blood and lipid profile parameters compared with the control group and Potassium bromate group. It is concluded that the lactic acid bacteria has protective effects and reduces the effects that Potassium bromate.

Article • *Open access*

☐ 105 **Effects of COQ10 with vitamin E supplementation on semen quality and seminal plasma parameters of broiler breeder males**

Raouf, S.M., Taha, A.T.

Iraqi Journal of Veterinary Sciences , 35(1), pp. 65–70

2021

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This study aimed at detecting the effects of COQ10 with and without vitamin E on some semen characteristics of the broiler breeder males. Twenty-five males at 43weeks of age divided into five categories of treatment with five replicates. The first treatment (control group) included drenching with corn oil capsules only. The second and fourth treatments were about drenching with capsules containing the COQ10 enzyme at a concentration of 5 mg / male / day with and without10 mg of vitamin E whereas the third and fifth treatments included drenching with capsules containing the Q10 enzyme at a concentration of 10 mg / male / day with and without 10 mg of vitamin E. This whole scheme of treatments was to study their effects on certain semen and seminal plasma properties. The results showed a significant increase (P<0.05) in the ejaculation volume, both individual and mass motility in addition to sperm concentration, all accrediting the fifth treatment. Furthermore, the results clear a significant decrease in the percentage of dead and abnormal sperms. The COQ10 with and without vitamin E led to improved semen quality marking a reduction in AST and ALT, glucose concentration and total protein with improved antioxidant status referring to a high level of GSH and low MDA. We conclude from this study that COQ10 with and without vitamin E has the ability to improve the semen characteristics of age-old broiler breeder males and can improve the status of antioxidants in semen.

Article • *Open access*

☐ 106 **Physiological effects of lactic acid bacteria against melamine induced toxicity in female albino rats**

Jameel, A.H., Mohammed, M.J., Mahdi, M.S., Thalj, K.M.

Iraqi Journal of Veterinary Sciences , 35(1), pp. 1–7

2021

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	Document title	Authors	Source	Year	Citations

Hide abstract | View at Publisher | Related documents

The aim of this study was to investigate the ameliorative effect of two type of lactic acid bacteria Lactobacillus casei and Lactobacillus acidophilus against melamine toxicity by some physiological indicators in mature female rats after 21 days. In this study using 35 of female mature rats and divided randomly into seven groups each group contain five animals. The results showed that melamine caused a significant decrease in the organs weights liver and spleen and increase in kidney weight with increase of melamine concentration. Also showed to decrease in value of hemoglobin, red blood cells, white blood cells, lymphocyte and platelets, while the values of granules were increasing with increase of melamine concentration as compared with control group. Also found that the addition of melamine led to increase in cholesterol, low density lipoproteins and blood glucose, while the values of triglyceride and high density lipoproteins was decreased with increase of melamine concentration. The addition of two types of lactic acid bacteria L. casei and L. acidophilus led to decreasing the negative effect of melamine on the values of all the parameters determined.

Article

☐ 107 **An evaluation of a current recognition medium for diagnosis of s. Aureus**

Hasan, M.S., Owain, M.S., Atiyah, A.G.

Veterinary Practitioner, 21(2), pp. 455–456

2020

0

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Staphylococcus aureus is a significant pathogen which is life-threatening in human and animals. This study was conducted to assess the newly prepared medium to identify S. aureus. Three isolates of S. aureus and 3 isolates of coagulase-negative staphylococci (CNS) were used in this study. The media contains agar, maltose, peptone water, and bromocresol purple as a pH indicator. The results showed yellow colonies of S. aureus with a zone of inhibition and white to purple colonies of CNS without inhibition zone. In conclusion, this current medium can be used to identify S. aureus quickly.

Article

☐ 108 **Study the effect of avian eggshell hydroxyapatite powder on bone gaps healing in rabbits**

Atiyah, A.G., Al-Falahi, N.H.R., Hasan, M.S., Owain, M.S.

Veterinary Practitioner, 21(2), pp. 429–434

2020

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	Document title	Authors	Source	Year	Citations

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Current study was planned to evaluate effects of eggshell-derived hydroxyapatite (eHA) on healing of radius bone gap in rabbits. Hydroxyapatite was prepared previously from avian eggshell using hydrothermal method and applied to fill an experimentally induced (1 cm) gap at the mid shaft of the radius bone reaching marrow cavity in fifteen male rabbits using left forelimbs as a treated group, while in the right forelimbs the induced bone gaps left without additives and considered as a control group. The clinical, macroscopical, radiological and histopathological parameters indicated a significantly differences in bone growth and complete bridging the bone gaps between treated and control groups at intervals (4, 8 and 12) weeks post operation.In addition to well incorporation of eHA powder with the bone gap in treated groups. In conclusion avian eHA powder considered as a good biocompatible graft material to repair a critical bone gap in rabbit model.

Article

☐ 109 **Ovine´s kidney lesions, a pathological study in tikrit city** Al-Sabaawy, H.B., Abdulla, S.A. Veterinary Practitioner, 21(2), pp. 419–422 2020 0

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The current study included the collectionof 238 samples of kidneys from slaughtered sheep from butchers and Meat retail market of Tikrit city during four-month period of 2019. Gross and histopathological changes revealed in both male and female sheep in 32 samples 13,4%, lesions that found are varied and frequent with different percentage.Gross pathological lesions involved congestion of kidney, shrinkage of the capsule, as well as atrophy of the kidney .The histopathological examination represented by the high percentage of glomerularnephritis 21.87%, and interstitial nephritis 18.75%. Concerningcirculatory disturbances, it was reflected by hemorrhage and congestion 21.87%, coagulative necrosis 15.62%, and epithelial sclerosis 12.5%, epithelial hyperplasia 9.37%.How-ever the rate of infection in females was higher than it in males. It can be concluded that glomerular nephritis is the most common lesion affecting sheep slaughtered in Tikrit city.

Article

☐ 110 **Effect of point mutation in the growth differentiation factor 9 gene of oocytes on the sterility and fertility of awassi sheep** Al-Mutar, H.A., Younis, L.S. Archives of Razi Institute, 75(1), pp. 101–108 2020 7

Document title	Authors	Source	Year	Citations

Hide abstract View at Publisher Related documents

Growth differentiation factor 9 (GDF9) plays a critical role in ovarian follicular development and ovulation rate. The present study aimed to investigate the correlation between the single-nucleotide polymorphism (SNP) of the GDF9 gene and reproductive performance variables, such as fertility and sterility in Awassi sheep. Forty pairs of ovaries from a total of 40 slaughtered Iraqi Awassi ewes were used in this study. Twenty of the ovaries were collected from sterile ewes and the other 20 ovaries were taken from fertile ewes for genomic DNA extraction, polymerase chain reaction, and sequencing to detect GDF9 gene polymorphism. Follicles and oocytes of all the 40 ovaries were evaluated and compared with the results of genotyping. Furthermore, histopathological and microscopic evaluations were performed for 40 ovarian tissues of the two groups. The sequence analysis revealed that exon I had three SNPs, including T(114)C, G(129)R, and G(199)A. The first two SNPs were silent mutations and the last mutation was missense responsible for the substitution of glutamic acid with lysine at position 67. The current study showed a significant increase (P≤0.01) in GG, AA, CC, GA, and GG genotypes at G(129)R, G(199)A, T(114)C, G(129)R, and G(199)A loci, respectively. Moreover, the TT genotype in locus T(114)C was recorded to significantly augment (P≤0.05) in the fertile ewes. Mutant GA genotype of the G(129)R locus led to a significant (P≤0.05) increase in the percentage of follicles (4-8 mm) and oocytes number, compared to wild GG. On the other hand, a significant decrease was recorded in the mutant AA genotype in G(199)A, compared to wild GG. Differences between CC and TT genotypes at T(114)C locus were not significant. Histopathological examination revealed hypoplasia in the ovarian tissue of sterile ewes accompanied by fibrous connective tissue invasion and follicles degeneration. However, in the fertile ewes, the ovarian tissues were normal with the presence of numerous corpus albicans and degenerative corpus luteum. According to the findings of this study, the homozygote mutation in fertile ewes minimized the number of follicles and oocytes leading to sterility, while the heterozygote mutation was reported in the fertile Awassi ewes.

Article • *Open access*

☐	111	**Pathological effect of infectious bronchitis disease virus on broiler chicken trachea and kidney tissues**	Hasan, I.I., Rasheed, S.T., Jasim, N.A., Shakor, M.K.	Veterinary World, 13(10), pp. 2203–2208	2020	4

	Document title	Authors	Source	Year	Citations

Hide abstract | View at Publisher | Related documents

Aim: This study aimed to investigate the pathological effects of the infectious bronchitis virus (IBV) on chicken trachea and kidney tissues and also desired to diagnose the virus genome using a molecular tool. Materials and Methods: Twenty trachea and kidney samples collected from one broiler farm contain 10,000 chickens at Tikrit city. The chickens showed signs of gasping and mortality (20%) at early ages (20 days old), the presence of IBV investigated using conventional reverse transcriptase-polymerase chain reaction technique with routine histopathological study to tracheal and renal tissue. Results: Postmortem lesion showed severe respiratory inflammation with abscesses at tracheal bifurcation lead to airway blog. Molecular results showed two genotypes of IBV, one of them not included in primer designer research. The histological study showed different stages of inflammation, degeneration, and necrosis to the renal and tracheal tissues. Conclusion: The respiratory and renal pathological effect of the virus responsible for the symptoms appeared on the affected chicks that caused mortality, with a high probability of presence of a new viral genotype added to the untranslated region.

Article • *Open access*

☐	112	**A High Light on Lumpy Skin Disease in Iraq and The Middle East: A Review Article**	Al-Sabaawy, H.B., Al-Hamdany, E.K., Al-Sultan, A.A., Rdam, S.A.	Journal of Applied Veterinary Sciences , 5(2), pp. 94–103	2020	6

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Lumpy skin disease is an infectious, eruptive disease that affected the different animal species, especially cattle. The causing virus is a member of the poxviridae family with Neethling strain. Transmission of the disease occurs by insect vectors and the most effective mean of control is by vaccination. The disease characterized by viremia, nodules on the skin, sit-fast formation, weight loss, emaciation, and reduction in milk and meat production. During the past five years, lumpy skin disease has spread through the Middle East into the southeast, Europe, Russia, western Asia, and the Caucasus, nowadays LSD causing high morbidity and mortality rate in different epizootic sides; the morbidity and mortality of LSD range between 3-85 and 1-40 % this is due to genetic differences in lives stock resulting in varying susceptibility to the disease.

Article • *Open access*

☐	113	**Effect of Saccharomyces cerevisiae as a Feed Additive on Some Aspects of Productive and Reproductive Performance in Adult Awassi Lambs. | تأثير إضافة خميرة الساركوميسيز سيرفيسى فى العالئق على أداء بعض النواحى االنتاجية والتناسلية للحمالن العواسية البالغة**	Ismaeel, M.A., Al-Doori, Z.T., Hussein, S.N.	Egyptian Journal of Veterinary Science(Egypt) , 50, pp. 39–45	2019	0

Document title	Authors	Source	Year	Citations

Hide abstract View at Publisher Related documents

THE study was carried out in the animal house at the College of Veterinary Medicine/ University of Tikrit for the period from January to July 2017, using 16 Awassi lambs at the age between10-12 months, and an average weight (36 kg). The animals were divided into four groups each one included four lambs. The first group was considered as control (T1), and kept without the addition of bread yeast to foods.The diets in the others groups (T2, T3 and, T4) contained the yeast in the proportions of (3, 5 and, 7 g /animal / day), respectively. Wheat straw was introduced as a free coarse feed as well as concentrated feed at 2.5% of weight which is measured weekly for 75 days. The aim of this study was to investigate the effect of several levels of dry bread yeast (Saccharomyces cerevisiae) on some productive, reproductive traits, and number of blood parameters. The results showed no significant differences for all studied traits (final weight, Body condition score, concentration of testosterone, blood glucose, protein and cholesterol). From all testicular and epididymis measurements were taken from animals after slaughter (weight and size of testicles, length and diameter of testis, weight of epididymis and length of one of them) the only testicular weight and size showed significant increases in all groups were given bread yeast to foods and the group that given high levels of yeast (T4) appeared highest increases compared with other treated group (T2 and T3). In conclusion, the present study demonstrates that the using of Saccharomyces cerevisiaeas supplementation in lambs feed leads to improvingthe reproductive performance in spite of insignificant changes in the production trait and blood parameters.

Article • *Open access*

☐	114	**Effect of Metamizole (Dipyrone) on Blood and Histological Pictures of Liver and Spleen in Rats | في الفئران تأثير الميتاميزول ديبيرون(على صورة الدم والشكل الهستولوجى النسجة الكبد والطحال)**	Hameed, B.Kh., Fadhil, R.M., Hussain, R.Sh., ... Gabori, E.A., Mustafa, N.E.	Egyptian Journal of Veterinary Science(Egypt) , 50, pp. 89–94	2019	1

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WE used in our study Twenty rats,divided into two groups .the first group consist of 10 rats considered as a control group, while the second group treated with 0.05 ml\body weight\day of dipyron injected for 30 days duration. The toxic effect of dipyrone was obvious in the different tissue and haematotoxic effects . The histological changes were obvious in the hepatic cell whichof liver were characterized by atrophy,irregular hepatic cells,RBC cells in the blood sinusoid. However,the spleen tissue contains nodule (white pulpe).The bony tissue have osteocytes large bony vacuoles and the blood vessel were congested.

Article • *Open access*

☐	115	**Use of Genetic Method for Investigating of Salmonella typhimurium and Salmonella Dublin Isolated From Local Cows in Iraq | المحلية في العراق استخدام الطرق الجينية لتميزالسالمونيال تايفيميوريم والسالمونيال دبلن المعزولة من االبقار**	Awadh, H.A., Khalaf, H.Y., Majeed, H.M., ... Jafar, N.A., Dhaher, N.N.	Egyptian Journal of Veterinary Science(Egypt) , 50, pp. 63–68	2019	0

	Document title	Authors	Source	Year	Citations

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THIS study carried out in Salah aldeen province in period from January to September 2019. The aims of this study were to investigate incidence of Salmonella typhimurium and Salmonella dublin in local Iraqi cows by using of PCR test. The results of current study showed that the rate of isolated Salmonella species was 13.3% by culture methods, highest of them from aborted cows in rate of 22.2%. PCR test detected Salmonella typhimurium and Salmonella dublin in rate of 55% and 25% respectively, while other Salmonella species has been detected in rate of 20% from total Salmonella isolates. We can concluded from this result that highly incidence of Salmonella in cow and Salmonella typhimurium is most isolated type.

Article • *Open access*

☐ 116 **Effects of red reishi mushroom (ganoderma lucidum) on the reproductive system in female and male rats**

Abdullah, B.A., Alfahad, M.A., Hdree, D.H.

Iraqi Journal of Veterinary Sciences , 33(1), pp. 137–141

2019

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The present study aimed to investigate the histological changes of Ganoderma lucidum (Red Reishi mushroom) on female and male reproductive system by using light microscope. Fifteen white rat weighing 200-250g was used in the experiments. The animals was divided mainly into three groups and these groups were subdivided into 3 groups for female, and 3 groups for male, that's group represented as control group without treatment (G1). The 2nd received only 0.03 gm and vitamin C diluted with D.W. and the 3rd group received 0.03 gm of Ganoderma lucidum. The results of the present study showed that there are no side efects of Ganoderma lucidum on female and male genital system of rats (positive effects).

Article • *Open access*

☐ 117 **Protective effect of silymarin against kidney injury induced by carbon tetrachloride in male rats**

Ahmed, M.A., Tayawi, H.M., Ibrahim, M.K.

Iraqi Journal of Veterinary Sciences , 33(1), pp. 127–130

2019

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The herbal drugs have a protective effect for kidney function against chemical toxicity. 24 male rats divided into 4 groups and treated as following, control group administrated orally with 1ml/kg. B.W physiological solution (0.9%), One dose Carbon Tetrachloride (CCl_4) 3 ml/kg. B.W, Silymarin 150 mg/kg. B.W and Silymarin150 mg/kg. B.W with CCl_4 3 ml/kg. B.W for 30 days. Oxidative stress resulted by CCl_4 caused increasing in Creatinine, Urea, total protein, Albumin, malondialdehyde (MDA) levels decreasing in Glutathione (GSH) and superoxide dismutase (SOD) levels in serum and congestion, degeneration and desquamation in kidney tissue. We concluded that Silymarin showed protective effect via increasing GSH, decreasing creatinine, Urea, total protein and MDA levels in serum and protect kidney tissue in rats.

	Document title	Authors	Source	Year	Citations

Article • *Open access*

118 **Detection of mycoplasma gallisepticum and mycoplasma synoviae by using of cultural and PCR technique**

Jafar, N.A., Noomi, B.S.

Iraqi Journal of Veterinary Sciences , 33(2), pp. 469–473

2019

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Laboratory methods are essential for the diagnosis of Mycoplasmal infection. There are three laboratory approaches are essential for the diagnosis of Mycoplasmal infection in chicken including direct methods by culture method and polymerase chain reaction, and indirect methods by detection of Mycoplasmal antibodies by serological tests. This study aimed to detection of Mycoplasma by culture and PCR technique. Two hundred seventy-six samples were collected from infected adult boiler chicken in Salah Al-din province which suffering from respiratory signs and /or joint infection, 202 respiratory and 74 articular samples. According to the results of culture, Mycoplasma isolated in rate of 35.1% (36.6% from respiratory samples and 31.1% from articular samples). The sensitivity of culture was 100%, while the specificity of culture was 97.9% when comparing with PCR results. The current study concluded that the respiratory infection was more than articular infections, and Mycoplasma gallisepticum more distributed than Mycoplasma synoviae among chickens.

Article • *Open access*

119 **Fasciolosis: Grading the histopathological lesions in naturally infected bovine liver in Mosul city**

Al-Mahmood, S.S., Al-Sabaawy, H.B.

Iraqi Journal of Veterinary Sciences , 33(2), pp. 379–387

2019

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Fasciolosis cause economic losses in cattle that breed in Iraq and the world. About 4% of bovine liver's samples included in the current study exhibited classical pathological lesions of fasciolosis. Samples of cattle livers infected with fasciolosis were taken for histopathology. Eighteen grading criteria with four scoring level have been chosen to grading the microscopic lesions caused by Fasciola hepatica into a mild infection (grade I), moderate infection (grade II) and severe infection (grade III). The type of hepatic degeneration or necrosis, cloudy cell swelling, coagulative necrosis, infiltration of inflammatory cells, with patterns of infiltration, also type of infiltrated cells, fibrosis between hepatic cells or in portal area, affection to hepatic cords arrangement, hepatic sinusoids, extensions of hemorrhage, pigment deposition, hyperplasia of bile duct, thickness of hepatic capsule and presence of liver fluke were the main grading levels. In grade, I the microscopic lesions were characterized by simple or mild in their nature with very good reversible prognosis, while grade II characterized by moderate severity of the lesions with a good reversible prognosis, while grade III characterized by hostile severity with bad irreversible prognosis as a result of architecture changes in liver histology. In conclusion, we believed that this grading system could be used as a guide when examining histopathological liver's samples infected with F. hepatica to identify the stage of infection and proposed an accurate prognosis.

	Document title	Authors	Source	Year	Citations
	Article • *Open access*				
120	**Study of histopathological and biochemical effect of punica granatum l. Extract on streptozotocin -induced diabetes in rabbits**	Sarhat, E.R., Wadi, S.A., Sedeeq, B.I., Sarhat, T.R., Jasim, N.A.	Iraqi Journal of Veterinary Sciences , 33(2), pp. 189–194	2019	20

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This study was undertaken to determine the antidiabetic effects of oral administration of Punica granatum L. extract on serum and tissues of streptozotocin induced diabetic rabbits at 100 mg/kg. The present study was carried out at the Faculty of veterinary Medicine, Tikrit University, from February to August 2017 for 10 weeks. For this purpose, 30 rabbits were randomly separated into three groups, each containing 10 animals: Group 1, healthy control rabbits; Group 2, diabetic rabbits received streptozotocin (STZ, 65 mg/kg); Group 3, diabetic rabbits treated with PS extract (the 100 mg PS+1 ml DW) for 21 days. At the end of experiment, blood samples were taken for measuring serum biochemical parameters. For histopathological evaluation, sections of kidneys were fixed in 10% buffered formalin and 5micron thick sections with H&E stain were prepared using routine histopathological techniques. The treatment revealed that PSE extract significant decreased serum glucose thrombospondin-1, nitric oxide, alanine aminotransferase, aspartate aminotransferase, lactate dehydrogenase alkaline phosphatase, and C-reactive protein in diabetic treated rabbits as compared to diabetic rabbits. Histopathology of kidney showed lesions similar to human glomeruloscleroses, glomerular membrane thickening, arteriolar hyalinization and tubular necrosis. From the above one can conclude that PSE extract possess nephroprotective effect in experimentally induced diabetic rabbits.

	Article • *Open access*				
121	**A comparative study between kessler suture versus polypropylene mesh implantation to repair tenotomized common calcaneal tendon in rabbits**	Humadi, S.K.	Iraqi Journal of Veterinary Sciences , 33(2), pp. 289–296	2019	2

Document title	Authors	Source	Year	Citations

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The present study is assigned to throw the light on the benefit of using Kessler suture compared with polypropylene mesh implantation in healing of induced tenotomy of common calcaneal tendon in a rabbit model based on clinico-histopathological evaluation. Twenty adults New Zealand white male rabbits were used for this clinical prospective study divided equally and randomly into two groups. The first group, (suture group n=10) and the second group (mesh group n=10). Under the effect of general anesthesia, longitudinal skin incision over the common calcaneal tendon was made, and the skin flap was reflected. The tendon was isolated by blunt dissection from the surrounding tissue, with small curved forceps. Simulation of a rabbit's common calcaneal tendon rupture was made by sharp transvers incision with scalpel. The first group repair with (Kessler Suture) using polypropylene suture size 4.0. In contrast, the second group repair with (polypropylene mesh implantation) after initial suturing of the cut ends of tendon by two simple interrupted stitches using polyglyconate suture size 4.0. The surgical skin wounds were re-stitched by simple interrupted pattern with 3-0 silk. After clinical follow-up of the treatment rabbits, certain secondary health problems were encountered represented by swelling of operative site and lameness. Grossly, adhesions were noticed between the tendon and subcutaneous tissue in rabbits of both groups. Microscopical examination reflected presence of inflammatory cells perivascular edema and few capillaries at two months. At the end of experiment there were perfect orientation and organization of collagen fibers in mesh group in comparing with suture group. Based on the results obtain from this study, it seemed that both groups reflected best outcome in healing of operated tendons with superiority of mesh group in comparing with suture group.

Article • *Open access*

☐ 122 **COMPARATIVE STUDY BETWEEN THE EYEBALL IN THE CAT AND HENS (HISTOLOGICAL INVESTIGATION)**

Hameed, B.K.

Assiut Veterinary Medical Journal (Egypt) , 65(161), pp. 305–309

2019

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Four specimens of eyeball of adult hens and cats were used in this study. They were put in formalin 10 % for fixation after anatomical dissection of the head. After 24 hour of fixation, the whole specimens were processed for histological examination. The retina and cornea of both animals were examined under light microscope. In the hens and cats the eyeball was formed of three similar layers, sclera, choroid and retina, but in hens the sclera showed the presence of hyaline cartilage instead of collagen fibers. The choroid of cat was taller and more folded then in hens. The retina of hens showed the presence of rods more than in hens which reflect the ability of cat to recognize the objects in Dim light gradient then hens.

Article • *Open access*

☐ 123 **PREVALENCE OF CUTANEOUS LEISHMANIASIS AMONG REFUGEE CAMPS IN SALAHDEEN PROVINCE, IRAQ**

Mahmood, O.I., Taha, Z., Ashoor, M.H.

Assiut Veterinary Medical Journal (Egypt) , 65(161), pp. 259–262

2019

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Document title	Authors	Source	Year	Citations

Hide abstract View at Publisher Related documents

Leishmaniasis, a vector-borne protozoan parasitic diseases endemic to 88 countries worldwide and is a source of significant public health concern. The aim of the study was to paid attention to the high prevalence of cutaneous leishmaniasis (CL) between refugee in Salahuddin province's camps after the beginning of the civil war in Iraq in 2014. Since January to March 2015, records for cases of cutaneous leishmaniasis (CL) were collected from the United Nations Refugee Agency (UNHCR) in Iraq from three camps in Salahuddin province (Tal-Alsebat, AlShhama and Dream city). A total of 333 cases diagnosed with (CL) based on the clinical manifestations and traditional microscopic examination. Positive cases were evaluated in terms of residence, age and gender, lesion's location, presence of single or multiple lesions, number of individual within the family, and outcome, as well as the socioeconomic and environmental state. The high rate of infection was in Tal-Alsebat camp (63.9%). Most patients (73.6%) were <10 years of age. No significant differences between male and female. Lesions are more frequently observed on the face, neck and hands (66%).

Article • *Open access*

☐ 124 **DETECTION OF THE PARASITES WHICH INFECT THE PIGEONS IN THE SHARQAT CITY, SALAH AL-DEEN PROVINCE**

Aljoburi, A.U.-J.M.H., Jassim, N.A., Hasan, I.I.

Assiut Veterinary Medical Journal (Egypt) , 65(160), pp. 25–30

2019

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The study was designed to detect the parasites that affect the bathroom (males and females) in different areas of the Sharqat city, Salah Al-Deen province. The study used (74 pigeons). The results of the presence of ten types of parasites with percentages: Raillietina tetragona 12(16.2%), among the pigeons. Other parasites encountered included; Raillietina echnobothrida. 10(13.5%), Ascaridia columbae 9(12.1%), Capillaria spp 9(12. 2%), Argas persicus 8(10.8 %), Menopon gallinae 7(9.4%), Columbicola columbae 7(9.5%), Eimeria spp 6(8.1%), Leucocytozoon spp 4(5.5%), and Haemoproteus spp 2(2.8%). We concluded from this study that pigeons with different types of parasites (internal and external) recorded the highest parasitic infection Raillietina tetragona.

Article

☐ 125 **Ecological study of epiphytic diatoms on two submerged aquatic macrophytes in Tigris river, Iraq**

Ali, S.F., Hassan, F.M., Abdul-Jabar, R.A.

Iraqi Journal of Agricultural Sciences , 50(4), pp. 1109–1119

2019

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	Document title	Authors	Source	Year	Citations

Hide abstract Related documents

This study was aimed to provide the baseline information of epiphytic diatom communities in the Tigris river within Wasit Province to fill the information gap on the algal distribution. This investigation was conducted on epiphytic diatoms from two macrophytes (Ceratophyllum demersum and Myriophyllum alterniflorum) and related physicochemical parameters of the river from June 2015 to May 2016. Three sites were selected along the river (Al-Aziziyah, Zubaidiyah, and Numaniyah). Qualitative and quantitative study of epiphytic diatoms was investigated. A total of 277 species of epiphytic diatoms were identified on both macrophytes, these diatoms belonged to 27 genera for C. demersum and 28 genra for M. alterniflorum. A total number of diatom species were ranged from 801.8× 104 cell.g-1 at site 3 to 1159.72 ×104 cell.g-1 at 1for C. demersum, while on M. alterniflorum were ranged (87.24 × 104 -545.68×104 cell.g-1) at site1. The study revealed that diatoms were abundant, reflecting the quality of water and determine the extent of pollution and polluted type.

Article

☐ 126 **Preparation of a new molecularly imprinted polymers and its use in the selective extraction for determination bromhexine hydrochloride at pharmaceuticals**

Mahdi, A.R., Al-Bayati, Y.K., Ameen, S.T.

Iraqi Journal of Agricultural Sciences , 50(3), pp. 886–900

2019

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This study was aimed four electrodes were synthesized based on molecularly imprinted polymers (MIPs). Two MIPs were prepared by using bromhexine hydrochloride (BHH) as the template, acryl amide (AA) and methyl methacrylate (MMA) as monomers as well as ethylene glycol dimethacrylate (EGDMA) and penta erythritol triacrylate (PETA) as cross linkers respectively and benzoyl peroxide as initiator. The same composition was used in preparation of non-imprinted polymers (NIPs), but without the template (Bromhexine hydrochloride). To prepare the membranes, different plasticizers were used in PVC matrix such as: Di butyl sebacate (DBS), acetophenone (AP), di-octyl phthalate (DOPH) and tri-2-ethyl hexyl phosphate (TEHP). The characteristics studied are the slop, detection limit, life time and linearity range of BHH-MIPs electrodes. Results obtained of selectivity measurements on interfering cations (Al+3, Ca+2, K+) and some pharmaceutical additives such as methylparaben, propylparaben, trisodium citrate show that no interfering with drug bromhexine hydrochloride. The preparation electrodes have been shown good response including testing pharmaceutical analysis.

Article

☐ 127 **Study the pathological changes in the intestine of rabbits infected experimentally with Salmonella typhimurium**

Hussein, M.A., Owain, M.S., Abdulgafor, A.B., ... Aboud, Q.M., Al-Zobaie, A.J.

International Journal of Veterinary Science , 8(2), pp. 79–83

2019

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Document title	Authors	Source	Year	Citations

Hide abstract Related documents

The current study aimed to explore the histopatholgical changes in intestine of rabbits experimentally infected with Salmonella typhimurium. A highly virulent isolate of S. typhimurium obtained from Department of internal and preventive medicine/ College of Veterinary Medicine/University of Baghdad were previously diagnosed and confirmed by PCR. Infective dose of bacteria was prepared and given to animals at a dose of 5x109 CFU. The experimental study was conducted on 25 local rabbits of both genders aged between 2-4 months old were adapted for two weeks before starting the experiment. These rabbits divided randomly into five Groups, each group contains 5 rabbits, as follows: Group 1: these were used as negative control Group 2: these were used as infected group which drenched 5 ml suspension which have (5x109 CFU) of Salmonella typhimurium, Group 3: these were given a same dose of Salmonella typhimurium then treated with single dose of gentamicin alone at 0.05ml/kg (5mg/ml) orally after presence of signs, Group 4: these were given a same dose of S. typhimurium then treated with a single dose of Ca-EDTA alone at 40mg/kg orally after presence of signs, Group 5: these were drenched with the same dose of S. typhimurium then treated with combination of single dose of gentamicin at 0.05ml/kg (5mg/ml) orally and Ca-EDTA 40mg/kg orally after presence of signs. The presented results of post mortem showed a congestion of intestine and filled with watery diarrhea. The results of histopathological examination of intestine revealed presence of different changes as infiltration of PMNs, destruction of crypts,villus atrophy and mucosal and submucosal blood vessel congestion in G2, G3, G4 pre and post treatment at different times, while the histological architecture in the G5 appeared near to normal with mild PMNs hyperplasia in mucosa at 48 hrs., while, at 96h it showed normal histological appearance.

Article • *Open access*

		Document title	Authors	Source	Year	Citations
☐	128	**Effect of adding white tea powder (Camellia sinensis) to the Japanese quail (Coturnix coturnix japonica) birds rations in some traits of blood biochemical and liver enzymes**	Abbas, F.R., Ali, N.A.-L., Abdul-Jabar, I., Al-Nassry, A.S.	Advances in Animal and Veterinary Sciences , 7(3), pp. 205–209	2019	0

Document title	Authors	Source	Year	Citations

Hide abstract View at Publisher Related documents

The experiment was conducted in the animal production field that is following to College of Agriculture, University of Tikrit, and for 8 weeks to study the effect of adding white tea powder (Camellia sinensis) to the Japanese quail (Coturnix coturnix japonica) birds rations in some traits of blood biochemical and liver enzymes, the 45 females were used with age of 24 weeks. Birds were randomly distributed to three treatments, each treatment consists of five cages, where in each cage was placed 3 female quail and treatments were as follows: The first treatment: (T1) standard ration without addition, the second treatment: (T2) standard ration added 1 g white tea powder / kg feed, and the third treatment: (T3) standard ration added 1.5 g white tea powder / kg feed. The blood samples were collected after slaughtering the birds in tubes that did not contain the anticoagulant. The blood plasma was separated by a centrifuge at 3000 cycles for 15 minutes. The serums was kept in clean tubes at -20 °C. The experiment included the study of the following traits: Uric Acid, Glucose, Total Protein, Albumin, Globulin, Cholesterol, Triglycerides, High-Density Lipoprotein(HDL), Low Density Lipoproteins(LDL), Glutamic-Oxaloacetic Transminase Enzyme (GOT), Transminase Glutamic-Pyruvic Enzyme (GPT) and Alkalin-Phosphatase Enzyme (ALP). The results showed significant improvement ($p < 0.05$) in white tea treatments in total protein concentration, albumin, globulin, high density lipoproteins and (ALP) compared to control treatment and significant decrease ($p < 0.05$) in uric acid concentration, glucose, cholesterol, triglycerides, Low Density Lipoproteins, GOT and GPT. The current experiment suggests that the addition of white tea in the rations can lead to improvement of some parameters of biochemical blood and ALP enzyme.

Article • *Open access*

☐ 129 **The genetic selection for four generations and its effect on the blood biochemical parameters in the white quail**

Al-Tikriti, S.S.A.

Advances in Animal and Veterinary Sciences , 7(3), pp. 151–156

2019

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This study was conducted in the field of animal production of the college of Agriculture - University of Tikrit from 20/10/2012 until 20/6/2013, the herd was obtained from the General Authority for Agricultural Research in Abu Ghraib which affiliated to the Ministry of Agriculture. The average weight of males and females at five weeks old (150 and 178) grams respectively, with production percentage 70%, collection of eggs from the herd and hatched in a hatchery in the College mentioned above. The study aimed to determine the effect of selection after four generations of the Japanese quail in order to determine the changes in certain blood biochemical parameters. The results showed a significant decrease in the level of cholesterol, glucose, total protein, albumin, globulin and uric acid in the fourth generation compared to the other generations of each of the selected lines.

Article • *Open access*

☐ 130 **Effect of Leptin gene polymorphism on reproductive efficiency in Awassi ewes**

Younis, L.S., Al-Mutar, H.A.A., Abid, A.A.

Advances in Animal and Veterinary Sciences , 7(1), pp. 17–23

2019

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Document title	Authors	Source	Year	Citations

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LEPtin (LEP) is a hormone that strongly associate with nutritional state, glucose homeostasis and reproduction. Study performed to identify the linkage between LEP polymorphism and reproductive efficiency such as Seasonality and litter size. Forty mature non-pregnant Awassi ewes were utilized between 1st July/2017 to 1st May/2018 in Salah Aldin province/Iraq. Twenty ewes were demonstrated estrus heat at August/2017which considered Seasonal group, and the others showed estrus signs at April/2018, which considered Non-Seasonal group.Genomic DNA was extracted from blood specimens and four primers were utilized to amplify exon II, intron II (fragment 1) and exon III (fragment 1) of LEP geneby polymerase chain reaction (PCR). Polymorphisms were revealed via sequencing and compared with the sequencing of the ovine LEP gene in NCBI. One single nucleotide polymorphism (SNP) A(99)R was detected in intron II and three SNPs G(425)R, T(541)K and G(587)R were in exon III. Two genotypes of each SNP were observed with higher significant differences ($P < 0.01$) between frequencies 47.50 and 52.50 for AA and AG of A(99)R, 42.50 and 57.50 for GG and GA of G(425)R, 55.00 and 45.00 for TT and TC of T(541)K, lastly, 37.50, 62.50 for GG and GA of G(587)R. The finding demonstrated AG genotypic frequency of Non-Seasonal ewes (55.00) was significantly increased ($P < 0.05$) than AA (45.00) for A(99)R SNPs. The mutant GA, TC and GA genotypic frequencies (80.00, 40.00 and 85.00) were recorded higher significant increased ($P < 0.01$) than wild genotype GG, TT and GG (20.00, 60.00 and 15.00) for G(425)R, T(541)K and G(587)R SNPs in Non-Seasonal group. Higher significant increased ($P < 0.01$) were observed in GG, TT and GG genotypic frequencies (65.00, 70.00 and 60.00) than GA, TC and GA (35.00, 30.00 and 40.00) for G(425)R, T(541)K and G(587)R SNPs respectively in Seasonal group, while non-significant differences were observed between AA and AG (50.00 for each) genotypic frequency for A(99) R SNPs of Seasonal group. Non-significant differences in litter size were recorded between GA (1.39) and GG (1.29) for G(425)R and between GG (1.4) and GA (1.32) for G(587)R, while significant differences ($P < 0.05$) were observed between AG (1.26) and AA (1.42) and between TT (1.18) and TC (1.55) for A(99)R and T(541)K respectively. In Awassi breed, exon III polymorphisms of LEP gene have an expected effect on the Seasonality and the wild genotypes find majorly in Seasonal ewes. Intron II and exon III polymorphisms (2 SNPs) caused an increment in litter size.

Article • *Open access*

131 **Effects of spirulina platensis algae extract early feeding on Japanese quail embryos**

Aljumaily, T.K.H., Taha, A.T.

Advances in Animal and Veterinary Sciences , 7(1), pp. 30–37

2019

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Document title	Authors	Source	Year	Citations

Hide abstract | View at Publisher | Related documents

The blue-green algae (Spirulina platensis) is widely distributed worldwide. The nutritional value of Spirulina algae is well-documented. Spirulina has unique high protein content, about 50-70% by dry weight, and it is considered as a good source of essential amino acid. Additionally, Spirulina was recognised to have a wide range of essential nutrients, including essential fatty acids and polysaccharides, vitamins and minerals, and carotenoids.The aim of this study was to determine the injection effect of spirulina liquid extract on fertility and hatching traits, production performance, and some biochemical characteristics of quail eggs during the incubation period. Four hundred and fifty eggs were selected for hatching. The eggs were divided into three groups, and every group was treated differently. The results of the first treatment showed that there was a significant difference in the hatchability percentage of fertilized eggs. Furthermore, the percentage of failed eggs and weak chicks from the control treatment is almost significantly. The results of the second treatment showed that there was no effect on the average weight of the hatched chicks and feed conversion ratio. The third treatment showed a significant increase in the weight gain and feed consumed. It was noticed that the treatments did not have a notable effect on the relative weight of the liver, heart, and intestines. No significant differences were observed of physiological characteristics, as total protein concentration, enzymatic activity of GOT, GPT, and MDA level. The third treatment caused an increase in GSH glutathione level comparison with a control treatment. The injection of spirulina liquid extracts in late stages of incubation could improve the hatchability percentage chicks and their chances of survival. It can also strengthen the new hatch chicks immunity and antioxidants status.

Article • *Open access*

☐	132	**Protective effect of aqueous extract of alhagi maurorum in spermatogenesis and antioxidant status of adult rats exposed to carbon tetrachloride**	Ahmed, M.A.	Iraqi Journal of Veterinary Sciences , 33(1), pp. 1–7	2018	9

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This study aimed to investigate the efficiency of aqueous extraction of Alhagi maurorum leaves against oxidative stress induced by carbon tetrachloride (CCl4) on spermatogenesis and the level of glutathione, superoxide dismutase, malondialdehyde in adult rats. Plant Leaf's dried and then extracted. Experiment included 24 male rats divided into 4 groups 6 subjects in each group. Groups treated orally for 30 days as following: first was control group which administered with 1 ml of physiological saline 0.9%, second group administered once with CCl4 3 ml/Kg, third and fourth groups administered with aqueous extract 300 mg/kg and aqueous extract together with CCl4 respectively. The results showed that CCl4 caused a significant decrease in sperm count, sperm vitality, normality, glutathione (GSH) and superoxide dismutase (SOD), significant increase in sperm mortality, abnormality and malondialdehyde (MDA) compared with control group. While aqueous extract treatment caused no significant difference in compare to control group. Groups treated with aqueous extract together with CCl4 showed a significant increase in sperm count, vitality, normality and GSH and decreasing in mortality, abnormality and MDA in compare to CCl4 group. It could be concluded that the aqueous extract of Alhagi maurorum have a positive effect on male reproduction and antioxidants in rats exposed to oxidative stress.

	Document title	Authors	Source	Year	Citations
	Article • *Open access*				
133	**Antimicrobial and antifungal activity of pumpkin (Cucurbita pepo) leaves extracted by four organic solvents and water**	Mohammed, H., Najem, R.S., Altekrity, S.S.A.	Iraqi Journal of Veterinary Sciences , 32(1), pp. 33–39	2018	5

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Pumpkin is a rich source of vitamin A, being high in beta-carotene, a precursor to vitamin A. It provides substantial fiber, niacin, and lutein (important antioxidant). Pumpkin seeds have many health benefits, some of which include a good source ofprotein, zinc, and other vitamins, and are even said to lower cholesterol, Pumpkin plant was mentioned in the holy Quran as protector to protect the prophet Yonah, peace upon him after his expulsion from the whale. The present work was design to elucidate and evaluate different organic solvents i.e. (Distilled water, Ethanol, Hexane, and Petroleum ether) extracts ofpumpkin leaves against some of the pathogenic bacteria and fungi. The results showed pumpkin leaves extracts were able to inhibit bacterial {Escherichia coli, Klebsiella pneumonia, Staphylococcus aureus, Proteus mirabilis and Pseudomonas aeruginosa) and fungal {Aspergillus fumigatus, Aspergillus niger, and Candida albicans) growth, comparable with the known antibiotic Ciprofloxacin and the antifungal drug Kenazole. There were no significant differences among different solvents in their ability to produce anti- microbial activity except petroleum ether. Petroleum ether extracts did not show any bacterial growth retardation while it showed anti -fungal inhibition in higher concentrations for Aspergillus fumigates and Aspergillus niger, while Candida albicans seem to be resistant to the petroleum ether extract ofpumpkin leaves.

	Article • *Open access*				
134	**Detection of virulence factors of pseudomonas aeruginosa in different animals by using bacteriological and molecular methods**	Noomi, B.S.	Iraqi Journal of Veterinary Sciences , 32(2), pp. 205–210	2018	9

Document title	Authors	Source	Year	Citations

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The aim of this study was to detect the presence of virulence factors of Pseudomonas aeruginosa in different animals. For this purpose 120 samples were collected and examined to detect fourteen virulence factors by using biochemical and molecular methods. The results showed that the highest isolation rate was recorded in doges (29.6%) among studied animals, and highest isolation rate was recorded in milk samples (26.8%) among the studied samples. The virulence factors were detected in different ratio, and highest of them were capsule detected in 50% from skin isolates, amylase enzyme detected in 28.5% from milk isolates, hemolysin enzyme detected in 75% from wound isolates, protease detected in 100% from skin isolates, phospholipase enzyme detected in 56.1% from milk isolates, urease enzyme detected in 50% from skin isolates, gelatin liquefaction detected in 100% from skin and ear isolates, β-lactamase production detected in 100% from skin and wound isolates, pigments production detected in 100% from skin and ear isolates, oprI, oprL and exoT detected in 100% from skin and wound isolates, exoS detected in 100% and 85.7% from skin and milk isolates respectively. We conclude from his study that the dogs are more sensitive in compare with studied animal, while the milk sample is more susceptible to contamination by Pseudomonas aeruginosa. Regarding the virulence factors we noticed that the appearance of it basis on infection state.

Article • *Open access*

☐ 135 **Assessment of alterations in some blood biochemical and mineral contents concentration before and during pregnancy period in iraqi ewes of salah-edin province**

Ismaeel, M.A., Awad, A.H., Dhahir, N.N.

Iraqi Journal of Veterinary Sciences , 32(2), pp. 161–165

2018

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Thirty local Iraqi ewes reared in Tikrit – Salah-edin province from first the of October-2016 to the first of March-2017 were used in the current study to investigate the influence of pregnancy on levels of some biochemical and minerals contents in the blood serum. Blood samples were collected from ewes before and monthly during pregnancy (first, second, third, fourth and fifth month), serum separated and stored at 5 °C until samples analysis. All samples were analyzed by spectrophotometer with special kits for each parameter. Results demonstrate significant decrease (P ≤0.05) in concentration of total protein, cholesterol and glucose as pregnancy advanced, while there is no effect of pregnancy on the concentration of creatinine and magnesium, however, there is a significant increase (P ≤0.05) in calcium concentration as pregnancy proceed. In conclusion the pregnancy has clear influences on the concentration of total protein, cholesterol, glucose and calcium. The measurements of these parameters give best assessment for nutritional and health status of Iraqi ewes during pregnancy.

Article

☐ 136 **Molecular genotyping of Echinococcus granulosus in the North of Iraq**

Hammad, S.J., Cavallero, S., Milardi, G.L., ... D'Amelio, S., Al-Nasiri, F.S.

Veterinary Parasitology, 249, pp. 82–87

2018

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Document title	Authors	Source	Year	Citations

Hide abstract View at Publisher Related documents

Cystic echinococcosis/hydatidosis is an important cosmopolitan zoonotic disease that causes large economic losses and human suffering. The larval stages of Echinococcus granulosus are the etiological agents of cystic echinococcosis that showed different genotypes in different regions in the world. The present study was aimed at the detection of E. granulosus strains circulating in two cities from north of Iraq (Kirkuk and Sulaimania). A total of 47 specimens of hydatid cysts were collected from patients and from different domestic intermediate hosts including cattle, sheep, goat and buffalo from slaughterhouses. Molecular characterization was performed by direct sequencing of the mitochondrial DNA (mtDNA) genes coding for the cytochrome c oxidase I (cox1) and the small subunit ribosomal RNA (rrnS). The results showed a high prevalence for the sheep strain (G1), an isolated finding of the buffalo strain (G3) and the presence of seven and three different microvariants for cox1 and rrnS, respectively. This is the first contribution on molecular genotyping of E. granulosus in Iraq with the observation of genotypes other than G1.

Article • *Open access*

☐ 137 **Effect of Different Levels of Commercial Saccharomyces cerevisiae with the Ration on Some Carcass Characteristics of Awassi Lambs**

Aldoori, Z.T., Al-Obaidi, A.S.

Advances in Animal and Veterinary Sciences , 6(10), pp. 462–466

2018

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The aim of this study was to investigate the effect of adding different levels of commercial Saccharomyces cerevisiae (Sc) to the Awassi lambs ration on the meat and carcass characteristics. Sixteen local Awassi male lambs aged 6-6.5 months with initial weight of 36±0.34 kg were allocated and distributed into four treatments with four lambs each as follow: T1 (control), T2 (3 gm Sc/head/day), T3 (5 gm Sc/head/day), T4 (7 gm Sc/head/day). Wheat straw was provided ad libitum as a roughage diet while concentrate diet was provided for each treatment lambs by 2.5% of weekly live body weight for the whole study period (seventy five days). At the end of the study, lambs were weighed then slaughtered. Results shows a significant superiority (P<0.05) of the T3 compared with T2 in the hot and cold carcass weight, also a significant superiority (P<0.05) of T 3 and 4 was detected in the dressing percentage comparing with control. Results revealed that the differences among treatments in the fore and hindquarter cuts were not significant. A significant decrease (P<0.05) was detected in the kidney and pelvic fat and fat tail percentages in the treated groups. The T4 showed a significant (P<0.05) backfat thickness among treatments. The significant differences (P<0.05) were found among treatments in ribeye area. Results showed a non-significant increase of lean and significant decrease (P<0.05) (except with T2) in the fat in treated groups. T3 shows a significant increase (P<0.05) in the protein and a significant decrease (P<0.05) in the fat among treatments, while T2 and 4 showed a significant superiority (P<0.05) in each of the moisture and ash respectively among treatments. The results of the current study confirmed the positive effect of adding Sc on the hot and cold carcass weight, dressing percentage and main carcass cuts.

Article

	Document title	Authors	Source	Year	Citations
138	**Exposure effect of magnetic field on water properties in recirculation aquaculture systems(RAS)**	Hassan, S.M., Ridzwan., A.R., Rezuwan, K., Umoruddin, N.A.	Iraqi Journal of Agricultural Sciences , 49(6), pp. 1015–1031	2018	12

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The objective of this study to investigate the effect of magnetic field on water properties recirculating aquaculture systems. This study is based on previous works reporting the positive effects of exposure to magnetic field on water properties, plant growth, plant germination, livestock-drinking water, and fish fertilisation. It was conducted against the backdrop of serious issues pertaining to water quality in recirculating aquaculture systems, which negatively impact aquaculture species growth. First, this work evaluates the effect of exposed to magnetic field intensities of 0.10, 0.15, 0.20, 0.10 + 0.15, 0.10 + 0.20, 0.15 + 0.20, and 0.10 + 0.15 + 0.20 T on water quality. The results showed significant ($p < 0.05$) increases of the dissolved oxygen (DO), pH, and conductivity(CD) by 17.3, 1.6, 3.0%, respectively, and significant decreases of the ammonium level(NH4-N), specific conductivity(SPC), total dissolved solids(TDS), oxygen reduction potential(ORP), and chlorides by 25.3, 1.1, 1.4, 1.0, 16.9, 3.4%, respectively, throughout the experiment in recirculation aquaculture systems. Therefore, the installation of the device in recirculation aquaculture systems is simple, low cost, and can be retrofitted into existing systems, which helps simplify fish rearing for fish farmers. تهدف الد ا رسة لمعرفة تأثير المجال المغناطيسي عمى خصائص المياه في تربية الأحياء المائية . تستند هذه الد ا رسة إلى النتائج السابقة التي بينت بعض التأثي ا رت الإيجابية لمتعرض لممجال المغنطيسي عمى خواص الماء، الإنبات، نمو النباتات، المياه المستعممة لشرب الحيوانات، وفقس الأسماك. وقد أجريت عمى خمفية المشاكل الخطيرة المتعمق التي تتمثل بتدهور نوعية المياه مثل إرتفاع نسبة الأمونيا، العكورة، الأملاح الكمية الذائبة وانخفاض الأوكسجين الذائب والإس الهيدروجيني في نظم إعادة الاستز ا رع المائي والتي تؤثر سمبًا عمى نمو 0.10 ،0.20 ،0.15 ، الأنواع المختمفة من الأحياء المائية. أولاً، يقوم هذا العمل بتقييم تأثير كثافة المجال المغناطيسي لمشدد 0.10 0.20 تسلاً عمى نوعية المياه المستخدمة في تربية الأحياء المائية، + 0.15 + 0.20 و 0.10 + 0.15 ،0.10 + 0.20 ،0.15 + 1.6 و 3.0 ٪ عمى التوالي، ونقص ، أظهرت النتائج زيادة معنوية في الأ وكسجين الذائب، الأس الهيدروجيني والموصمية بنسبة 17.3 ،٪ 1.0 و 3.4 ، 1.4 ، 1.1 ، ممحوظ في مستوى الأمونيوم، الموصمية النوعية، المواد الصمبة الذائبة الكمية، والكموريدات بنسبة 25.3 عمى التوالي، وعمى مدى فترة التجربة في أنظمة إعادة تدوير المياه. ولذلك ، فإن تنصيب أجهزة توليد المجال المغناطيسي في أنظمة تربية الأحياء المائية هو بسيط، ومنخفض التكمفة، وسهل التركيب في أنظمة التربية مما يساعد عمى حل مشكمة تدهور نوعية المياه المستخدمة بسبب النواتج العرضية لمعممميات الأيضية والعمف غير المتناول في أنظمة تربية الأحياء المائية المغمقة التي تهدف الى الإقتصاد في كمية المياه المستعممة.

Article

139	**Histological and molecular studies of the effects of tramadol on brain, liver snd kidney of adult rabbits**	Abdullah, B.A.	Iraqi Journal of Agricultural Sciences , 49(6), pp. 1083–1089	2018	3

Document title	Authors	Source	Year	Citations

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هدف الد ا رسة هو فحص التغي ا رت النسيجية والخموية لمكبد والكمية والدماغ للا ا رنب التي جرعت بعقار الت ا رمادول . نفذت الد ا رسة باستخدام 01 ا ا رنب ذكور. .قسمت الى مجموعتين .المجموعة الاولى جرعت 0مل من الممح الطبيعي . 9% والمجموعة الثانية عولجت . 0.1 مل من عقار الت ا رمادول.النتائج:-شوهد من خلال الفحص النسيجي تثخن في جدار الكبد وتميف قميل وانتشار خلايا التهابية وتنكسات في خلايا الكبدية . اما في الكمية وجود خلايا التهابية واحتقانوتموت النبيبات كذلك في الماغ هناك تحطم في خلايا الهرميه في القشرة واحتقان في المب والقشرة.كذلك استخدمت تقانة التضاعف العشوائي المتعدد) ربد (المتعدد عمى تقانة)بي سي ار (باستخدام 5 ب ا ريم ا رت بينت النتائج لمتحميل الو ا رثي هناك اختلافا واضحا في عدد الحزم وكذلك في البعد الو ا رثي مقارنة مع السيطرة. This study was to examine the histological changes in liver and kidney in tramadol -induced rabbits . This study was conducted on 10 adult male rabbits. Rabbits. were divided evenly into two groups: control group, received 1 ml normal saline 0.9% Treated group received 0.3 ml of tramadol subcutaneously for 30 days. Results: The histological analysis of the liver showed that the thickening wall with minimal fibrosis in the periportal area infiltration of inflammatory cells in necrotic change of the hepatocytes massive vacuolation of the hepatocyte, kupffer cell were present intensity in the sinusoid. The histopathological examination of kidney revealed lymphocyte infiltration, congestion, glomerulus and tubular damage. The tubular was containing hypertrophied epithelial cell which block the lumen .Brain tissues in treated groups showed degeneration of pyramidal cells in the cortex, congestion of the blood vessels in the cortex and medulla. The cortex certain pyramidal cell with slight enlarged. The random amplified polymorphic DNA (RAPD) based on Polymerase Chain Reaction (PCR) with 5 primers were applied, used to estimate fingerprinting and Genetic Distance for 3organs . the results showed clear difference in the number of packets as well as in the genetic dimension compared to the control group. Conclusion: The histopathological and molecular alterations of liver, kidney and brain tissues threw lights on the possible risks of increased hepatic, renal and neurological damages evoked by repeated administration of tramadol for long periods.

Article • *Open access*

☐	140	**The effect of the selection for the age trait at sexual maturity of two generations in the productive performance of Black Japanese quail bird**	Al-Tikriti, S.S.A.	Advances in Animal and Veterinary Sciences , 6(12), pp. 548–555	2018	1

Document title	Authors	Source	Year	Citations

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This study was conducted in the Field of Department of Animal Production belonging to College of Agriculture, University of Tikrit for the period from 1/10/2013 until 1/6/2014 to determine the effect of the selection for the age trait at sexual maturity of black Japanese quail bird on some productive traits, in the study, A 60 birds were used from the assigned herd of the previously mentioned Department. The birds were individually distributed in cages and recorded the date of the first egg for each female. The selected females were divided into three groups: early, medium and late age at sexual maturity. Each group included five families with one male and three females per family. The total number used in the study was 15 males and 45 females. The eggs were hatched to produce the sons's generation according to their groups and their families, the productive characteristics were recorded for both parents and sons. The results showed significant superiority of late sexual maturity group in the average body weight at sexual maturity compared to early sexual maturity group. The early sexual maturity group has excelled in the trait of the average egg production and feed consumption compared to the medium and late sexual maturity group. The early sexual maturity group has excelled in the trait of the average egg production and feed consumption compared to late and medium sexual maturity group. The early and medium sexual maturity group excelled in egg mass and dietary conversion efficiency compared with late sexual maturity group, while no significant difference was observed in the average weight of the first egg and the weight of eggs between the selected groups of early, medium and late age at sexual maturity.

Article • *Open access*

☐	141	**Clay mineral typing in the shale units of the Kaista and ora formations of north Iraq: Implications for depositional environments | انواع المعادن الطينية في وحدات السجيل لتكويني كاييستا و او ا ر من شمالي الع ا رق: استعمالها في تفسير البيئة الترسيبية**	Al-Hazaa, S.H.	Iraqi Journal of Agricultural Sciences , 49(4), pp. 601–610	2018	2

Document title	Authors	Source	Year	Citations

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يتناول هذا البحث التحميل باستخدام حيود الأشعة السينية والمجهر الماسح الالكتروني لوحدات السجيل من تكويني كاييستا و او ا ر) بعمر الديفوني -الكاربوني المبكر(من شمالي الع ا رق .التركيب المعدني متماثل الى حد ما في التعاقب قيد الد ا رسة وتشكل معادن الكاوولينايت, الالايت, الكمو ا ريت والباليكورسكايت المعادن الطينية الرئيسية بينما يشكل الكوارتز والفدسبار والكالسايت والدولومايت المعادن غير الطينية ضمن وحدات السجيل قيد الد ا رسة. يشيع وجود معدن الكاوولينايت قياسا الى اللايت في وحدات السجيل لتكوين كاييستا, بينما يشيع معدني اللايت والكمو ا ريت والباليكورسكايت قياسا الى معدن الكاوولينايت لوحدات السجيل لتكوين او ا ر. مجموعة المعادن الطينية هي عمى الاغمب فتاتية الاصل تعكس ظروف مناخ رطب قميلا او جاف والتي تؤثر في التجوية الميكانيكية لصخور الاصل بينما معدن الباليكورسكايت هو موضعي النشأة تكون في ظروف تبخرية ضمن البيئة تحت المدية البحرية لسجيل تكوين... This paper reports the results of X-ray diffraction mineralogical and Scanning electron microscopic (SEM) studies of the shale units in the Devonian-early Carboniferous Kaista and Ora formations from northern Iraq. The mineral composition is uniform throughout the studied succession, kaolinite, illite, chlorite, and palygorskite form the main clay mineral assemblage while quartz, feldspar, calcite and dolomite form the non-clay fraction of the studied shales. Kaolinite dominates over illite in the Kaista shale, whereas, illite and chlorite with common palygorskite dominate over kaolinite in the Ora shale. The clay mineral assemblage is largely of detrital origin and indicates rather cool and/or dry climatic conditions favouring mechanical erosion of the source rocks. Palygorskite is of authigenic origin in evaporative conditions mostly in the subtidal Ora shales.

Article

☐ 142 **Effect of sub-lethal dose of some insect growth inhibitors on some physical features of wings cuticle of Amercinca cockroach Periplaneta Americana**

Mansor, M.S., Al-Mallah, N.M.

Iraqi Journal of Agricultural Sciences , 48(5), pp. 1255–1262

2017

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The results of treating the last nymphal instar of periplaneta americana by sub-lethal dose (o.1 ml of 0.2%) of Azadirachtin . Lufenuron and Methoxyfenozide . on some physical features of adults wings produced from treated nymphs. The results revealed asignificant variation in wings cuticle resistance to electrical current between treatment and control. The control treatment showed a highest degree of electrical resistance in front and hind wings of right and left direction and reached 157.89 . 170.89 . 134.33 . and 170.89 omh/m respectively. The electrical resistance of wings cuticle in treatments were varied according to the kinds of insect growth in hibitors . The same treatment also exhibited a varied degree of wings absovption to ultra violet and infrared rays at different wave length according to the kind of IGR and wave length in comparison with control treatment . these results confirmed that IGR changed the texture and components of the treated wings with IGR.

Article

☐ 143 **Some physical properties of essential oil of Baraka seed Nigella sativa L. impacted by bat guano otonycteris hemprichii camd and seaweed extract**

Al-Mohammedi, A.N., Al-Mehemdi, A.F., Al-Mehemdi, O.H.

Iraqi Journal of Agricultural Sciences , 47(4), pp. 1124–1131

2016

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Document title	Authors	Source	Year	Citations

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Some fertilizers practices could be used to improve Baraka seed Nigella sativa L. as a medicinal crop like organic farmyard manure which efficiently applied to enhance growth and yield. Thus, a field experiment was conducted out at Research Station in Tikrit-Iraq during 2012/2013 season to estimate the impact of bat guano (0, 75, 125 and 175 kg.ha-1), seaweed extract as kelpak (0, 1, 2 and 3ml.l-1) on some physical and chemical essential oil components. Two factors were arranged in factorial experiment in randomized complete block design with three replicates. Thus, results revealed that application of bat guano at 125 kg.ha-1 was superior in enhancement of essential oil and its some physical and chemical properties as essential oil% of 1.53%, specific gravity of 0.95 g.cm-3, refractive index of 1.82, essential oil density of 0.93, dithymohydroquinone of 37.44µg.µl-1 and thymol of 25.73 µg.µl-1. Moreover, kelpak (3ml.l-1) significantly improved physical and chemical properties of essential oil which were essential oil% of 1.52%, specific gravity of 0.93 g.cm-3, refractive index of 1.72, and essential oil density of 0.94 and thymol of 25.92 µg.µl-1. Whereas, the main component dithymohydroquinone effected by application of 2 ml.l-1kelpak of 37.04 µg.µl-1. It could be recommended to use bat guano as alternative to chemical fertilizer fortified with foliar application of seaweed extract as kelpak so as to improve physical and chemical properties of essential oil.

Article

144 **Responses of chicken sertoli cells and fibroblasts after transfection with plasmids pEGFPN3-HNP-1**

Khalid, A., Na, Y., Jinyou, Z., ... Xunwu, Z., Guixue, Z.

Pakistan Veterinary Journal , 35(4), pp. 504–509

2015

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Chicken Sertoli cells (SCs) and fibroblast cells (FCs) were transfected with two different plasmid vectors to study their comparative responses to transfection and to heterogenous protein appeared in vitro cultures of both cell lines. Sertoli cells and FCs (control) were transfected with plasmids pEGFP-N3-HNP-1 and pEGFP-N3 and efficacy was recorded. Subcellular localization of both proteins was observed. IL-1ß, IL-1RN, Fas, FasLG (FasL) and Caspase-3 expressions were examined using Real-Time PCR. The fibroblast cells were more efficient in transfection activity than SCs. Moreover, plasmid pEGFP-N3 had higher capability of transfection compared to pEGFP-N3-HNP-1 plasmid. The cells confined the poisoning protein in large particles and non-poisonous protein appeared all over cell in thin particles. The inflammatory response of SCs to non-poisonous heterogenous protein was lower than to poisonous heterogenous proteins compared to FCs. The FasL response of SCs to poisonous protein was faster than to non-poisonous proteins. It is concluded that Sertoli cells may create strong resistance against transfection than fibroblast cell, while the former contain large amounts of harmful/poisonous proteins that may modulate a quick inflammatory response. The quick inflammatory response may lead to apoptosis in Sertoli cells which is thought to be a way to get rid of unhealthy cells.

Article • *Open access*

	Document title	Authors	Source	Year	Citations
145	**Immunocytochemical localization of carbonic anhydrase in the pseudobranch tissue of the rainbow trout Oncorhynchus mykiss**	Rahim, S.M., Mazlan, A.G., Simon, K.D., Delaunoy, J.P., Laurent, P.	Journal of Zhejiang University: Science B, 15(2), pp. 194–200	2014	7

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Pseudobranch function has long interested scientists, but its role has yet to be elucidated. Several studies have suggested that pseudobranchs serve respiratory, osmoregulatory, and sensory functions. This work investigated the immunolocalization of pseudobranch carbonic anhydrase (CA) in the teleost fish species rainbow trout (Oncorhynchus mykiss) to clarify its physiological function. CA was purified from rainbow trout gills O. mykiss and specific antibodies were raised. Immunoblotting between tissue homogenates of pseudobranch and gill CA antibodies showed specific immunostaining with only one band corresponding to CA in the pseudobranch homogenate. Results of immunohistochemical technique revealed that CA was distributed within pseudobranch cells and more precisely in the apical parts (anti-vascular) of cells. The basal (vascular) parts of cells, tubular system, blood capillaries, and pillar cells were not immunostained. Immunocytochemistry confirmed these results and showed that some CA enzyme was cytoplasmic and the remainder was linked to membranous structures. The results also showed that the lacunar tissue layers did not display immunoperoxidase activity. Our results indicated that pseudobranch CA may have a function related to the extracellular medium wherein CA intervenes with the mechanism of stimulation of afferent nerve fibers. © 2014 Zhejiang University and Springer-Verlag.

Article • *Open access*

146	**Influence of addition of different antibiotics in semen diluent on viable bacterial count and spermatozoal viability of Awassi ram semen**	Azawi, O.I., Ismaeel, M.A.	Veterinary World, 5(2), pp. 75–79	2012	13

Document title	Authors	Source	Year	Citations

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The objectives of the present study were to determine the effects of six different antibiotics in controlling the growth of semen contaminating bacteria and if these antibiotics have any adverse effect on Awassi ram spermatozoa. Semen samples from six mature Awassi rams were used in this study. A total number of 120 ejaculates were collected from the rams using an artificial vagina once a week. Semen ejaculates were evaluated for volume, sperm concentration, mass motility, individual motility, percentage live sperm, sperm abnormalities, and viable bacterial count. Semen samples were diluted by sodium citrate-fructose-egg yolk. The diluted semen sample was divided into 7 parts. Six types of antibiotics were added to the semen diluent parts including; penicillin G 1000 IU ml -1 with streptomycin 1 mg ml -1, gentamicin sulphate 250 mg ml -1, tetracycline 0.5 mg ml -1, lincomycin 1 mg ml -1, cefoperazone sodium 1mg ml -1, cefdinir 1 mg ml -1 and the seventh part considered as a control group without antibiotic addition. The diluted semen samples were cooled and preserved at 5 C o for 5 days. Cooled diluted semen samples were examined for individual motility, percent of live sperm, sperm abnormalities, acrosomal defects and bacterial count every 24 h until 5 days. Comparing with the control, all the antibiotics examined were effective in controlling bacterial growth (P<0.05) from 24 h to 96 h of preservation at 5 C o. Cefdinir and cefoperazone sodium proved to be significantly (P<0.05) effective than other antibiotics in controlling bacterial growth at 96 h of preservation as the bacterial count were 23.3 ± 3.7 × 10 3 / ml and 25.4 ± 6.2 × 103 / ml, respectively. Lincomycin, gentamicin sulphate and tetracycline proved ineffective in controlling bacterial growth at 96 h of preservation as the bacterial count were 57.1 ± 20.1 × 10 3 / ml, 52.5 ± 29.4 × 10 3 / ml and 46.5 ± 8.8 × 10 3 / ml, respectively. The addition of tetracycline to diluted ram semen significantly reduced (P<0.05) sperm individual motility and percent live sperm and a significant increase (P7lt;0.05) acrosomal defects was observed at 96 h of preservation in comparison to control and other antibiotics. Sperm viability was highly correlated with bacterial count in the control part of diluted semen (r = 0.794; P < 0.01). It could be concluded from the results of the present study that additions of cephalosporins (cefdinir or Cefoperazone sodium) at the dose of 1 mg ml -1 were most effective amongst the antibiotics used in checking the bacterial growth and improving semen quality of Awassi ram.

	Article					
☐ 147	**Effect of ginger (Zingiber officinale) on performance and blood serum parameters of broiler**	Mohamed, A.B., Al-Rubaee, M.A.M., Jalil, A.Q.	International Journal of Poultry Science, 11(2), pp. 143–146	2012	43

	Document title	Authors	Source	Year	Citations

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This study was carried out at the Poultry of Animal Resource, College of Agriculture, Tikrit University. The present study was conducted to explore the usage of different levels of ginger at concentration of 0.1 and 0.2% respectively supplemented to diets on the Performance and blood serum traits of the Broiler Chickens. 180 (ROSS) 3 weeks old broiler chicks raised to 6 weeks of age. The birds were distributed into 3 treatment groups with three replicates per treatment (20 birds per replicate + 10 females). Ginger (Zingiber officinale) was supplemented at the rate 0.1 and 0.2% in the diets to treatments T2 and T3 respectively while treatment one served as control. The result of performance parameter showed significant difference between treatments. However body weight, weight gain, FCR and feed intake showed a significant differences ($p<0.05$) between T2 (0.1% ginger) and T3 (0.2% ginger) and control. The total protein didn't differ significantly between the treatment groups. Serum cholesterol, triglyceride and glucose level was a significantly lower in the 0.1 and 0.2% of ginger ($p<0.05$) than control. Findings of the research study indicated that groups receiving ginger at the rate of 0.1 and 0.2% of the diets showed better performance and serum profiles in broiler.

Article • *Open access*

☐ 148 **The effect of Iraqians High Environmental Temperature on Growth Performance in two lines of Japanese quail**

Aljumaily, T.K.H.

International Journal of Poultry Science, 10(8), pp. 634–636

2011

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This study was conducted to investigate the potential effect of Iraqians High Environmental Temperature on Growth Performance in two lines of Japanese quail. Four-hundred eighty mixed 1-day old chicks were randomly assigned to 12 replicates of 20 chicks per replicate for each strain. The birds were exposed to ambient Iraqi environmental conditions. The average daily high temperature during the experimental period, averaged 30°C ranging between 24-36°C. The results showed that there was Brown strain had higher body weight than those white strain. Feed intake level of White strain and Brown strain and gain day less body weight and had significantly ($p\leq0.05$) poorer FRC. The mean values of dry matter, protein and ash in breast and thigh quail meat were not influenced by different strains, fat and free water content in breast and thigh meat were significantly higher ($p\leq0.05$) in Brown strain than those of White strain.

Article • *Open access*

☐ 149 **Effects of Zingiber officinale aqueous extract on semen characteristic and some blood plasma, semen plasma parameters in the broilers breeder male**

Saeid, J.M., Shanoon, A.K., Marbut, M.M.

International Journal of Poultry Science, 10(8), pp. 629–633

2011

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Document title	Authors	Source	Year	Citations

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To investigate the effects of Zingiber Officinale on male reproductive functions and study the mechanisms underlying these effects, aqueous extract of Zingiber officinale were administered in drinking water to two groups of male broilers breeder (24wk age) at 5% and 10%. A third group served as control and received the treatment vehicle, distilled water. Treatment lasted for 28, 32, 36, 40 and 44 wk age. Ejaculate volume, sperm concentration, counts, movements, motility and abnormality, semen plasma cholesterol, protein and glucose, the antioxidant malonhydialdehyde, glutathione and blood serum LH, FSH and testosterone, were determined. The treatment caused a significant increase ($p<0.05$) in the weight of the testis and There were dose and duration dependent increases in ejaculate volume, sperm concentration, counts, movements and a significant decrease ($p<0.05$) in motility and abnormality. There was also a significant increase ($p<0.05$) in semen plasma cholesterol, glucose and a significant decrease ($p<0.05$) in protein. Antioxidant malonhydialdehyde were significantly reduced ($p<0.05$), glutathione and blood serum LH, FSH and testosterone serum level were significantly increase ($p<0.05$). Our results indicated that extract of Zingiber officinale possesses pro-fertility properties in male broiler which might be a product of both its potent antioxidant properties and androgenic activities. © Asian Network for Scientific Information, 2011.

Article • *Open access*

☐ 150 **Effect of dietary supplement yeast culture on production performance and hematological parameters in broiler chicks**

Saied, J.M., Al-Jabary, Q.H., Thalij, K.M.

International Journal of Poultry Science, 10(5), pp. 376–380

2011

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Twenty-one-day-old commercial broilers chicks (Ross) were used in completely randomized design to evaluate the efficacy of Saccharomyces cerevisiae (SC), grown at 3% Wheat Bran (WB) used solid state fermentation process to produce Yeast Culture (YC), on growth performance and hematological parameters. The YC production test revealed that the fermentation of WB significantly ($p<0.05$) increased the crude protein and decreased the crude fiber percentage. At 42 d of age birds supplemented with YC consumed more and grew faster and the better gain weight and Caracas weight than broilers given feed without YC. However, no effects observed in decreasing feed conversion ratio. Measurements of the birds blood parameters should that inclusion YC in the diet significantly increased the total protein, albumin, glucose and uric acid while decreased cholesterol and triglyceride concentration. Furthermore, the total WBC and lymphocytes counts were significantly ($p<0.05$) reduced, but did not effects on the hematocrit and hemoglobin concentrations when compared with the birds of control group. Also there was not significantly effecting on enzymes activity in blood serum of birds received YC. Overall, the maximum responses an achieved when the birds fed with T4 and T5, compared with the other treatments. © Asian Network for Scientific Information, 2011.

Article • *Open access*

	Document title	Authors	Source	Year	Citations
151	**Effect of aqueous extract of ginger (Zingiber officinale) on blood biochemistry parameters of broiler**	Saeid, J.M., Mohamed, A.B., Al-Baddy, M.A.	International Journal of Poultry Science, 9(10), pp. 944–947	2010	46

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This study was carried out at the Poultry of Animal Resource, College of Agriculture, University of Tikrit. The present study was conducted to explore the usage of different levels of aqueous extract of ginger at concentration of 0.4 and 0.6% respectively supplemented to drinking water on the Physiological Performance and Lipid Profile of the Broiler Chickens. One hundred and eighty of 3 weeks old broiler chicks (ROSS) raised to 6 weeks of age. The birds were distributed into 3 treatment groups with three replicates per treatment (20 birds per treatment). Aqueous extract of ginger was the rate 0.4 and 0.6% with water offered to treatments T2 and T3 respectively while treatment one served as control. The result of the physiological parameter showed significant difference between treatments. However glucose and uric acid level showed a significant differences ($p<0.05$) between T2 (0.4% ginger extract) and T3 (0.6% ginger extract) and control. The total protein, Albumin and Globulin were not differ significantly between the treatment groups. Serum HDL-cholesterol, LDL-cholesterol and VLDL-cholesterol level revealed no significant ($p>0.05$) difference between treatments but serum cholesterol level was a significantly lower in the 0.4 and 0.6% aqueous extract of ginger ($p<0.05$) than control. Findings of the research study indicated that groups receiving ginger infusion at the rate 0.4 and 0.6% of drinking water showed better physiological performance and lipid profiles in broiler.

Article • *Open access*

	Document title	Authors	Source	Year	Citations
152	**Effect of dietary coriander seeds supplementation on growth performance carcass traits and some blood parameters of broiler chickens**	Saeid, J.M., Al-Nasry, A.S.	International Journal of Poultry Science, 9(9), pp. 867–870	2010	21

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A trial was conducted to determine the effect of different levels of coriander seed supplementation in diets on performance and blood parameters in broilers. Two hundred and fourty (1-day old) commercial broiler chicken (ROOS) were divided into groups of 60 birds in each and randomly assigned to four treatment diets with three replicate. Birds were fed basal diets or the basal diet supplemented with 0.1, 0.2 and 0.3% of coriander seed. Experiment was continued 42 days. Birds that fed 0.3% coriander seed diet exhibited the largest body weight gain, feed conversion ratio and carcass yield and decreased feed intake and fat pad (%BW). There was differences in PCV%, RBC counts and Hb concentration in 0.3% coriander seed supplemented groups, but differences of the other group were not statistically important. There was no different in total number of WBC, H/L as well as H/L ratio among the treatment groups. There was no significant difference for GPT and GOT enzyme activity between the treatments. The coriander seed supplementation also led to decrease the glucose and cholesterol concentration in blood serum. Based on the results of this study, it could be advised to supplement broiler feed with 0.3% coriander seed.

	Document title	Authors	Source	Year	Citations
	Article				
153	**The effects of carbon dioxide Pneumoperitoneum on certain enzyme levels in dogs**	Al-Badrany, M.S., Mustafa, N.G., Al-Anzy, M.M.Y.	Journal of Animal and Veterinary Advances, 8(5), pp. 946–948	2009	1

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The aim of the present study was found any changes in the Alanine Amino Transferase (ALT), Aspartate Aminotransferase (AST) and Ceratine Kinase (CK) of carbon dioxide insufflation. Seven adult dogs were used in the experiment. All animals were given ketamine-xylazine as general anesthesia Pneumoperitonuim was done with CO2, gas insufflation was kept at a constant of 8 L min-1 and 12 mmHg throughout the experiment. ALT, AST and CK were measured at the beginning before given general anesthesia, before insufflation and 60 min, 24 h and 1 week after insufflation. The study show significant increase in ALT, AST and CK, 60 min after insufflation with CO2 while, it retrained to normal value after 7 days. All changes not pass the normal range that's present in dogs and this put our to believe that pneumoperitoneum with CO2 is suitable and safe method in dogs. © Medwell Journals, 2009.

	Article				
154	**Ascorbic acid content in buffalo milk**	Jandal, J.M.	Indian Journal of Animal Sciences , 66(10), pp. 1078–1081	1996	0

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	Article				
155	**Comparative aspects of goat and sheep milk**	Jandal, J.M.	Small Ruminant Research , 22(2), pp. 177–185	1996	193

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The purpose of this paper is to review the several differences in physico-chemical, medical, nutritional, biological, radioactivity and immunological aspects of goat and sheep milk. It also deals with changes in milk constituents due to heat treatments as well as dairy products produced from these species to focus international attention on the dairy products which can be produced a large scale in many countries.

	Article				

	Document title	Authors	Source	Year	Citations
156	**Factors affecting ascorbic acid content and keeping quality of Shammi goat milk**	Jandal, J.M.	Small Ruminant Research , 21(2), pp. 121–125	1996	4

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The effect of pasteurization (65°C for 5 s; 65°C for 30 min; 72°C for 15 s; or 85°C for 5 s); preheating (75°C or 75°C); forewarming (90°C or 95°C); boiling (100°C or 100°C for 15 min), shaking (15 min); freezing (-20°C); heavy metals (Cu, Fe, Ni and Cr); sunlight and subsequent storage on the ascorbic acid of Shammi goat milk were investigated. In addition, the influence of garlic and onion extracts at levels of 1%, 2%, 3% and 4% on the keeping quality of these milk samples was investigated. The ascorbic acid content in treated milk samples was reduced more rapidly as the time of exposure, the temperature and storage period increased. It was also shown that different types of container afforded different degrees of protection for ascorbic acid. Treatment of milk samples with garlic extract at a level of 1-4% or onion extract at a level of 1-2% can extend the keeping quality of milk samples for up to 4 days and treatment with onion extract at a level of 3-4% for up to 5 days. It can be concluded that exposure of Shammi goat milk to sunlight, heat treatments, heavy metals, shaking and storage period accelerated the loss of its ascorbic acid ($P < 0.01$).

Article

157	**Effects of some thermal, chemical and mechanical treatments on lipase activity in Shammi goat milk**	Jandal, J.M.	Small Ruminant Research , 20(3), pp. 275–279	1996	6

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The effects of heating (20, 37 or 50°C), cooling (5°C), pasteurisation (71°C for 15 s), boiling (100°C), agitation (5 or 10 min), pH (acid or alkaline), and addition of chemicals such as silver and lead nitrates, copper sulphate and sodium chloride on lipase activity in Shammi goat milk were studied. There were non-significant differences ($P < 0.01$) in chemical composition between Shammi goat milk and Arabi cow milk. Lipase activity in Shammi goat milk was non-significantly ($P < 0.01$) lower than in Arabi cow milk. Lipase activity in milk of Shammi goats and Arabi cows was reduced when the milk was subjected to heating, cooling, pasteurisation, boiling, or when chemicals or acid was added, whereas in agitated and alkaline milk, the lipase activity was increased. The increase following agitation was greater after 10 min than 5 min. It can be concluded that heating, pasteurising, boiling, cooling, addition of certain chemicals and acidity are means by which lipase activity in milk can be reduced.

Article

158	**Studies on dried fermented dairy products prepared from sheep milk**	Jandal, J.M.	Small Ruminant Research , 21(3), pp. 217–220	1996	5

	Document title	Authors	Source	Year	Citations

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This study was conducted on the chemical composition and flavour components of a dried fermented dairy product (Chethi). The average values (%) of titratable acidity (1.78 ± 0.20), moisture (2.76 ± 0.89), total solids (97.28 ± 0.78), fat (31.64 ± 0.03), free fatty acids (23.98 ± 2.46) of total lipids, total nitrogen (4.53 ± 0.22), total protein (28.90 ± 0.10), soluble nitrogen (1.63 + 0.02), soluble protein (10.91 ± 0.07), lactose (36.25 ± 2.18), total ash (3.24 ± 0.01), calcium (0.26 ± 0.001), magnesium (0.03 ± 0.001), phosphorous (0.18 ± 0.002), chloride (1.58 ± 0.070) and sodium (1.16 ± 0.010) were determined. Moreover, the average contents (mg per 100 g) of formaldehyde (0.10 ± 0.0004), acetaldehyde (0.15 ± 0.0006), acetone (0.13 ± 0.001), acetoin (0.21 ± 0.009), ethanol (0.32 ± 0.002) and diacetyl (0.38 ± 0.030) were also estimated. There was a non-significant difference in the analysed Chethi samples except for lactose and free fatty acids, which had significant differences. The study showed that this product can be considered an ideal food for human nutrition due to its high level of calcium and phosphorous.

Article

☐ 159 **Effect of thermal, physical and chemical treatments on FFA contents in Awassi sheep milk**

Jandal, J.L.

Small Ruminant Research , 22(1), pp. 49–53

1996

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The influence of cooling (5°C); heating (20° or 50°C); pasteurization (71°C for 15 s); agitation (5 or 10 min); boiling (100°C); pH changes and certain chemicals (copper sulphate, lead nitrate, silver nitrate, and sodium chloride) on lipolysis in Awassi sheep milk and local cow milk stored at 5°C for 24 h was investigated. Lipolysis in the control Awassi sheep milk (0.49 μeq FFA ml-1) was significantly different than in the control local cow milk (0.36 μeq FF A ml-1). Lipolysis in cooled Awassi sheep milk (0.23 μeq FFA ml-1) was significantly different compared with cow milk (0.13 μeq FFA ml-1). Pasteurization and boiling caused a decrease in lipolysis in sheep milk as compared with fresh sheep and cow milk examined at 37°C and stored for 24 h at 5°C. Agitation resulted in slightly higher lipolysis in sheep milk than in cow milk. Addition of chemicals resulted in significant increase in lipolysis. Lipolysis in acidified sheep milk (0.14 μeq FFA ml-1) was significantly different than in acidified cow milk (0.11 μeq FFA ml-1). It was also significantly different in sheep milk (0.57 μeq FFA ml-1) than in cow milk (0.74 μeq FFA ml-1) to which a NaOH solution was added. It was observed that lipolysis in Awassi sheep and local cow milk could be significantly reduced by boiling or pasteurizing.

Article

☐ 160 **Studies on biliverdin in Awassi sheep milk**

Jandal, J.M.

Small Ruminant Research , 18(3), pp. 273–275

1995

1

Document title	Authors	Source	Year	Citations

Hide abstract View at Publisher Related documents

The average contents of conjugated and free biliverdin in Awassi sheep milk was 1.98 and 3.72 µg 100 ml-1 milk. Boiling of milk samples caused a decrease in the conjugated form and an increase in the free form. Storage of milk samples for 3 and 6 days showed a decrease in the conjugated form and an increase in free form. Fluctuations within milk samples stored at room temperature were higher compared with refrigerated milk samples. This study indicated significant ($P < 0.01$) influence of boiling and storage temperatures on the contents of biliverdin forms. © 1995.

Article

☐ 161 **Some factors affecting lipase activity in goat milk** | Jandal, J.M. | Small Ruminant Research, 16(1), pp. 87–91 | 1995 | 13

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The influence of different temperatures (20 °C, 37 °C and 50 °C), pasteurization (71 °C for 15 s), boiling (100 °C), agitation for 5 and 10 min, pH changes (milk on acidic and alkaline side of pH), certain chemicals (copper sulphate, silver nitrate, lead nitrate and sodium chloride) on the lipase activity in local goat and cow milks was investigated. There were no significant ($P > 0.01$) differences in gross chemical composition between local goat and cow milks. Lipase activity in goat milk (2.76 µeq/ml) was non-significantly lower than in cow milk (3.78 µeq/ml) at 37 °C. Lipase activity in cold milk (5 °C) was non-significantly ($P > 0.01$) lower in goat milk (2.50 µeq/ml) compared to cow milk (3.22 µeq/ml). Effect of different temperatures (20 °C and 50 °C) on lipase activity was non-significantly ($P > 0.01$) lower in goat milk (2.63 µeq/ml at 20 °C and 2.46 µeq/ ml at 50 °C) than in cow milk (3.65 µeq/ml and 3.43 µeq/ml, respectively). Pasteurization and boiling milk caused a non-significant ($P > 0.01$) decrease in lipase activity in goat (0.47 µeq/ml and 0.10 µeq/ml) and cow (0.53 µeq/ml and 0.12 µeq/ ml) as compared to fresh goat (2.76 µeq/ml) and cow (3.78 µeq/ml) milks examined at 37 °C. Agitation showed non-significantly lower lipase activity in goat milk (6.52 µeq/ml) at 5 min and at 10 min (7.23 µeq/ml) than in cow milk at 5 min (7.17 µeq/ml) and 10 min (8.04 µeq/ml). Effects of added chemicals were more pronounced in cow milk than goat milk, but copper sulphate had more inhibition effect on lipase activity than lead, silver and sodium. Lipase activity in goat milk (4.13 µeq/ml) on the alkaline side of pH was non-significantly higher than in cow milk (3.96 µeq/ml), while it was non-significantly lower in goat milk (2.01 µeq/ml) and cow milk (2.64 µeq/ml) on the acidic side of pH. It can be concluded that lipase activity can be enhanced by agitation and alkaline side of pH or reduced by heating, pasteurizing, boiling, cooling, addition of certain chemical and the acidic side of pH. © 1995.

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