College: Colleg of Veterinar **Name of Student: zainab abdul husseien soud**
Dep.: **Name of Supervisor: jalal yassein mustafa**
Certificatte: master **Specialization: veterinary puplic health**

Tital of Thesis

Prevalence of Antibiotic Susceptibility Test of Gram Negative Pathogen in Poultry Carcass and Environment Slaughter in Basra Province

Abstract of Thesis

Summary

This study was conducted to estimate the prevalence of *E. coli, Klebsiella pneumonia, Citrobacter frerndi, Salmonella* and *E. coli* O157:H7 in poultry meat via conventional techniques and Polymerase Chain Reaction (PCR) techniques on these isolates, and to determine antimicrobial resistance genes of the isolated *E. coli* depended on determination of genes by Polymerase Chain Reaction (PCR) techniques on these isolates. Five hundred samples were collected at the period extending from 16 September 2016 to 20 may 2017 these samples include (100 samples from environment, 200 samples from skin of carcass, 200 samples from muscles of wings and thigh in the carcass). The current results show that the highest percentage of contamination occur by *E. coli* in October at rate 30 (81%), E coli O157 in November 10 (14%), *Klebsiella pneumomia* in February at rate 40 (60%), *Citrobacter* in the May at the rate 30 (75%) and *Salmonella* in the May at the rate 5 (12%). In total the percentage of contamination were *E coli* 266 (53%), *E coli O157* 47 (9.4%), *Klebsiella pneumomia* 183 (36.6), *Citrobacter* 143 (28.6%) and *Salmonella* 7 (1.4%) The results reflected that the *E coli* highest percentage of ntamination in the environment and skin followed by *Klebsiella pneumomia, Citrobacter, E coli O 157 and Sallmonella* respectively. while in Muscles the highest percentage of contamination occur by *Citrobacter* followed with *Klebsiella pneumomia*, *E coli*, *E coli O 157* and *Salmonella* respectively.Moreover thirty six samples of *E coli* which are identified by vitek, they are tested for their antimicrobial susceptibility against 8 antimicrobial agents by using dis diffusion method. Most specimens showed 100% resistance to Amoxicillin and Penicillin and (97%), (94.5%), (91%) and (81.5%) were resistance to Erythromycin, Tetracycline, Trimethoprim and chloramphenicol respectively. On the other hand they were found to be 100 % sensitive to Gentamycin and treptomycin.The results of multiplex polymerase chain reaction (PCR) for detection antimicrobial resistance genes of *E coli* which are confirmed by antimicrobial sensitivity test showed the positive results as 19 (52%) for each B- lactams *blaTEM-1* and erythromycin [*ere*(A)], in addition to 10 (27.7%), 7 (19.4%), and 3 (8.3%) for trimethoprim (*dfrA1*), tetracycline *(tet B)* and chloramphenicol *(cmlA*) respectively. Six (16.6%) strain resistance to single antimicrobial agent, thirteen (36.1%) isolated were found to be show resist to two antimicrobial agents and a multi-resistance which is defined as a resistance to three or more tested agents was found in 17 (47.3%) of *E coli* strains while the results are negative genes for Streptomycin (*aadA1*), Gentamicin [*aac(3)-IV*], Chloramphenicol (*catA1)* and Tetracycline *(tet* A). In addition to the PCR technique used to confirm the genus

of other bacteria the result indicated that *Klebsiella pneumonia* 17 (57%) samples are positive for *Ecpa* gene, 22 (73%) samples for *Citrobacter viaB gene* , 5 (29%) samples are positive for *Sallmonella invA* gene, while all samples were negative for *E coli O157:H7* which produce Shiga toxin *Stx1* and *Stx2*.The susceptibility test of the of *Klebsiella pneumonia* isolates reveales that all isolates are resisting to 100% to amoxicillin, penicillin, whereas, 14 (82%), 13 (76%), 11 (65%) and 9 (53%) are resisting to Chloramphenicol, Trimethoprim, Tetracycline, and Erythromycin respectively, while 17 (100%) were sensitive to Streptomycin and Gentamycin. Also, the distribution of the antimicrobial resistance agent in the *Citrobacter freundii* (22 strains)were includs 100 % resistance for amoxicillin and penicillin, and 18(82%), 17 (77%), 12 (54%) and 5 (23%) resistance for Erythromycin, Tetracycline, Trimethoprim, and Chloramphenicol respectively. The results appeare 22 (100%) strains of *Citrobacter freundii* are sensitive for Gantamycin, streptomycin. While of antimicrobial resistance agent in the five of *Salmonella* include 3(60%) resistance for tetracycline, erythromycin, amoxicillin, penicillin and Trimethprime, while all the samples are susceptible to Gentamycine, Streptomycin and Chloramphenicol.Moreover, the susceptibility test of the *E coli O157:H7* is identified by culture media and conventional biochemical test. These results revealed that all 47 (100%) resist to Ampicillin, Amoxicillin, Penicillin, Erythromycin and Tetracycline, whereas, found 40 (85%), 34 (72%), 19 (40%) and 13 (27%) resist to Trimethoprim, Chloramhpenicol, Streptomycin and Gentamicin, respectively.