Cairo University

Faculty of Veterinary Medicine

Department of Microbiology

A study on the etiology of Salmonellosis in equines with a special reference to gynecological problems in mares and neonatal deaths.

Thesis presented By

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For The Degree of Master in Vet. Med. Sciences

(Bacteriology, Immunology& Mycology)

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(2015)

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Abstract

In this study bacteriological examination of 217 fecal samples (145 fecal samples were taken from the rectum of diarrheic horses and foal , and 72 fecal samples from apparently healthy horses and foals) in addition to 69 Vaginal swabs and 24 double Guarded uterine swabs were collected from mares suffering of repeat breeder (infertility and miscarriage), and 8 swabs were taken aseptically from the stomach contents of the aborted fetuses revealed isolation of 8 *Salmonella* isolates with an overall incidence 2.52%. It was notice that out of 145 horses suffering of diarrhea 3 *Salmonella* isolates were recovered with a recovery rate 2.07 %, Regarding to 93 genital swabs collected from horses had infertility problems 4 samples were positive with a recovery rate 4.3%, moreover one out of 8 aborted fetuses was positive for *Salmonella* with a recovery rate 12.5%, while no *Salmonella* isolates could be recovered from apparently healthy horses. Serological identification of *Salmonella* revealed isolation of *Salmonella* Newport and *Salmonella* Kentuky with an incidence of 1.14% for each, while one isolate of *Salmonella* Typhimurium was recovered from 57 foals had diarrhea with an incidence 1.75%. In the present study, it was observed that the most recurrent serovar was *S.*Typhimurium which was isolated from 3 vaginal swabs of horses had infertility problem with an incidence of 4.35%. On the other hand *S.* Abortus equi could be isolated from horse suffering of infertility (repeat breeder) with an incidence of 4.12% and one isolates of *S.*Abortus equi could be recovered from stomach content of aborted 2 fetus. A total number of 8 *Salmonella* isolates were investigated for the presence of virulence genes revealed that all isolates harbor *inv*A gene and amplified 284 bp fragments. In the present investigation we studied the location of *pef* gene plasmid encoded fimbriae and *stn* gene *Salmonella* enterotoxin in total DNA or plasmid by using PCR. One isolate of *S.*Typhimurium (vaginal swab) detected harbor both *pef* and *stn* genes on the total DNA. The *stn* gene was encoded on plasmid DNA and amplified a region 600 bp in all isolates, While four isolates of *Salmonella* (*S.* Typhimurium (3) and *S.*Kentuky(1) possess *pef* gene and detected by the presence of 700 bp product that encoded in the plasmid DNA. We can concluded that the *stn* and *pef* genes were encoded mainly on plasmid DNA and hence on total DNA.

Key words : Salmonella ; PCR ; Plasmid ; virulence genes.

Dedication

To.....

.... The souls of Prof Dr/ Mahmoud Essam Hatem

And

Prof. dr. Abou Zeid Abd EL- Meguid Abou Zeid

.... my Mother who showed me my way through life.

.... my Father

.... my Kids Mohamed and Lily

Acknowledgment

Firstly I thanks ALLAH who gave me all the power to complete this work.

First of all, I thank ALLAH who gave me all the power to complete this work.

I would like to express my gratefulness and thanks to my ***Professor and father Dr. Mahmoud Essam Hatem Ahmed*** *and Professor* ***Dr. Abou Zeid Abd EL- Meguid Abou Zeid****, for their valuable supervision and encouragement to complete this work, asking God to bless them.*

My deep thanks to Professor ***Dr. Mohamed Kamal Refai*** *for his continuing the support of the thesis.*

All my appreciation to Dr. ***Amany Ibrahim El Bialy*** *for her patience and faithful helping, encouraging, generous advices to complete this work.*

My great thanks to ***Dr. Sherief Abd El Monem Omar****, Lecturer of Microbiology at Faculty of Veterinary Medicine for his continuous encouragement and help.*

My deep thanks to my brother ***Dr. Ahmed Osman Ahmed****, Faculty of Medicine for his help.*

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