
8. REFERENCES

- Abd Allah, B.M.B. (1991):** Studies on *Salmonella* microorganisms in fowls in Fayoum governorate. Thesis (M.V.Sc.), Microbiology, Fac. Vet. Med. Cairo Univ.
- Abd Allah, B.M.B. (1995):** The role of some wild birds in transmitting enterobacteriaceae infection to poultry farms. Thesis (Ph.D.), Fac. Vet. Med. Zagazig Univ.
- Abdel Rahman, M.A. and Moussa, H.M.M. (2000):** Studies on some aerobic bacterial causing of broilers. Egypt. J. Agric. Res., 78 (1): 25-33.
- Abdel Rahman, M.A.A. (2007):** Isolation, identification and characterization of *Salmonellae* from laying farms. Thesis (M.V.Sc.), Fac. Vet. Med., Cairo Univ.
- Akhtar, F.; Hussain, I.; Khan, A. and Rahman, S.U. (2010):** Prevalence and antibiogram studies of *Salmonella Enteritidis* isolated from human and poultry sources. Pakistan Vet. J., 30 (1): 25-28.
- Akter, M.R.; Choudhury, K.A.; Rahman, M.M. and Islam, M.S. (2007):** Seroprevalence of salmonellosis in layer chickens with isolation, identification and antibiogram study of their causal agents. Bangl. J. Vet. Med., 5 (1 & 2): 39-42.
- Alkhalif, A.; Alhaj, M. and Al-Homidan, I. (2010):** Influence of probiotic supplementation on immune response of broiler chicks. Egypt. Poult. Sci., 30 (I): 271-280.
- Al-Nakhli, H.M.; Al-Ogaily, Z.H. and Nassar, T.J. (1999):** Representative *Salmonella* serovars isolated from poultry and poultry environments in Saudi Arabia. Rev. Sci. Tech., 18 (3): 700-709.
- Angel, R.; Daloul, R.A. and Doerr, J. (2005):** Performance of broiler chickens fed diets supplemented with a direct-fed microbial. Poult. Sci., 84: 1222-1231.
- Arnon, R.M.; Shapira, A. and Jacob, C.O. (1983):** Synthetic vaccines. J. Immunol. Methods, 61: 261-273.
- Ayed, M.H.; Laamari, Z. and Rekik, B. (2004):** Effects of incorporating an antibiotic “avilamycin” and a probiotic “activis” in broiler diets. Proceed. West. Sec. Am. Soci. Anim. Sci., 55: 237-240.
- Babu, U.; Dalloul, R.A.; Okamura, M.; Lillehoj, H.S.; Xie, H.; Raybourne, R.B.; Gaines, D. and Heckert, R.A. (2004):** *Salmonella*

- Enteritidis** clearance and immune response in chickens following *Salmonella* vaccination and challenge. *Vet. Immunol. Immunopathol.*, 101 (3-4): 251-257.
- Babu, U.; Scott, M.; Myers, M.J.; Okamura, M.; Gaines, D.; Yancy, H.F.; Lillehoj, H.; Heckert, R.A. and Raybourne, R.B. (2003):** Effects of live attenuated and killed *Salmonella* vaccine on T-lymphocyte mediated immunity in laying hens. *Vet. Immunol. Immunopathol.*, 91(1): 39-44.
- Baggesen, D.L. and Wegener, A. (1995):** Phagetypes of *Salmonella enterica* app. *enterica* Serovar **Typhimurium** isolated from production animals and humans in Denmark. *Vet. Bull.*, 66 (1): 9.
- Bailey, J.S. (1987):** Factors affecting microbial competitive exclusion in poultry overview-outstanding symposia in food science and technology. *Food Tech.*, 88-92.
- Bailey, J.S.; Rolón, A.; Hofacre, C.L.; Holt, P.S.; Wilson, J.L.; Cosby, D.E.; Richardson, L.J. and Cox, N.A. (2007):** Intestinal humoral immune response and resistance to *Salmonella* challenge of progeny from breeders vaccinated with killed antigen. *International J. Poult. Sci.*, 6 (6): 417-423.
- Barbezange, C.; Humbert, F.; Rose, V.; Lalande, F. and Salvat, G. (2000):** Some safety aspects of salmonella vaccines for poultry: distribution and persistence of three *Salmonella Typhimurium* live vaccines. *Avian Dis.*, 44 (4): 968-976.
- Barbour, E.K., Frerichs, W.N.; Nabbut, N.H.; Poss, P.E. and Brinton M.K. (1993):** Evaluation of bacterins containing three predominant phage types of *Salmonella Enteritidis* for prevention of infection in egg-laying chickens. *Am. J. Vet. Res.*, 54: 1306-1309.
- Barnhart, H.M.; Dressen, D.W.; Bostien, R. and Pancorbo, A.C. (1992):** Prevalence of *Salmonella Enteritidis* and other serovars in ovary of layer hens at time slaughter. *J. Food. Prot.*, 54 (7): 488-491.
- Barrow, P.A. (1992):** Further observations on the serological response to experimental *Salmonella Typhimurium* in chickens measured by ELISA. *Epidemiol. Infect.*, 108 (2): 231-241.
- Barrow, P.A. (2000):** The paratyphoid *Salmonellae*. *Rev. Sci. Tech.*, 19: 351-375.
- Barrow, P.A. (2007):** *Salmonella* infections: Immune and non-immune protection with vaccines. *Avian Pathol.*, 36 (1): 1-13.

- Barrow, P.A. and Lovell, M.A. (1991):** Experimental infection of egg-laying hens with *Salmonella* Enteritidis phage type 4. Avian Pathol., 20: 335-348.
- Barrow, P.A.; Lovell, M. A. and Berchieri, A. (1990):** Immunization of laying hens against *Salmonella* Enteritidis with live attenuated vaccines. Vet. Rec., 126 (10): 241-42.
- Bernardo, F.M.A. and Machado, J.C.C. (1991):** Prevalence of *Salmonella* in boiler carcasses in Portugals epidemiological implications for man. Revista Portuguesa de Cinen Cias Veterinarias, 84: 31-45.
- Berthelot, H.F.; Nompert, F.; Zygmunt, M.S; Dubray, G. and Duchet, S.M. (2003):** Vet. Immunol. Immunopath., 15 (96): 43-52.
- Betancor, L.; Pereira, M.; Martinez, A.; Giossa, G.; Fookes, M.; Flores, K.; Barrios, P.; Repiso, V.; Vignoli, R.; Cordeiro, N.; Algorta, G.; Thomson, N.; Maskell, D.; Schelotto, F. and Chabalgoity, J.A. (2010):** Prevalence of *Salmonella enterica* in poultry and eggs in Uruguay during an epidemic due to *Salmonella enterica* Serovar Enteritidis. J. Clin. Microbiol., 48 (7): 2413-2423.
- Bjerrum, L., Engberg, R.M. and Pedersen, K. (2003):** Infection models for *Salmonella typhimurium* DT110 in day-old and 14-day-old broiler chickens kept in isolators. Avian Dis., 47: 1474-1480.
- Bogovic-Matijasic, B.; Rogelj, I.; Nes, I.F. and Holo, H. (1998):** Isolation and characterization of two bacteriocins of *Lactobacillus acidophilus* LF221. Appl. Microbiol. Biotechnol., 49: 606-612.
- Bohez, L.; Dewulf, J.; Ducatelle, R.; Pasmansa, F.; Haesebroucka, F. and Immerseel, F.V. (2008):** The effect of oral administration of a homologous hilA mutant strain on the long-term chickens. International J. Poult. Sci., 26 (3&17): 372-378.
- British Veterinary Codes (1970):** Pharmaceutical Press, London.
- Brown, S.L.; Kiln, F.T. and Jones, W.L. (1981):** Safranin O stained antigen microagglutination test for detection of brucella antibodies. J. Clin. Microbiol., 13: 398-400.
- Carli, K.; Eyigor, A. and Caner, V. (2001):** Prevalence of *Salmonella* serovars in chickens in Turkey. J Food Prot., 64 (11): 1832-1835.
- Carraminana, J.J.; Herrera, A.; Agustin, A.I.; yanguela, J.; Blanco,D. and Rota, C. (1996):** Prevalence of *Salmonella* Enteritidis and other serovares in broiler carcasses and livers from a Spanish slaughter house. Vet. Bull., 66(2): 101S

- Carsiotis, M.; Weinstein, D.L.; Karch, H.; Hoder, I.A. and O`brein, A.D. (1984):** Flagella of *S. Typhimurium* are a virulence factor in infected C57 BL16j mice. *Infect. Immun.*, 46, (3): 814-818.
- Cavit, A. (2003):** Effect of dietary probiotic supplementation on growth performance in the chickens. *Turkish J. Vet. Anim. Sci.*, 28: 887-891.
- CDC (2003):** Subject: *Salmonella* human isolates. <http://www.cdc.gov/search.do?action=search&queryText=salmonella+serotype+report> Accessed April 2006
- Cerquetti, M.C. and Gherardi, M.M. (2000a):** Orally administered attenuated *Salmonella Enteritidis* reduces chicken cecal carriage of virulent *Salmonella* challenge organisms. *Vet. Microbiol.*, 76 (2): 81-92.
- Cerquetti, M.C. and Gherardi M.M. (2000b):** Vaccination of chickens with a temperature sensitive mutant of *Salmonella Enteritidis*. *Vaccine*, 18 (11-12): 1140-1145.
- Chairman, S.H.; Domermath, C.H.; Purchase, H.G. and Williams, J.E. (1975):** Isolation and Identification of Avian Pathogens. Am. Assoc. Avian Pathologist Dept., Vet. Microbiol., Texas. A and M University.
- Charlton, K.G. (2000):** Antibodies to selected diseases agents in translocated wild turkeys in California. *J. Wild Dis.*, 36 (1): 161-164.
- Chiu, L.; Chiu, C.; Horn, Y.; Chiou, C.; Lee1, C.; Yeh, C.; Yu, C.; Wu, C.; Chang, C. and Chu, C. (2010):** Characterization of 13 multi-drug resistant *Salmonella* serovars from different broiler chickens associated with those of human isolates. *BMC Microbiol.*, 10: 86.
- Christensen, H.R.; Frokiaer, H. and Pestka, J.J. (2002):** *Lactobacilli* differentially modulate expression of cytokines and maturation surface markers in murine dendritic cells. *J. Immunol.*, 186: 171-178.
- Clifton-Hadley, F.A.; Breslin, M.; Venables, L.M.; Sprigings, K.A.; Cooles, S.W.; Houghton, S. and Woodward, M.J. (2002):** A laboratory study of an inactivated bivalent iron restricted *Salmonella Enteritidis* and *Typhimurium* dual vaccine against *S. Typhimurium* challenge in chickens. *Vet. Microbiol.*, 89 (2-3): 167-179.
- Coates, M.E. and Fuller, R. (1977):** The genotobiotic animal in the study of gut microbiology. In: **R.T.J.**
- Cogan, T.A. and Humphrey, T.J. (2003):** The rise and fall of *Salmonella Enteritidis* in the UK. *J. Appl. Microbiol.*, 94 (Suppl.): 114S-119S.

- Collard J.M.; Bertrand, S.; Dierick, K.; Godard, C.; Wildemauwe, C.; Vermeersch, K.; Duculot, J.; van Immerseel, F.; Pasmans, F.; Imberechts, H. and Quinet, C. (2008):** Drastic decrease of *Salmonella* Enteritidis isolated in humans in Belgium in 2005, shift in phage types and influence on foodborne outbreaks. Epidemiol. Infect., 136: 771-781
- Collier, L.; Allows, A. and Sussman, M. (1998):** Microbiology and Microbial Infection. Topley's and Wilson's 9th Edition. Arnold volume.
- Commission of the European Communities (1992):** Concerning means for protection against specified zoonotic agents in animals and products of animal origin in order to prevent outbreaks of food borne infections and intoxications. Council Directorate 92/117/EEC.
- Cooper, G.L.; Nicholas, R.A. and Bracewell, C.D. (1990):** Serological and bacteriological investigations of chickens from flocks naturally infected with *Salmonella* Enteritidis. Vet. Rec., 126 (1):20-21.
- Cooper, G.L.; Venables, L.M.; Nicholas, R.A.J.; Cullen, G.A. and Hormaeche, C.E. (1992):** Vaccination of chickens with chicken-derived *Salmonella* Enteritidis phage type 4 aroA live oral *Salmonella* vaccines. Vaccine, 10 (4): 247-54.
- Cooper, G.L.; Venables, L.M.; Nicholas, R.A.J.; Cullen, G.A. and Hormaeche, C.E. (1993):** Further studies of the application of live *Salmonella* Enteritidis aroA vaccines in chickens. Vet Rec., 133 (2): 31-36.
- Cooper, G.L.; Venables, L.M.; Woodward, M.J. and Hormaeche, C.E. (1994):** Vaccination of chickens with strain CVL30, a genetically defined *Salmonella* Enteritidis aroA live oral vaccine candidate. Infect. Immun., 62 (11): 4747-54.
- Cox, N.A.; Bailey, J.S.; Maulding, J.M.; Blankenship, L.C. and Willson, J.L. (1992):** Extent of *Salmonellae* contamination in breeder hatcheries. Poult. Sci., 70 (2): 416-418.
- Cruickshank, R.; Duguid, J.P.; Marion, B.P. and Swan, R.H.A. (1975):** Medical Microbiol., 12th ed. Vol II Churchill Livingstone, Edinburgh London, and New York.
- Davies, R. and Breslin, M. (2003):** Effects of vaccination and other preventive methods for *S. Enteritidis* on commercial laying chicken farms. Vet. Rec., 153 (22): 673-677.

- Davies, R. and Breslin, M. (2004):** Observations on *Salmonella* contamination of eggs from infected commercial laying flocks where vaccination for *S. Enteritidis* had been used. *Avian Pathol.*, 33: 135-146.
- Davison, S.; Benson, C.E.; Henzler, D.J. and Eckroade, R.J. (1999):** Field observations with *S. Enteritidis* bacterins. *Avian Dis.*, 43: 664-669.
- Dekich, M.A. (1998):** Broiler industry strategies for control of respiratory and enteric diseases. *Poult. Sci.*, 77: 1176-1180.
- Desmit, M.; DeGroot, P.A.; Ducatelle, R.; Haesebrauck, F.; Bale, J.; Allen, V. and Hinton, M. (1994):** Determination of a workable cut off value in a LPS based ELISA for detection of antibodies against *S. enteritidis* and *S. typhimurium* in chicken sera and eggs. Workshop on ELISA, Commission of European Communities, Brussels, 141-150.
- Dreeseesen, D.W.; Barnhart, H.M.; Burke, J.L; Chen, T. and Johoson, D.C (1993):** Frequency of *Salmonella Enteritidis* and other *Salmonellae* in the caeca of spent hens at time of slaughter. *Avian Dis.*, 36 (2): 241-250.
- Ebel, E.D.; Manson, J.; Thomas, L.A.; Ferris, K.E.; Bekman, M.G.; Gummins, D.R.; Scroeder-Tucker, L.; Sutherlin, W.D.; Glsshoff, R.L. and Smithhisler, N.M. (1994):** Occurrence of *Salmonella Enteritidis* in un-pasteurization liquid egg in the United States. *Avian Dis.*, 37 (1): 135-172.
- Edel, W.; Mus, A.; Smake, J.; Robuns, K.G.; Vries, T.S.D.E.; Wijnagard, J.C. and van Den (1992):** *Salmonella Enteritidis* surveillance and control among breeder flocks of fowls in the Netherlands in 1992. Fifth report. *Tidsschrift voor Diergeneeskunde*, 118 (20): 665-668.
- EFSA (2007):** Report of the task force on zoonoses data collection on the analysis of the baseline survey on the prevalence of *Salmonella* in broiler flocks of *Gallus gallus*, in the EU, 2005-2006 [1] - Part A: *Salmonella* prevalence estimates, http://www.efsa.europa.eu/EFSA/Report/zoon_report_ej98_finbroilers_en,0.pdf, (10/05/07)
- EFSA (2010):** Analysis of the baseline survey on the prevalence of *Campylobacter* in broiler batches and of *Campylobacter* and *Salmonella* on broiler carcasses in the EU, 2008 - Part A: *Campylobacter* and *Salmonella* prevalence estimates

- ElAmin, A. (2007):** Related topics: Quality & Safety food production. www.foodproductiondaily.com/Quality-Safety/EU-organisations-meet-to-discuss-food-safety.
- Eric Line, J.; Stan Bailey, J.; Cox, A.N.; Stern, J.N. and Thomas Tompkins (1998):** Effect of yeast-supplemented feed on *Salmonella* and campylobacter populations in broilers. *Poult. Sci.*, 77: 405-410.
- Feberwee, A.; de Vries, T.S.; Elbers, A.R. and de Jong, W.A. (2000):** Results of a *S. Enteritidis* vaccination field trial in broiler-breeder flocks in the Netherlands. *Avian Dis.*, 44: 249-255.
- Feberwee, A.; Hartman, E.G.; de Wit, J.J. and de Vries, T.S. (2001b):** The spread of *Salmonella Gallinarum* 9R vaccine strain under field conditions. *Avian Dis.*, 45: 1024-1029.
- Feberwee, A.; de Vries, T.S.; Hartman, E.G.; de Wit, J.J.; Elbers, A.R. and de Jong, W.A. (2001a):** Vaccination against *S. Enteritidis* in Dutch commercial layer flocks with a vaccine based on a live *Salmonella Gallinarum* 9R Strain: Evaluation of efficacy, safety, and performance of serologic *Salmonella* tests. *Avian Dis.*, 45: 83-91.
- Fuller, R. (1989):** Probiotics in man and animals. A review. *J. Bacteriol.*, 66: 365-378.
- Fuller, R. (1997):** The importance of *lactobacilli* in maintaining normal microbial balance in the crop. *Br. Poult. Sci.*, 18: 85-94.
- Fulton, R.M.; Nersessian B.N. and Reed, W.M. (2002):** Prevention of *Salmonella Enteritidis* infection in commercial ducklings by oral chicken egg-derived antibody alone or in combination with probiotics. *Poult. Sci.*, 81: 34-40.
- Gantois, I.; Ducatelle, R.; Timbermont, L.; Boyen, F.; Bohez, L.; Haesebrouck, F.; Pasmans, F. and van Immerseel, F. (2006):** Oral immunisation of laying hens with the live vaccine strains of TAD *Salmonella vac*[®] E and TAD *Salmonella vac*[®] T reduces internal egg contamination with *S. Enteritidis*. *Vaccine*; 24: 6250-6255.
- Gast, R.K. (1997):** Paratyphoid infections. In: B.W. Calnek (ed.). *Diseases of poultry*. 10th ed. USA, pp. 97-121.
- Gast, R.K. and Beard, C.W. (1990):** Production of *S. Enteritidis* contaminated eggs by experimentally infected hens. *Avian Dis.*, 34: 438-446.
- Gast, R.K. and Beard, C.W. (1990):** Serological detection of experimental *Salmonella Enteritidis* infection in laying hens. *Avian Dis.*, 34: 721-

728.

- Gast, R.K. and Beard, C.W. (1992):** Detection and enumeration of *S. Enteritidis* in fresh and stored eggs laid by experimentally infected hens. *J. Food Prot.*, 55: 152-156.
- Gast, R.K.; Stone, H.D. and Holt, P.S. (1993):** Evaluation of the efficacy of oil-emulsion bacterins for reducing fecal shedding of *S. Enteritidis* by laying hens. *Avian Dis.*, 37 (4): 1085-1091.
- Goodridge, C.; Goodridge, L.; Gottfried, D.; Edmonds, P. and Wyvill, J.C. (2003):** A rapid most-probable-number-based enzyme-linked immunosorbent assay for the detection and enumeration of *Salmonella Typhimurium* in poultry wastewater. *J. Food Prot.*, 66 (12):2302-23026.
- Gracia, M.I.; Engberg, R.M.; Espinel, A.E.; Cortes, M. And Baucells, F. (2004):** Bioefficacy of probiotics in broiler diets. *Poult. Sci.*, 83 (suppl.1), 322.
- Guerin, M.T.; Martin, S.W.; Darlington, G.A. and Rajic, A. (2005):** A temporal study of *Salmonella* serovars in animals in Alberta between 1990 and 2001. *Cand. J. Vet. Res.*, 69: 88-99.
- Gurtler, M.; Methner, U.; Kobilke, H. and Fehlhaber, K. (2004):** Effect of orally administered egg yolk antibodies on *Salmonella Enteritidis* contamination of hen's eggs. *Journal of Veterinary Medicine. B, Infectious Diseases ND Veterinary Public Health*, 51: 129-134.
- Ha, S.D.; Ricke, S.C.; Nisbet, D.J.; Corrier, D.E. and DeLoach, J.R. (1994):** Serine utilization as a potential competition mechanism between *Salmonella* and a chicken cecal bacterium. *J. Food Prot.*, 57: 1074-1079.
- Hafez, H.M. and Stadler, A. (1997):** *Salmonella Enteritidis* in turkey poults. *Deutsche Tieraerztliche Wochenschrift*; 104: 118-120.
- Haider, M.G.; Rahman, M.M.; Hossain, M.M.; Rashid, M.; Sufian M.A.; Islam, M.M. and Haque, A.F.M.H. (2007):** Production of formalin killed fowl typhoid vaccine using local isolates of *Salmonella Gallinarum* in Bangladesh. *Bangladesh J. Vet. Med.*, 5 (1 & 2): 33-38.

- Hanan, M.I. (2005):** Studies on some *Salmonella* serovars with a special reference to their susceptibility to newly introduced antibiotics. Thesis (Ph.D.), Microbiology, Fac. Vet. Med., Cairo Univ.
- Hassan, J.D.; Barrow, P.A.; Mockett, A.P.A. and McLeod, S. (1990):** Antibody response to experimental *Salmonella Typhimurium* infection in chickens measured by ELISA. Vet. Rec., 126: 512-522.
- Hassan, J.O. and Curtiss, I.R. (1997):** Efficacy of a live avirulent *S. Typhimurium* vaccine in preventing colonization and invasion of laying hens by *S. Typhimurium* and *S. Enteritidis*. Avian Dis., 41: 783-791.
- Hassan, J.O.; Barrow, P.A.; Mockett, A.P.A. and McLeod, S. (1990):** Antibody response to experimental *Salmonella typhimurium* infection in chickens measured by ELISA. Vet. Rec., 126: 519-522.
- Hazem, M.I.P. (2010):** Laboratory diagnosis of salmonellosis in poultry by newly prepared *Salmonella* antigens, Thesis (M.V.Sc.), Microbiology, Fac. Vet. Med., Cairo Univ.
- Helmick, C.G.; Griffin, P.M.; Addiss, D.G.; Tauxe, R.V. and Juranek, D.D. (1994):** Infectious diarrheas. pp. 85–123 in Digestive Diseases in the United States: Epidemiology and Impact. J. E. Everhart, ed. Diane Publ. Co., Washington, DC.
- Herikstad, H.; Motarjemi, Y. and Tauxe, R.V. (2002):** *Salmonella* surveillance: A global survey of public health serotyping. Epidemiol. Infect., 219: 1-8.
- Higgins, J.P.; Higgins, S.E.; Guenther, K.L.; Huff, W.E.; Donoghue, A.M.; Donoghue, D.J. and Hargis, B.M. (2005):** Use of a specific bacteriophage treatment to reduce *Salmonella* in poultry products. Poult. Sci., 84: 1141- 1145.
- Higgins, J.P.; Higgins, S.E.; Salvador, V.; Wolfenden, A.D.; Tellez, G. and Hargis, B.M. (2007a):** Temporal effects of lactic acid bacteria probiotic culture on *Salmonella* in neonatal broilers. Poult. Sci., 86: 1662-1666.
- Higgins, S.E.; Erf, G.F.; Higgins, J.P.; Henderson, S.N.; Wolfenden, A.D.; Gaona-Ramirez, G. and Hargis, B.M. (2007b):** Effect of probiotic treatment in broiler chicks on intestinal macrophage numbers and phagocytosis of *Salmonella Enteritidis* by abdominal exudate cells. Poult. Sci., 86 (11): 2315-21.

- Higgins, S.E.; Higgins, J.P.; Wolfenden, A.D.; Henderson, S.N.; Torres-Rodriguez, A.; Tellez, G. and Hargis, B. (2008):** Evaluation of a *Lactobacillus*-based probiotic culture for the reduction of *Salmonella* Enteritidis in neonatal broiler chicks. *Poult. Sci.*, 87: 27-31.
- Hofer, E.; Silra-Filho, S.J.; Maura, E. and Reis, F. (1998):** *Salmonella* serovars isolated from feedstuff and poultry feeds in Brazil. *Pesquisa Vet. Brasil.*, 18 (1): 21-27
- Hofer, E.; Silva F.; Sebastiao, J.D. and Eliane, M.F. (1998).** *Salmonella* serovars isolated from feedstuff and poultry feeds in Brazil. *Pesquisa Veterinaria Brasileira.*, 18 (1): 21-27.
- Hong, Y.; Berrang, M.E.; Liu, T.; Hofacre, C.L.; Sanchez, S.; Wang, L. and Maurer, J.J. (2003):** Rapid detection of *Campylobacter coli*, *C. jejuni*, and *Salmonella enterica* on Poultry carcasses by using PCR enzyme linked immunosorbent assay. *Appl. Environ. Microbiol.*, 69 (6): 3492-3499.
- Hoop, R.K. (1997):** The Swiss control programme for *Salmonella* Enteritidis in laying hens. *Rev. Sci. Tech. Int. Epiz.*, 16: 885-890.
- Hoop, R.K. and Keller, B. (1991):** Pathological, bacteriological and serological findings in laying hens from small flocks infected with *Salmonella* Enteritidis phage type 4. *Schweizer Archiv fur Tierheilkunde*, 133 (2): 83-88.
- Hoszowski, A. and Wasyl, D. (2005):** Występowanie antybiotyk-ooporność pałeczek *Salmonella* Polsce. *Med. Wet.*, 61: 660-663.
- Huang, H.; Garcia, M.M.; Brooks, B.W. and Nielson, K. (1999);** Evaluation of culture environment procedures for use with *Salmonella* detection immunoassay. *Int. Food Microbiol.*, 51(2-3): 85-94.
- Hui, A.K. and Das, R. (2001):** Studies isolation, serotyping and antibiotic sensitivity of *Salmonellae* isolated from ducks. *Ind. V. J.*, 78 (11): 1058-1059.
- Ibrahim, H.S. (1992):** The use of ELISA test for detection of *Salmonella* in poultry feed. *Cairo Univ. (Egypt). Faculty of veterinary Medicine.*
- Impey, C.S. and Mead, G.C. (1989):** Fate of *Salmonellae* in the alimentary tract of chicks pre-treated with a mature caecal microflora to increase colonization resistance. *J. Appl. Bacteriol.*, 66: 469-475.

- Inoue, A.Y.; Berchieri, J.A.; Bernardino, A.; Paiva, J.B. and Sterzo, E.V. (2008):** Passive immunity of progeny from broiler breeders vaccinated with oil-emulsion bacterin against *Salmonella Enteritidis*. Avian Dis., 52: 567-57.
- Islam, M.M.; Haider, M.G.; Chowdhury, E.H.; Kamruzzaman, M. and Hossain, M.M. (2006):** Seroprevalence and pathological study of *Salmonella* infections in Layer chickens and isolation and identification of causal agents. Bangl. J. Vet. Med., 4 (2): 79-85.
- Jarquin R.; Hanning, I.; Soohyun, A. and Steven, R.C. (2009):** Development of rapid detection and genetic characterization of *Salmonella* in poultry breeder feeds. Sensors, 9 (7): 5308-5323.
- Jarquin, R.L.; Nava, G.M.; Wolfenden, A.D.; Donoghue, A.M.; Hanning, I.; Higgins, S.E. and Hargis, B.M. (2007):** The evaluation of organic acids and probiotic cultures to reduce *Salmonella Enteritidis* horizontal transmission and crop infection in broiler chickens. Int. J. Poult. Sci., 6: 182-186.
- Jin, L.Z.; Ho Y.W.; Abdullah, N.; Ali, M.A. and Jalaludin, S. (1998):** Note: lack of influence of adherent *Lactobacillus* isolates on the attachment of *Escherichia coli* to the intestinal epithelial cells of chicken *in vitro*. J. Appl. Microbiol., 84: 1171-1174.
- Johansson , T.M.; Schildt, R.; Ali-Yrkko, S.; Siitonen, A. and Maijala, R.L. (1996):** The first *S. Enteritidis* phage type 1 infection of a commercial layer flock in Finland. Acta Vet. Scand., 37(4): 471-9.
- Jouy, E.; Proux, K.; Humbert, F.; Rose, V.; Lalande, F.; Houdayer, C.; Picault, J.P. and Salvat, G. (2005):** Evaluation of a French ELISA for the detection of *Salmonella Enteritidis* and *Salmonella Typhimurium* in flocks of laying and breeding hens. Prev. Vet. Med., 71 (1-2): 91-103.
- Kabir, S.M.L.; Rahman, M.M.; Rahman, M.B. and Ahmed, S.U. (2004):** The dynamics of probiotics on growth performance and immune response in broilers. Int. J. Poult. Sci., 3: 361-365.
- Kalavathy, R.; Abdullah, N.; Jalaludin, S. And Ho, Y.W. (2003):** Effects of *lactobacillus* cultures on growth performance, abdominal fat deposition, serum lipids and weight of organs of broiler chickens. Br Poult. Sci., 44: 139-144.

- Khan, M.I.; Fadl, A.A. and Venkitanarayanan, K.S. (2003):** Reducing colonization of *S. Enteritidis* in chickens by targeting outer membrane proteins. *J. Appl. Microbiol.*, 95: 142-145.
- Kim, C.J.; Nagraja, K.V. and Pomeroy, B.S. (1991):** Enzyme linked immunosorbant assay for detection of *S. Enteritidis* infection in chickens. *Am. J. Res.*, 52 (7): 1069-74.
- Kimura, A.C.; Reddy, V.; Marcus, R.; Cieslak, P.R.; Mohle-Boetani, J.C.; Kassenborg, H.D.; Segler, S.D.; Hardnett, F.P.; Barrett, T. and Swerdlow, D.L. (2004):** Chicken consumption is a newly identified risk factor for sporadic *Salmonella enterica* serotype *Enteritidis* infections in the United States: A case control study in Food Net sites. *Clin. Infect. Dis.*, 38: S244-S252.
- Koenen, M.E.; Karmer, J.; van der Hulst, R.; Heres, L.; Jeurissen, S.H. and Boersma, W.J. (2004):** Immunomodulation by probiotic *lactobacilli* in layer and meat type chickens. *Br. Poult. Sci.*, 45: 355-366.
- Krieg, N.R. and Holt, J.G. (1984):** *Salmonella*. In: *Bergey's Manual of Systematic Bacteriology* (1), pp. 427-458.
- Kumar, S.; Balakrishna, K. and Batra, H.V. (2008):** Enrichment-ELISA for detection of *Salmonella Typhi* From Food and Water Samples. *Biomed. Environ. Sci.*, 21: 137-143.
- Lee, S.; Lillehoj, H.S.; Dalloul, R.A.; Park, D.W.; Hong, Y.H. and Lin, J.J. (2007):** Influence of *Pediococcus*-based probiotic on coccidiosis in broiler chickens. *Poult. Sci.*, 86: 63-66.
- Lillehoj, E.P.; Yun, C.H. and Lillehoj, H.S. (2000):** Vaccines against the avian enteropathogens *Eimeria*, *Cryptosporidium* and *Salmonella*. *Anim. Hlth. Res. Rev.*, 1 (1): 47-65.
- Lister, S.A. (1988):** *Salmonella Enteritidis* infection in broilers and broiler breeders. *Vet. Rec.*, 123: 350.
- Liu, W.; Yang, Y.; Chung, N. and Kwang, J. (2001):** Induction of humoral immune response and protective immunity in chickens against *S. Enteritidis* after a single dose of killed bacterium-loaded microspheres. *Avian Dis.*, 45: 797-806.
- Luciana, C.; Elisabetta, D.; Giulia, V.; Dario, D. and Giuseppe, P. (2004):** Comparison of PCR, electrochemical enzyme-linked immunosorbent assays (ELISA), and the standard culture method for detecting *Salmonella* in meat products. *Appl. Environ. Microbiol.*, 1393-1395.

- Madian, K. and Wafaa, A.A. (2006):** Study on the effect of prebiotic, synbiotic and probiotic, as alternatives to antibiotic growth promoter on the performance, intestinal colonization, humoral immune response and clinical serum chemistry of the broiler chickens. 3rd Int. Conf. Vet. Res. Div., NRC., Giza, Cairo, Egypt., Dec., 5-6, pp. 145-172.
- Marin, C. and Lainez, M. (2009):** *Salmonella* detection in feces during broiler rearing and after live transport to the slaughterhouse. Poultry Sci., 88: 1999-2005.
- Mastumoto, A.; Miyama, M. and Murakami, S. (2001):** Comparison of *Salmonella* isolation rates indifferent types of egg layer hen houses in chiba, Japan. Avian Dis., 45 (1): 195-200.
- Mayrhofer, S.; Paulsen, P.; Smulders, F.J.M. and Hilbert, F. (2003):** Antimicrobial resistance profile of five major food-borne pathogens isolated from beef, pork and poultry. Int. J. Food Microbiol., 97 (1): 23-29.
- Mead, G.C. (2000):** Prospects for competitive exclusion treatment to control *Salmonella* and other food borne pathogens in poultry. Vet. J., 159: 111-123.
- Mead, P.S.L.; Slutsker, V.; Dietz, L.F. Bresee, J.S.; Shapiro, C.; Griffin, P.M. and Tauxe, R.V. (1999):** Food-related illness and death in the United States. Emerg. Infect. Dis., 5: 607-625.
- Methner, U., Steinbach, G. (1997):** Efficacy of maternal *Salmonella* antibodies against oral infection of chicks with *Salmonella* Enteritidis. Berl. Münch. Tierärztl. Wschr., 110: 373-377.
- Methner, U., Steinbach, G., Meyer, H. (1994):** Investigations on the efficacy of *Salmonella* immunization of broiler breeder birds to *Salmonella* colonization of these birds and their progeny following experimental oral infection. Berl. Münch. Tierärztl. Wschr., 107: 192-198.
- Meyer, H.; Koch, H.; Methner, U. and Steinbach, G. (1993):** Vaccines in salmonellosis control in animals. Zbl. Bakt., 278: 407-415.
- Michael, G.B.; Cardoso, M. and Schwarz, S. (2006):** Molecular analysis of *Salmonella enterica* subsp. *enterica* serovar *Agona* isolated from slaughter pigs. Vet. Microbiol., 112 (1): 43-52.
- Midilli, M.M.; Kocabagh, N.; Muglah, O.H.; Turan, N.; Ylmaz, B. and Çakır, S. (2009):** Effects of dietary probiotic and prebiotic supplementation on growth performance and serum IgG concentration of broilers. South African J. Anim. Sci., 38 (1): 54-59.
- Minga, U.M. and Wray, C. (1992):** A disc ELISA for the detection of

- Salmonella* group D antibodies in poultry. Vet. Magazin. Jord. Vet. Ass., 8: 68-71.
- Miyamoto, T.; Kitaoka, D.; Withanage, G.; Fukata, T.; Sasai, K. and Baba, E. (1999):** Evaluation of the efficacy of *S. Enteritidis* oil-emulsion bacterin in an intravaginal challenge model in hens. Avian Dis., 43: 497-505.
- Mohan, B.; Kadirvel, R.; Natarajan, A. and Bhaskaran, M. (1996):** Effect of probiotic supplementation on growth, nitrogen utilization and serum cholesterol in broilers. Br. Poult. Sci., 37: 395-401.
- Mohrah, I.M. and Zaki, M.M. (1995):** Trials to prepare potent vaccine against *Salmonella Gallinarum-Pullorum* infection. Vet. Med. J., 43: 97-102.
- Mølbak, K. and Neimann, J. (2002):** Risk factors for sporadic infection with *Salmonella Enteritidis*, Denmark, 1997–1999. Am. J. Epidemiol., 156 (7): 654-661.
- Moore, R.W.; Byrd, J.A.; Knape, K.D.; Anderson, R.C.; Callaway, T.R.; Edrington, T.; Kubena, L.F. and Nisbet, D.J. (2006):** The effect of an experimental chlorate product on *Salmonella* recovery of turkeys when administered prior to feed and water withdrawal. Poult. Sci., 85: 2101-2105.
- Murugkar, H.V.; Rahman, H. and Dutta, P.K. (2005):** Distribution of virulence genes in *Salmonella* serovars isolated from man and animals. Indian. Med. Res., 177: 66-70.
- Nahashon, S.N.; Nakaue, H.S. and Mirosh, L.W. (1992):** Effect of direct-fed microbials on nutrient retention and production parameters of laying pullets. Poult. Sci., 71 (Suppl.1): 111.
- Nakamura, M.; Nagamine, N.; Takahashi, T.; Suzuki, S. and Sato, S. (1994):** Evaluation of the efficacy of a bacterin against *S. Enteritidis* infection and the effect of stress after vaccination, Avian Dis., 38: 717-24.
- Nassar, T. J.; al-Nakhli, H.M. and al-Ogaily, Z.H. (1994):** Use of live and inactivated *S. Enteritidis* phage type 4 vaccines to immunise laying hens against experimental infection. Rev. Sci. Technol. Epiz., 13 (3): 855-67.
- National Research Council (1984):** Nutrient requirement of poultry. 8th Rev. Ed. National Academy Press, Washington DC.
- Nicholas, R.A.J. (1992):** Serological response of chickens naturally infected

- with *Salmonella Typhimurium* detected by ELISA. Brit. Vet. J., 148 (3): 241-248.
- Nurmi, E. and Rantala, M. (1973):** New aspects of *Salmonella* infection in broiler production. Nature, 241: 210-211.
- O'Brien, J.D.P. (1988):** *Salmonella Enteritidis* infection in broiler chickens. Vet. Rec., 214-218.
- Ocan, V.S.; de Ruiz Holgado, A.A. and Nader-Macias, M.E. (1999):** Characterization of a bacteriocin-like substance produced by a vaginal *Lactobacillus salivarius* strain. Appl. Environ. Microbiol., 65: 5631-5635.
- Oh, G.H. and Choi, W.P. (1996):** Studies on *Salmonella* isolated from chicks. Vet. Bull., 66 (3): 186-188.
- OIE (2004):** Salmonellosis in Manual of Diagnostic Tests and Vaccines for Terrestrial Animals. 5th Ed. (Chapter 3).
- Okamoto, A.S.; Andreatti Filho, R.L.; Lima, E.T.; Pereira, R.E.P.; Menconi, A.; Rocha, T.S. and Marietto-Gonçalves, G.A. (2007):** Immunological evaluation of the intestinal mucosa of broiler chicks treated with *lactobacillus* spp. and challenged with *Salmonella Enteritidis*. Brazil. J. Poult. Sci., 9 (4): 259-262.
- Okamura, H.; Lillehoj, S.; Raybourne, R.B.; Babu, U. and Heckert, R. (2003):** Antigen-specific lymphocyte proliferation and interleukin production in chickens immunized with killed *S. Enteritidis* vaccine experimental subunit vaccines. Avian Dis., 47 (4): 1331-1338.
- Olabisi, O.I. and Peter, S. (2008):** *Salmonella Enteritidis* experimental infection in chickens: Effects of challenge dose on serum immunoglobulin G antibody response. African J. Biotechnol., 7 (20): 3783-3787.
- Opalinski, M.; Maiorka, A.; Dahlke, F.; Cunha, F.; Vargas, F.S.C. and Cardozo, E. (2007):** On the use of a probiotic (*Bacillus subtilis* - strain DSM 17299) as growth promoter in broiler diets. Brazil. J. Poult. Sci., 9 (2): 99-103.
- Paiva, J.B.; Penha, F.; Amguello, Y.M.S.; Siva, M.D.; Gardin, Y.; Resende, F.; Berchieri, A. and Sestsi, L. (2009):** Efficacy of several *Salmonella* vaccination programme against experimental challenge with *Salmonella Gallinarum* in commercial brown breeder hens. Brazil. J. Poult. Sci., 11 (1): 65-72.

- Pakpinyo, S.; Yong, M. And Lertruangpunyawuti, V. (2008):** Efficacy of *Salmonella* Typhimurium (ST) live vaccine and *S. Enteritidis* inactivated vaccine against *S. Enteritidis* in layer chickens. Proceed.15th Cong. FAVA 27-30 October FAVA-OIE Joint Symp. Emerg. Dis., Bangkok, Thailand. p 153.
- Patterson, J. and Burkholder, K. (2003):** Application of prebiotics and probiotics in poultry production. Poult. Sci., 82: 627-631.
- Pedersen, K.; Hasen, H.C.; Jorgensen, J.C. and Borck, B. (2002):** Serovars of *Salmonella* isolated from Danish turkeys between 1995 and 2000 and their antimicrobial resistance. Vet. Rec., 150 (15): 471-474.
- Pieskus, J.; Franciosini, M.P.; Proietti, P.C.; Reich, F.; Kazeniauskas, E.; Ambrozeviciene, C.B.; Mauricas, M. and Bolder, N. (2008):** Preliminary investigations on *Salmonella* spp. incidence in meat chicken farms in Italy, Germany, Lithuania and the Netherlands. Int. J. Poult. Sci., 7 (8): 813-817.
- Popoff, M.Y. (2001):** Antigenic formulas of the *Salmonella* serovars. World Health Organization Collaborating Centre for Reference and Research on *Salmonella*. Pasteur Institute, Paris, France.
- Popoff, M.Y.; Bockemuhl, J. and McWhorter-Murlin A. (1994):** Supplement 1993 (No. 37) to the Kauffmann-White scheme. World Health Organization Collaborating Centre for Reference and Research on *Salmonella*, Unite des Enterobacteries, U389 INSERM, Institute Pasteur, Paris. Res. Microbiol., 145: 711-716.
- Poppe, C.; Irwin, R.J.; Forsberg, C.M.; Clarke, R.C. and Oggel, J. (1991):** The prevalence of *S. Enteritidis* and other *Salmonella* spp. among Canadian registered commercial layer flocks. Epidemiol. Infect., 106: 259-270.
- Potkonjak, D.; Velhner, M.; Orlic, D.; Kapetanov, M.; Baloš, M.Z. and Stojanovic, D. (2007):** Serological control on *Salmonella* in some poultry flocks in Vojvodina region. Lucrări Stiinifice Medicină Veterinară,p. 740-744.
- Priyantha, M.A.R. (2009):** An overview: vaccination to control fowl typhoid in commercial layers. W. J. An. Sci., 52: 53-56.
- Quinn, P.J.; Carter, M.E.; Markey, B.K. and Carter, G.R. (1994):** Clinical Veterinary Microbiology. Mosby -YearBook Europe Limited.

- Quinn, P.J.; Markey, B.K.; Carter, M.E.; Donnelly, W.J. and Leonard, F.C. (2002): *Veterinary Microbiology and Microbial Diseases*. Blackwell Science.
- Radwan, H.M. (2007): Studies on *Salmonella* infection in chicken flocks. M.V.Sc. Thesis, Fac. Vet. Med., Dept. of Avian and Aquatic Animal Med. Alexandria. Univ.
- Rahimi, S.; Moghadam Shiraz, Z.; Zahraei Salehi, T.; Karimi Torshizi, M.A. and Grimes, J.L. (2007): Prevention of *Salmonella* infection in poultry by specific egg-derived antibody. Int. J. Poult. Sci., 6 (4): 230-235.
- Rajashekara, G.; Munir, S.; Lamichhane, C.M.; Back, A.; Kapur. V.; Halvorson, D.A. and Nagaraja, K.V. (1998): Application of recombinant fimbrial protein for the specific detection of *Salmonella* Enteritidis infection in poultry. Diagn. Microbiol. Infect. Dis., 32 (3): 147-157.
- Revolledo, L.; Ferreira, C.S.A. and Ferreira, A.J.P. (2009): Prevention of *Salmonella* Typhimurium colonization and organ invasion by combination treatment in broiler chicks. Poult. Sci., 88: 734-743.
- Riemann, H.; Himathongkham, S.; Willoughby, D.; Tarbell, R. and Breitmeyer, R. (1998): A survey for *Salmonella* by drug swabbing manure piles in California egg ranches. Avian Dis., 42(1): 67-71.
- Rolfe, R.D. (2000): The role of probiotic cultures in the control of gastrointestinal health. J. Nutr., 130: 396S-402S.
- Rowghani, E.; Arab, M. and Akbarian, A. (2007): Effects of a probiotic and other feed additives on performance and immune response of broiler chicks. Int. J. Poult. Sci., 6: 261-265.
- Saarela, M.; Mogensen, G.; Fondens, R.; Matto, J. and Mattila-Sandholm, T. (2000): Probiotic bacteria: safety, functional and technological properties. J. Biotechnol., 84: 197-215.
- Sadek, M.A. (2005): Serological studies on the different antigens of avian *Salmonella*. Ph.D. Thesis (Bacteriology, Immunology and Mycology), Fac. Vet. Med., Moshtohor, Zagazig Univ. (Benha Branch).
- Sainsbury, D. (1984): Systems of management. Ch.9 P.102. In Poultry Health and Management. 2nd Ed. By Sainsbury. Granada Publishing LTD. 8 Grafton Street, London W1X3 LA.
- Samanta, M. and Biswas, P. (1995): Effect of feeding probiotic and lactic acid on the performance of broiler. Indian J. Poult. Sci., 30: 145-147.

- Schaar, U.; Kaleta, E. and Baumbach, B. (1997):** Prevalence of *S. Enteritidis* and *S. Typhimurium* in laying hen flocks battery and on floor housing. Comparative studies using bacteriological and serological demonstration methods. Tierarztl. Prax. Ausg. G. Grosstiere. Nutztiere; 25 (5): 451-459.
- Schaller, G. (1996):** Decision criteria for vaccination against *Salmonella* in Poultry. Acta Vet. Scand. Suppl., 90: 69-71.
- Schneitz, C. and Mead, G. (2000):** Competitive exclusion. In: Wray, C., Wray, A. (Eds.), *Salmonella* in Domestic Animals. Common Wealth Agricultural Bureau Internal (CABI) Publishing, Wallingford, Oxon, UK.
- Schneitz, C.; Nuotio, L.; Mead, G. and Nurmi, E. (1992):** Competitive exclusion in the young bird: challenge models, administration and reciprocal protection. Int. J. Food Microbiol., 15: 241-244.
- Seo, K.H.; Holt, P.S.; Brackett, R.E.; Gast, R.K. and Stone, H.D. (2002):** Mucosal humoral immunity to experimental *Salmonella* Enteritidis infection in the chicken crop. Avian Dis., 46 (4): 1015-1020.
- Seo, K.H.; Holt, P.S.; Gast, R.K. and Hofacre, C.L. (2000):** Elimination of early *S. Enteritidis* infection after treatment with competitive-exclusion culture and enrofloxacin in experimentally infected chicks. Poult. Sci., 79: 1408-1413.
- Shahada, F.; Chuma, T.; Okamoto, K. and Sueyoshi, M. (2008):** Temporal distribution and genetic fingerprinting of *Salmonella* in broiler flocks from Southern Japan. Poult. Sci., 87: 968-972.
- Shoeib, H.K.; Sayed, A.N.; Sotohy, S.A. and Abdel Ghaffar, S.K. (1997):** Response of broiler chicks to probiotic (pronifer) supplementation. Assiut Vet. Med. J., 36: 103-116.
- Sleim, M. M. A. (2003):** Epidemiological studies on *Salmonella* in poultry. Ph. D. Thesis (Microbiology), Fac. Vet. Med., Alexandria Univ.
- Smith, D.L.; Harris, A.D.; Johnson, J.A.; Silberged, E.K. and Morris, J.G. (2002):** Animal antibiotic used has an early but important impact on the emergence of antibiotic resistance in human commensal bacteria. Proceed. National Acad. Sci. United States of America. 99: 6434-6439.

- Snow, L.C.; Davies, R.H.; Carrique-Mas, J.J.; Cook, A. J.C.; Teale, C.J. and Evans, S.J. (2008):** Survey of the prevalence of *Salmonella* on commercial broiler farms in the United Kingdom, 2005/06. *Vet. Rec.*, 163: 649-654.
- Snoeyenbos, G.H. (1991):** Pullorum disease. In: *Diseases of poultry*, 9th eds., (B.W. Calnek, H. J. Barnes, C. W. Beard, W. M. Reid, and H. W. Yoder Jr., eds.), Iowa State University Press, Ames, IA. pp. 87-99.
- Soerjadi, A.S.; Stehman, S.M.; Snoeyenbos, G.H.; Weinack, O.M. and Smyser, C.F. (1981):** The influence of *lactobacilli* on the competitive exclusion of paratyphoid *Salmonellae* in chickens. *Avian Dis.*, 25: 1027-1033.
- Solano, C.; Galindo, J.; Sesma, B.; Alvarez, M.; Solsona, M.J. and Gamazo, C. (2000):** Enzyme-linked immunosorbent assay with a *Salmonella* Enteritidis antigen for differentiating infected from vaccinated poultry. *Vet. Res.*, 3 (5): 491-497.
- Soomro, A.H.; Masud, T. and Rathore, H.A. (2002):** Application of probiotic culture. *J. Am. Vet. Adv.*, 1: 40- 42.
- Soumet, C.; Blivet, D.; Ermel, G.; Colin, P. and Salvat, G. (1999):** An immunoconcentration-PCR assay to detect *Salmonella* in the environment of poultry houses. *Int. J. Food Microbiol.*, 48 (3): 221-224.
- Springer, P.C.; Wenk, K.A.; Dawson, A. and Newman, K.E. (2000):** The effects of dietary mannanoligosaccharides on cecal parameters and the concentration of enteric bacteria in the ceca of *Salmonella* challenged broiler chicks. *Poult. Sci.*, 205-211.
- Statistical analysis system (1987):** User's Guide. Statistics Statistical analysis system Institute. Cary North Carolina.
- Statutory Instruments (1989):** The poultry breeding flocks and breeding (registration and testing) order no. 1963 Her Majesty's Stationary Office, London.
- Strzałkowski, L.; Kopczeński, A.; Przeworski, W. and Wailer, P. (2000):** Evaluation of *Salmonella* rod incidence in poultry. *Bull. Vet. Inst. Pulawy*, (44): 21-23.
- Tan, S.; Gyles, C.L. and Wilkie, B.N. (1997):** Comparison of an LPS-specific competitive ELISA with a motility enrichment culture method (MSRV) for detection of *S. Typhimurium* and *S. Enteritidis* in chickens. *Vet. Microbiol.*, 56 (1-2): 79-86.

- Tellez, G.; Petrone, V.M.; Escorcía, M.; Morishita, T.Y.; Cobb, C.W. and Villasenor, L. (2001):** Evaluation of avian-specific probiotic and *Salmonella* Enteritidis, *Salmonella* Typhimurium, and *Salmonella* Heidelberg-specific antibodies on cecal colonization and organ invasion of *Salmonella* Enteritidis in broilers. J. Food Prot., 64: 287-291.
- Thorns, C.J.; Bell, M.M.; Sojka, M.G. and Nicholas, R.A. (1996):** Development and application of enzyme-linked immunosorbent assay for specific detection of *Salmonella* Enteritidis infections in chickens based on antibodies to SEF14 fimbrial antigen. J. Clin. Microbiol., 34 (4): 792-797.
- Thorns, C.J.; McLaren, I.M. and Sojka, M.G. (1994):** The use of latex particle agglutination to specifically detect *Salmonella* Enteritidis. Int. J. Food Microbiol., 21 (1-2): 47-53
- Timms, L.M.; Marshall, R.N. and Breslin, M.F. (1990):** Laboratory assessment of protection given by an experimental *S. Enteritidis* PT4 inactivated adjuvant vaccine. Vet. Rec., 127 (25-26): 611-614.
- Timms, L.M.; Marshall, R.N. and Breslin, M.F. (1994):** Laboratory and field trial assessment of protection given by a *S. Enteritidis* PT4 inactivated adjuvant vaccine. Br. Vet. J., 150 (1): 93-102.
- Toms, C. and Powrie, F. (2001):** Control of intestinal inflammation by regulatory T cells. Microbes Infect., 3: 929-935.
- Trawińska, B.; Saba, L.; Wdowiak, L.; Ondrašovičová, O. and Nowakowicz-Dębek, B. (2008):** Evaluation of *salmonella* rod incidence in poultry in the lublin province over the years 2001–2005. Ann. Agric Environ., 15: 131-134.
- Tsai, H.J. and Hsiang, P.H. (2005):** The prevalence and antimicrobial susceptibilities of *Salmonella* and Campylobacter in ducks in Taiwan. J. Vet. Med. Sci., 67 (1): 7-12.
- USDA (1999):** Subject: *Salmonella* prevalence in poultry. <http://www.usda.gov/nass/pubs/agstats.htm> Accessed January 2006.
- van Immerseel, F.; De Buck, J.; De Smet, I.; Mast, J.; Haesebrouck, F. and Ducatelle, R. (2002):** The Effect of vaccination with *S. Enteritidis* aroA mutant on early cellular responses in caecal lamina propria of newly-hatched chickens. Vaccine, 20 (23- 24): 3034-3041.
- van Overbeke, I.; Duchateau L.; De Zutter, , L.; Albers, G. and Ducatelle, R. (2006):** A comparison survey of organic and

- conventional broiler chickens for *Salmonella* contamination for infectious agents affecting health and food safety. Avian Dis., 50: 196-200.
- van Zijderveld, F.G.; van Bommel, A.M.; Brouwers, R.A.; de Vries, T.S.; Landman, W.J. and de Jong, W.A. (1993):** Serological detection of chicken flocks naturally infected with *S. Enteritidis*, using an enzyme-linked immunosorbent assay based on monoclonal antibodies against the flagellar antigen. Vet. Q., 15 (4): 135-137.
- Verma, J.C. and Gupta, B.R. (1995):** Occurrence of *Salmonella* serotypes in animals in India. Indian J. Comp. Microbiol. Immunol. Infect. Dis., 16: 3-4.
- Vicente, J.L.; Higgins, S.; Bielke, L.; Tellez, G.; Donoghue, D.; Donoghue, A. and Hargis, B.M. (2007):** Effect of probiotic culture candidates on *Salmonella* prevalence in commercial turkey houses. J. Appl. Poult. Res., 16: 471-476.
- Vicente, J.L.; Aviña, L.; Torres-Rodriguez, A.; Hargis, B. and Tellez, G. (2007a):** Effect of a *Lactobacillus spp.* based probiotic culture product on broiler chicks performance under commercial conditions. Int. J. Poult. Sci., 6: 154-156.
- Vicente, J.L.; Wolfenden, A.; Torres-Rodriguez, A.; Higgins, S.; Tellez, G. and Hargis, B.M. (2007b):** Effect of probiotic culture candidates on *Salmonella* prevalence in commercial turkey houses. J. Appl. Poult. Res., 16: 55-58.
- Vugia, D.J.; Mishu, B.; Smith, M.; Travris, D.R.; Hickman Brenner, F.W. and Taux, R.V. (1993):** *Salmonella Enteritidis* outbreak in a restaurant chain: The continuing challenge of prevention. Epidemiol. Infect., 110: 49-61.
- Wafaa, A.A.; Madian, K.; Ebtahal, A. and Gehan, M.K. (2006):** The effect of combined competitive exclusion culture with mannan-oligosaccharides and ciprofloxacin on *Salmonella Enteritidis* colonization in broiler chickens. 12th Sci. Cong. Fac. Vet. Med., Assiut Univ., Egypt.
- Waltman, W.D.; Horne, A.M.; Pirkle, C. and Johnson, D.C. (1992):** Prevalence of *S. Enteritidis* in spent hens. Avian Dis., 36 (2): 2515.
- Wilkie, D.C. (2006):** Non-antibiotic approaches to control pathogens in the gastrointestinal tract of the broiler chicken. Ph.D. Thesis, College of Graduate Studies and Research in Partial Fulfilment of the

Requirements.

- Williams, E. and Whittemore, A.D. (1971):** Serological diagnosis of pullorum disease with the micro-agglutination system. *Appl. Microbiol.*, 21 (3): 394-399.
- Wolfenden, A.D.; Vicente, J.L.; Higgins, J.P.; Andreatti, R.; Higgins, S.E.; Hargis, B.M. and Tellez, G. (2007):** Effect of organic acids and probiotics on *Salmonella Enteritidis* infection in broiler chickens. *Int. J. Poult. Sci.*, 6: 403-405.
- Woodward, M.J.; Gettinby, G.G.; Breslin, M.F.; Corkish, J.D. and Houghton, S. (2002):** The Efficacy of a Salenvac, *S. Enteritidis* iron restricted bacterin vaccine, in laying chickens. *Avian Pathol.*, 31: 383-392.
- Wray, C.; Davies, R.H. and Corkish, J.D. (1996):** Enterobacteriaceae. In *Poultry Diseases*, 4th ed.; Jordan, T. W.; Pattison, M., Eds.; W. B. Saunders: Philadelphia, PA, USA, pp. 9-43.
- Yamane, Y.; Awamura, N.; Fujii, H.; Ohta, H.; Toyota, Y.; Otsuki, K. and Inoue, T. (2000):** Establishment of an enzyme-linked immunosorbent assay with a coated deflagellated *Salmonella Enteritidis* antigen for detection of a specific chicken antibody. *Avian Dis.*, 44 (2): 291-296.
- Yokoyama, H. (1998):** Prevention of fatal salmonellosis in neonatal calves, using orally administered chicken egg yolk *Salmonella*-specific antibodies. *Am. J. Vet. Res.*, 59: 416-420.
- Young, J.L. and Kang, M.S. (2005):** Safety and efficacy of *Salmonella Gallinarum* 9R vaccine in young laying chickens. *Avian Pathol.*, 34 (4): 362-366.
- Young, S.D.; Olusanya, O.; Jones, K.H.; Liu, T.; Liljebjelke, K.A. and Hofacre, C.L. (2007):** *Salmonella* incidence in broilers from breeders vaccinated with live and killed *Salmonella*. *J. Appl. Poult. Res.*, 16: 521-528.
- Zhang-Barber, L.; Turner, A.K. and Barrow, P.A. (1999):** Vaccination for control of *Salmonella* in poultry. *Vaccine*, 17: 2538-2545.
- Zulkifli, I.; Abdullah, N.; Azirin, N. and Mchal, H.T.W. (2000):** Growth performance and immune response of two commercial broiler strains fed diets containing *Lactobacillus* cultures and oxytetracycline under heat stress conditions. *Br. Poult. Sci.*, 41: 593-597.