

ABSTRACT

BACTERIAL INFECTIONS IN JAMAICA POULTRY INDUSTRY

FOCUS ON THE EPIDEMIOLOGY OF *SALMONELLA*.

SUZETTE EMELLIA CURTELLO

Globally, *Salmonella* infection, food poisoning and *Salmonella* related deaths, constitute major public health problems. Consumption of poultry products infected with *Salmonella* is an important route of *Salmonella* infection. The prevalence of *Salmonella* in the Jamaican poultry industry was determined using established microbiological methods to isolate *Salmonella* and an Enzyme linked immunosorbent assay to detect immunoglobulin (Ig)Y antibody to *Salmonella* in egg yolk.

A total 8074 clinical and environmental specimens, from 7501 birds and 573 environmental sites, collected from poultry farms and marketing outlets in 6 parishes were studied. In poultry for consumption *Salmonella* was isolated from 1% (9/1200) of specimens from large abattoirs, 5% (6/120) of specimens from small which followed standard rearing practices. A higher prevalence of *Salmonella* infection was observed in specimens from small farms specializing in "organic" poultry products. The only environmental specimens from which *Salmonella* was isolated were rat faeces (7/86, 8%) and muscoid flies (4/27, 15%). *Salmonella* was also isolated from faecal specimens of pigs (5/79, 6%) in the same vicinity of the poultry farms. In specimens from poultry houses

Salmonella was isolated from 3% (2/68) of sick birds, 1% (3/435) of broken eggs and 2% (2/98) of wet litter specimens. *Salmonella* was also detected in exotic birds and free-flying migratory birds 3% (5/158) and 2% (3/153), respectively. The seroprevalence of *S. Typhimurium* antibodies was high ranging between 30%-100% in all species of birds tested.

In the drug evaluation experiments *Salmonella* was isolated from 47% (14/60) of untreated controls compared to 2% (6/180) one-day old chickens which received medication. The 3 medications tested Trisulvitrin, Menorox and Neochlore did not differ significantly in efficacy in protection against *Salmonella* infection. The identification of 4 *Salmonella* serovars Yeerongpilly, Augustenborg, Montiviedo and Kentucky not previously reported in Jamaica is another important finding of this study.

In conclusion the prevalence and distribution of *Salmonella* in Jamaica poultry industry is low. It is recommended that the practices which maintain low prevalences of *Salmonella* in the poultry industry in Jamaica be encouraged. Exotic birds, domestic animals and sylvatic animals should be monitored as potential sources of *Salmonella* infection in Poultry. Continued vigilance and firm adherence to biosecurity measures is tantamount to a safe and economically viable industry.

Key words: *Salmonella*; poultry; Yeerongpilly