ABSTRACT

BACTERIAL INFECTIONS IN JAMAICA POULTRY INDUSTRY
FOCUS ON THE EPIDEMIOLOGY OF SALMONELLA.
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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 muscid 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, Montivideo 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