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Isolation of *Salmonella* from Frozen Chicken Carcasses Produced by Commercial Companies in Khartoum State, Sudan

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Abstract

Twenty seven broiler chicken carcasses were purchased from different retail outlets in Khartoum State; Sudan they were produced by six large scale (produced more than ten thousand tons of broiler chicken carcasses) (LS) and three small scale (produced more than ten thousand tons of broiler chicken carcasses) (SS) companies. Three whole chickens' carcasses that collected randomly from each company (transported to laboratory in sterile bags), were used to isolate and compare the prevalence and the count of *Salmonella*. Results showed that the mean values of *Salmonella* count in skin samples (crop skin and under wing) of carcasses from large scale and SS were 2.143 and 2.056 log₁₀ cfu/g and 1.927 and 1.837 log₁₀ cfu/g, respectively. The mean values of total *salmonella* isolated from breast meat (shallow and deep sampling) of carcasses from large scale companies were significantly higher than those from small scale (1.931 and 1.731 log₁₀ cfu/g vs. 1.169 and 0.0 log₁₀ cfu/g). Four serovars of *salmonella* were isolated with *Salmonella* tyhimurium as the most prevalent (34.37%) followed by *Salmonella* typhi (28.125%) and *Salmonella* enteritidis (21.875%) compared to *Salmonella* paratyhi (15.625%). Unexpectedly, the hygienic quality of frozen chicken meat produced by Small Scale companies was significantly higher than that produced by Large Scale companies, whereas the highest *Salmonella* count in both (large scale and small scale) was found in the skin. These results demonstrated the importance of good hygienic practices and risk analysis both at the farm level and broiler processing plants and health certificate for person who handle the chicken should be ensured.

Keywords: Carcasses, salmonella