

Food safety risk posed to consumers of table eggs from layer farms in Gauteng Province, South Africa: Prevalence of *Salmonella* spp., *Escherichia coli*, antimicrobial residues and antimicrobial resistant bacteria

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Occurrence of risk factors for contamination of table eggs by bacterial pathogens

Type of farm	No. of farms	Size	Housing		Pests		
		Median (range) total No. of: hens in-lay	Battery cage	Free range	No. (%) of farms with infestation by:		
					Rodents	Feral birds	Insects
Large	34	49,524 (1,050-538,656)	28 (82.4)	4 (11.8)	18 (52.9)	18 (52.9)	9 (26.5)
Small	5	1,500 (964-15,800)	5 (100.0)	0 (0.0)	3 (60.0)	2 (40.0)	1 (20.0)
Total	39	47,149 (964-538,656)	33 (84.6)	4 (10.3)	21 (53.8)	20 (51.3)	10 (25.6)

Prevalence of enteropathogens and antimicrobial residues in table eggs

Type of farms	No. of farms	No. (%) of samples positive for:		
		<i>Salmonella</i>	<i>E. coli</i>	Antimicrobial residue
Large	34	3 (8.8)	19 (55.9)	1 (2.9)
Small	5	0 (0.0)	0 (0.0)	0 (0.0)
Total	39	3 (7.7)	19 (48.7)	1 (2.6)

Key findings

The study conducted on 39-layer farms in Gauteng Province, South Africa determined the prevalence and resistance of enteropathogens, and antimicrobial residues in table eggs collected from the farms.

The egg prevalence for *Salmonella* spp. and *Escherichia coli* was 2.0% and 48.7% respectively; 71.4% of *E. coli* isolates were resistant to antimicrobial agents; the egg prevalence for antimicrobial residues.

Eggs contaminated by resistant *E. coli* and *Salmonella* spp. and antimicrobial residues may pose food safety and therapeutic threats to consumers.