ABSTRACT

Disinfectants are regularly used for cleansing poultry slaughterhouses to control microorganisms. However, the microorganisms such as bacteria are developing resistance to disinfectant(s) and complicate control of bacterial infections. The aim of this study was, therefore, to determine disinfectant susceptibility/resistance patterns to commonly used disinfectants which were manifested by bacteria isolated from intestines of slaughtered indigenous chickens in Nairobi, Kenya. The method used was agar well diffusion, and the six disinfectants (their active ingredients are in brackets) tested were as follows: Kupacide® (glutaraldehyde; benzalkonium chloride); TH4+® (didecyl dimethyl ammonium HCl; dioctyl dimethyl ammonium HCl; octyl decyldimethyl ammonium HCl; alkyl dimethyl ammonium HCl; and glutaraldehyde); Noro cleanse® (glutaraldehyde; coco-benzyl-dimethyl-ammonium chloride); Dettol® (chloroxylenol); Savlon® (chlorhexidine gluconate; cetrimide; and N-propylalcohol); and Jik® (sodium hypochlorite). At the manufacturer's recommended user concentration, isolates showed various resistance to the respective disinfectants. *E. coli* isolates were resistant to five of the tested disinfectants (Jik®, TH4+®, Noro cleanse®, Dettol®, and Kupacide®); however, they were susceptible to Savlon®; *Staphylococcus* isolates were resistant to disinfectants to Jik® and TH4+® and susceptible to the rest disinfectants; *Streptococcus* isolates were only resistant to Jik® and susceptible to the remaining disinfectants. Some *E. coli* and *Staphylococcus* isolates showed resistance to more than one disinfectant. This study has demonstrated resistance of the bacterial isolates to various disinfectants at recommended user concentrations, although some of them were susceptible at higher concentration(s) and lower concentrations. The bacterial disinfectant resistance will interfere with cleansing of respective premises, resulting in contaminated products, which may end-up causing disease in the humans consuming them. Hence, it is recommended that one ascertains the efficacy of respective disinfectant by carrying out disinfectant susceptibility testing to know the effective ones and the appropriate concentration to use.