

Diversities, Antibigram and Antibiotic Resistance Genes in Staphylococcus Species in Raw Meat from a Research Farm

Authors : Anthony Ayodeji Adegoke, Olayinka Ayobami Aiyegoro, Thor Axel Stenstrom

Abstract : A study to investigate the species diversities, antibiogram and antibiotic resistance genes in Staphylococcus species from raw meat and dairy products collected from an abattoir and a farm shop of a research institute in Irene, South Africa over a six-month period was conducted. Polymerase Chain Reaction was used to speciate the bacteria and to detect the presence and otherwise of resistance genes. Antibiotic susceptibility testing was performed by disk diffusion method on Mueller-Hinton agar according to the Clinical Laboratory Standards Institute standards. A total of twenty-six (26) antibiotics were used to determine the antibiotic susceptibility. *S. xylosus* was the predominant isolate with 30% total occurrence, followed by *S. epidermis*, *S. aureus*, *S. saprophyticus* and *S. haemolyticus* with 25%, 15%, 15%, and 10% abundance respectively. The isolates were resistant to ceftazidime, gentamycin, nalidixic acid, nortrafuration, ampicillin, penicillin, oxytetracycline, tetracycline, doxycycline, clindamycin and lincomycin. *mecA* genes was detected among the methicillin resistant Staphylococcus species (MRSS) but no vancomycin resistance genes (van A and van B) were detected in these isolates. The presence of MRSS and multidrug resistant Staphylococcus species in meat affirms the need to avoid consumption of partially cooked meat currently rampant in South Africa, to avoid the spread of difficult to control pathogens in epidemiological proportion.

Keywords : Staphylococcus species, antibiotics, antibiotic resistance genes, food products, methicillin resistance, *mecA* gene

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