World Academy of Science, Engineering and Technology
International Journal of Animal and Veterinary Sciences
Vol:13, No:08, 2019

Identification and Antibiotic Susceptibility of Bacteria Isolated from the Intestines of Slaughtered Goat and Cattle

Authors : Latifat Afolake Ogunfolabo, Hakeem Babafemi Ogunfolabo

Abstract : The gastrointestinal tract is densely populated with micro-organism which closely and intensively interacts with the host and ingested feed. Food borne infections are some of the major international challenges that lead to high mortality and also, antimicrobial resistance, which has been classified as a serious threat by World Health Organization. Samples of slaughtered cattle and goats intestines were collected and standard culture methods were used for bacteria isolation and identification. Minimum inhibitory concentration of commonly used antibiotic using modification of the disk diffusion method was carried out on isolates. The samples cultured were all positive to Pseudomonas aeruginosa (95% and 90%), Escherichia coli (85%), Salmonella typhi (70% and 60%), Staphylococcus aureus (75%and 100%), Micrococcus luteus (55% and35%), Bacillus macerans (60% and 5%), Bacillus cereus (25% and 20%), Clostridium perfringens (20% and 5%), Micrococcus varians (20% and 5%), Bacillus subtilis (25% and 5%), Streptococcus faecalis (40% and 25%) and Streptococcus faecium (15% and 10%) in goat and cattle respectively. Also, Proteus mirabilis (40%), Micrococcus luteus (35%), Proteus vulgaris (30%), Klebsiella aerogenes(15%) were isolated from cattle. The total coliform (13.55 x10^5cfu/gm ± 1.77) and (20.30 x10^5cfu/gm ± 1.27) counts were significantly higher than the total bacteria count (8.3 x10^5cfu/gm ± 1.41) and (16.60 x10^5cfu/gm ±0.49) for goat and cattle respectively. Selected Bacteria count of isolates showed that Staphylococcus aureus had the highest significant value (6.9 x10^5cfu/gm ± 0.57) and (16.80 x10^5cfu/gm ± 0.57) Escherichia coli (4.60 x10^5cfu/gm ± 0.42) and (7.05 x10^5cfu/gm ± 0.64) while the lowest significant value was obtained in Salmonella/Shigella (1.7 x10^5cfu/gm ± 0.00) and (1.5 x10^5cfu/gm ± 0.00) for goat and cattle respectively. Susceptibility of bacteria isolated from slaughtered goat and cattle intestine to commonly used antibiotics showed that the highest statistical significant value for zone of inhibition for goat was obtained for Ciprofloxacin (30.00 ± 2.25, 23.75 ± 2.49, 17.17 ± 1.40) followed by Augmentin (28.33 ± 1.22, 21. 83 ± 2.44, 16.67 ± 1.49), Erythromycin (27.75 ±1.48, 20.25 ± 1.29, 16.67 ± 1.26) while the lowest values were obtained for Ofloxacin (27.17 ± 1.89, 21.42 ± 2.19, 16.83 ± 1.26) respectively and values obtained for cattle are Ciprofloxacin (30.64 ± 1.6, 25.79 ± 1.76, 8.07 ± 11.49) followed by Augmentin (28.29 ± 1.33, 22.64 ± 1.82, 17.43 ± 1.55) Ofloxacin (26.57 ± 2.02, 20.79 ± 2.75, 16.21 ± 1.19) while the lowest values were obtained for Erythromycin (26.64 ± 1.49, 20.29 ± 1.49, 16.29 ± 1.33) at different dilution factor (10^{-1}, 10^{-2}, 10^{-3}) respectively. The isolates from goat and cattle were all susceptible to Augmentin at the three different dilution factors. Some goat isolates are intermediate to Ciprofloxacin and Erythromycin at 10^{-2} and 10^{-3}, while resistance to Ciprofloxacin at 10^{-3} dilution factor. Ciprofloxacin and Ofloxacin at the dilution factors of 10^{-3} and 10^{-1} for some cattle isolate and resistance were observed for Ofloxacin and Erythromycin at dilution of 10^{-3}. These results indicate the susceptibilities and the antimicrobial resistance to commonly used antibiotic.

Keywords : antibiotic susceptibility, bacteria, cattle, goat, identification
Conference Title : ICASVM 2019 : International Conference on Animal Science and Veterinary Medicine
Conference Location : London, United Kingdom
Conference Dates : August 20-21, 2019