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MOLECULAR CHARACTERIZATION AND ANTIBIOGRAM STUDY OF BACTERIA ISOLATED FROM DIARRHOEIC CALVES

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A B S T R A C T
This study was conducted to investigate the causative agents of bacterial infections in diarrhoeic calves and to assess their antibiotic susceptibility patterns in Dinajpur Sadar, Bangladesh. A total of forty-five (45) fecal samples were collected and examined using conventional microbiological methods, including bacterial culture, biochemical tests, and antibiotic sensitivity assays. Molecular characterization of *Escherichia coli* and *Salmonella* spp. was performed using PCR with universal primers targeting the 16S rRNA and invA gene respectively. The bacterial isolates identified from the diarrhoeic samples were *E. coli* (53.33%), *Shigella* spp. (15.5%), *Salmonella* spp. (20%), *Enterobacter* spp. (8.88%), and *Bacillus* spp. (2.22%). The bacterial isolates showed resistance to amoxicillin, ampicillin, erythromycin, and cephalexin. *E. coli* exhibited sensitivity to azithromycin, cotrimoxazole, doxycycline, and levofloxacin. *Shigella* spp. was sensitive to cefixime, tetracycline, and gentamycin. *Enterobacter* spp. showed sensitivity to azithromycin and cefixime. *Salmonella* spp. was sensitive to tetracycline and streptomycin. *Bacillus* spp. exhibited susceptibility to streptomycin and bacitracin. Continued monitoring of antimicrobial resistance in livestock is essential to guide rational antibiotic use and protect public health in Bangladesh.