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Screening of *Lactobacilli* and *Bifidobacteria* from Bangladeshi indigenous poultry for their potential use as probiotics

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Despite the existence of scavenging native poultry that are apparently more resistant to GIT infection and other diseases as potential source, no probiotic has been developed yet in Bangladesh. Therefore, the study was undertaken to isolate, identify and characterize potential probiotic bacteria from Bangladeshi indigenous poultry and to evaluate their suitability to use in local poultry industry. A total 300 isolates belonging to the genera *Lactobacillus* and *Bifidobacteria* were identified following physical, biochemical and molecular methods from the crop and cecal samples of 61 healthy indigenous birds. Based on the auto-aggregation test, 12 *Lactobacilli* and 7 *Bifidobacteria* isolates were selected for antibacterial activity, resistance to low pH, resistance to bile extract, ability to produce H₂O₂, cell surface hydrophobicity and adhesion activities on crop epithelial cells to evaluate their probiotic potentials. Under the in vitro conditions and with respects to the probiotic traits, *Lactobacillus salivarius*, *L. crispatus*, *L. johnsonii*, *Bifidobacterium thermophilum* and *B. bifidum* were found to be potential probiotic strains. The study findings seem to be highly motivating since they unveil the potentials of Bangladeshi isolates as probiotics. If the proposed strains could be used as probiotics in poultry, it is expected that the local probiotics would be more beneficial and would save the huge foreign currency that Bangladesh spends every year for the importation of such materials from abroad.

Biography

K B M Saiful Islam has completed his PhD and MS in Applied Bioscience (Microbiology) from Hokkaido University, Japan, Diploma in Avian Medicine from KVL, Denmark, MS (Medicine) and DVM from Bangladesh. He has around 10 years of research and teaching experience, and published 10 research papers and 15 proceedings papers in different peer reviewed journals of which last two received impact factors 12.89 and 7.0, respectively. In 2011, he received the prestigious 'Asian Young LAB Scientist Award'. He is the Chairman and Assistant Professor of Department of Medicine and Public Health, Faculty of Animal Science and Veterinary Medicine, Sher-e-Bangla Agricultural University, Bangladesh.

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