

Detection of Lactic Acid Bacteria (LAB) from local breed chicken gut as probiotic agent in livestock

ABSTRACT

Background and Objective: Farmers are still improving growth and feed efficiency using feed-additive antibiotics in livestock although it has been banned due to food safety. The urgent need to search for probiotics as a beneficial microbial feed supplement to replace antibiotics is therefore crucial. This study was conducted to identify and characterize the potential probiotic features of lactic acid bacteria(LAB) from the gut of local breed chickens. **Materials and Methods:** Twenty-five samples were collected from the crop, gizzard, small intestine, large intestine, caecum of the chickens from different regions of Borneo, Malaysia. The bacteria were identified phenotypically (Gram staining, biochemical tests) and genotypically by (GTG)5 PCR fingerprinting. The probiotic characteristics of LAB were studied using fermentation (1% glucose) and bile tolerance (0.2, 1.0, 2.0 and 3.0%). **Results:** About one hundred presumptive LAB with Gram-positive, catalase-negative, non-motile properties were obtained from 25 samples. Genotypic (GTG)5 fingerprinting indicated three main clusters as shown in the dendrogram. However, only 7 isolates showed high survival rate and able to ferment glucose under gut condition, indicating their potential as probiotics agents in poultry husbandry with no adverse health consequences. **Conclusion:** Our study proposed the use of these LAB isolates from the gut of local chicken breed as potential probiotics agents to enhance the immunity and growth in the chicken.

Keyword: Chicken gut; Potential probiotics; Lactic acid bacteria; Bacterial isolates; Poultry husbandry