Characterisations of probiotic Lactobacillus strains by amplified ribosomal dna restriction analysis (ARDRA)

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Abstract:
Twelve probiotic Lactobacillus strains for poultry were characterised by amplified ribosomal DNA restriction analysis (ARDRA) using Sau3AI, TaqI, HaeIII and AluI restriction endonucleases. Species-specific and strain-specific restriction patterns were observed from the bacterial strains. Numerical analysis of composite analysis of ARDRA exhibited D value of 0.8456. Whereas, the caculated D values of ARDRA patterns generated by Sau3AI, TaqI, HaeIII and AluI were 0.8309, 0.8382, 0.8088 and 0.8088, repectively. Composite analysis of ARDRA was the most discriminative method when compared to the individual analysis. ARDRA could distinguished L. reuteri C 10 and L. panis C 17 into single strains. The 16S rRNA gene restriction patterns were also able to group L. gallinarum I 16 and I 26 into single strains. Lactobacillus brevis I 12, I 23, I 25, I 211 and I 218 seem to be multiple clones of the same bacterial strain as are L. reuteri C 1 and C 16. ARDRA is a valuable fingerprinting method to discriminate probiotic Lactobacillus strains.

Keywords: 16S rRNA Gene; ARDRA; Lactobacillus; Probiotic; Restriction Patterns

Acknowledgement