The prevalence of foodborne pathogenic bacteria on cutting boards and their ecological correlation with background biota

ABSTRACT

This study implemented the pyrosequencing technique and real-time quantitative PCR to determine the prevalence of foodborne pathogenic bacteria (FPB) and as well as the ecological correlations of background biota and FPB present on restaurant cutting boards (CBs) collected in Seri Kembangan, Malaysia. The prevalence of FPB in high background biota (HBB) was lower (0.24%) compared to that of low background biota (LBB) (0.54%). In addition, a multiple linear regression analysis indicated that only HBB had a significant ecological correlation with FPB. Furthermore, statistical analysis revealed that the combinations of Clostridiales, Flavobacteriales, and Lactobacillales orders in HBB had significant negative associations with FPB, suggesting that these bacteria may interact to ensure survivability and impair the growth of pathogenic bacteria.