

Antibacterial and antioxidative activities of the various solvent extracts of banana (*Musa paradisiaca* cv. Mysore) inflorescences

Abstract

The inflorescence of Mysore banana (*Musa paradisiaca* cv. Mysore) was investigated for its antibacterial and antioxidant activities using various solvent extractions. Buds and bracts of the inflorescence showed a wide spectrum of inhibition against foodborne pathogenic bacteria such as *Staphylococcus aureus* (SA), *Bacillus cereus* (BC), *Listeria monocytogenes* (LM) and *Vibrio parahaemolyticus* (VP). The antioxidant activity was found higher in extracts with higher polarity. Methanolic extract of buds proves to have the strongest antibacterial and antioxidant activities. The 1 mg mL⁻¹ of the methanolic buds extracts were able to scavenge 1,1-diphenyl-2-picryl-hydrazyl (DPPH) radical up to 77.8% and inhibit the Lipid Peroxidation (LPO) at 67.2%. Meanwhile, the TEAC, FRAP and TPC values of the bud extracts were 137.71 μmol g⁻¹ extract Trolox equivalent, 2114.70 μmol g⁻¹ extract Fe²⁺ equivalent, 122.03 GAE mg g⁻¹ extract, respectively. Pearson's correlation indicated significant positive correlation ($r > 0.9$, $p < 0.01$) between antibacterial activity, antioxidant values and TPC. The Minimum Inhibitory Concentration (MIC) values of the buds methanolic extracts were determined at 16.5 and 31.0 mg mL⁻¹ against SA and LM. It is concluded that banana inflorescence extracts could be potentially be exploited as a source of natural antibacterial and antioxidants.