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## Anti-microbial and anti-oxidant activity of impregnated pectin based packaging material

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The main aim of this research work is to prepare and characterize pectin based bio degradable, protective, proactive, active packaging blend films of low methoxy pectin and sodium alginate (75-25% w/w). Different blend films were prepared (75:25 P+SA, 100 P, 100 SA, 100+0.2% P+C, 75:25/0.7% P+SA+C in this ratio. The antimicrobial activity of different blends tested against food borne pathogen *E. coli* O157:H7 (MTCC 90), *Salmonella typhi* (MTCC 733) significance effect was showed for zone of inhibition. The free radical scavenging activity of 10% bio-composite incorporated cinnamaldehyde 0.30% blends based on linear correlation analysis ( $R_2$ ) which is 0.9235 for DPPH scavengers and citric acid was used as positive control. Statistically significance  $p < 0.001$  correlations were found between cinnamaldehyde significantly modified polymer tensile properties. The films were characterized by TGA, DSC, ATR-FTIR, XRD analysis results showed  $p < 0.05$  significant effect on thermal behavior of polymeric structures.

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