

Antioxidant pectin/pullulan edible coating incorporated with *Vitis vinifera* grape seed extract for extending the shelf life of peanuts

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Abstract

Bioactive pectin/pullulan (PEC/PUL) binary blend film combined with *Vitis vinifera* grape seed extract (GSE) was fabricated. GSE was compatible with PEC/PUL polymer matrix to form a dense film structure with increased mechanical strength. The GSE-containing film offered some antimicrobial activity against *E. coli* and *L. monocytogenes* by delaying bacterial growth. Also, the GSE-added film exhibited antioxidant potential because of the free radical scavenging ability of polyphenolic compounds in the extract. The PEC/PUL/GSE films had significant UV blocking properties imparted by pectin and GSE along with the high gas barrier provided by pullulan. Raw and roasted peanuts (*Arachis hypogaea*) coated with PEC/PUL/GSE film had a 75 % reduction in the peroxide values than uncoated peanuts after 30 days under ambient conditions. The edible coating of PEC/PUL/GSE film had an excellent ability to prolong the shelf life of stored peanuts by delaying rancidity.