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Characterization and antibacterial properties of nanosilver-applied polyethylene and polypropylene composite films for food packaging applications

Yumi Jo^a, Coralia V. Garcia^a, Seonghyuk Ko^b, Wooseok Lee^b, Gye Hwa Shin^c, Jae Chun Choi^d,

Se-Jong Park^d, Jun Tae Kim^{a,*}

^aDepartment of Food Science and Technology, Keimyung University, Daegu 42601, Korea

^bDepartment of Packaging, Yonsei University, Wonju 26493, Korea

^cDepartment of Food and Nutrition, Kunsan National University, Gunsan 54150, Korea

^dFood Additives and Packaging Division, National Institute of Food & Drug Safety Evaluation, Ministry of Food and Drug Safety, Osong, Chungcheongbuk-do 28159, Korea

*Corresponding author: Dr. Jun Tae Kim; Department of Food Science and Technology, Keimyung University, Daegu 42601, Korea, Tel.: +82 53 580 5171; fax: +82 53 580 5372. jtkim92@kmu.ac.kr

ABSTRACT

Nanocomposite films were developed using master batches of two polymers, namely low-density polyethylene (LDPE) and polypropylene (PP) containing silver (Ag) nanoparticles, by melt compounding and melt extruding. The films became increasingly yellow as the Ag content increased. Morphological evaluation showed the effective incorporation of Ag in the polymers. The Ag/LDPE nanocomposite film showed a comparable strength to that of commercial LDPE, although stiffness increased at high Ag (240 mg/kg) concentration. The Ag/PP nanocomposite

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