

Extension of fresh Asian noodles at ambient shelf-life using high barrier multi-layered, nanocomposite-fortified retortable trays

Abstract

The Invention involves packing fresh Asian noodles in multi-layered, nanocomposite-fortified retortable trays that have high oxygen and moisture barrier properties, so as to extend the ambient shelf life of fresh Asian noodles. The fresh Asian noodles can be broadly divided into 2 categories: wheat-based (yellow) noodles and rice-based (white) noodles.

The multi-layered nanocomposite-fortified retortable trays are developed from multi-layers comprising both nanocomposites and various types of polymers. The nanocomposite layer is based on homogeneously dispersed nanomaterials including nanoclay and silicon dioxide into a polymer using an extrusion process. The presence of nanocomposites is expected to improve barrier, mechanical, and thermal properties of the retortable trays. A variety of polymer layers, comprising polypropylene (PP), nylon 6 (Ny), polyethylene terephthate (PET), and ethylene vinyl alcohol (EVOH) are also used. The polymer and nanocomposite multi-layers are then form into trays via a thermoforming process. The trays are sealed with an oxygen and moisture impermeable film.

The invention revolutionizes the packaging of fresh Asian noodles in a way that extend its ambient shelf life significantly.

No figures