TECHNOLOGY SUMMARY

SmartPack – Antimicrobial Packaging Materials

VALUE PROPOSITION

PVC and LDPE Films with incorporated metal antimicrobial nanoparticles increase the shelf life of muscle foods compared to control films by retarding the microbiological growth of spoilage bacteria. During storage, the lipid oxidation values measured as TBARS values are also significantly lower than in control samples.

THE TECHNOLOGY

Novel antimicrobial food packaging has the potential to offset food spoilage which could facilitate the extension of export boundaries allowing access to new markets. Delaying food spoilage also benefits consumers in reducing food waste.

By employing a UCC-patented deposition process, nanopatterned surfaces of antimicrobial silver and copper can be incorporated into packaging materials such as PVC and LDPE.

Studies show that this modified packaging can significantly extend the shelf-life of muscle foods such as chicken breasts and beef steaks.

Research is on-going to incorporate nanopatterned surfaces of non-metal and food grade antimicrobials into packaging materials.

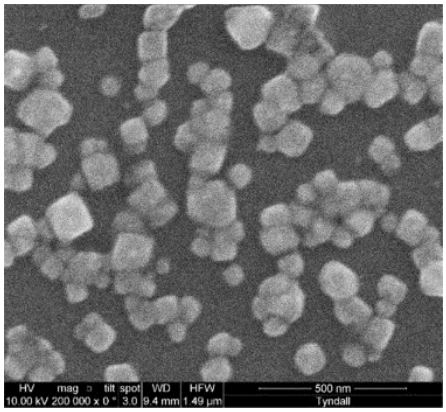

Fig 1. SEM image of Antimicrobial Silver nanoparticles incorporated in LDPE film.

STATUS/ DEVELOPMENT OBJECTIVES

The technology is being developed into a roll-to-roll process for industrial application.

Seeking licensees/commercialisation partners.

FIELDS OF APPLICATION

- Food processing
- Food distribution
- Food retail

FUNDING

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