

Two worlds take hands to find sunburn solution for South African pomegranates.

The University of Lincoln (UoL), the University of Johannesburg (UJ), and their industry partner Sonlia Fruit packhouse joined forces to try and find a solution for this problem, costing the South African pomegranate industry a dear amount every season!

The two-year project is part of the prestigious African Agriculture Knowledge Transfer Partnership (AAKTP), which aims to drive agri-food innovation by connecting a UK academic institution, an African industry partner, and an African university or knowledge base. Through this initiative, the consortium seeks to apply scientific research to solve real-world agricultural problems while building sustainable industry-academic linkages.

The research activities are performed by Dr Tatenda Kawhena (UJ), the appointed AAKTP Research Associate. Dr Kawhena's work is jointly supervised by Prof. Oluwafemi Adebo (UJ) and Dr. Samson Oyeyinka (UoL), with strategic oversight provided by the principal investigators, Prof. Olaniyi Fawole, DSI-NRF SARCHI Chair in Sustainable Preservation and Agroprocessing Research at UJ, and Dr. Olubukola Onarinde (UoL). The research will be done in the Wellington area, and the evaluations will be performed at Sonlia packhouse.



From left to right: Prof. Oluwafemi Adebo (UJ), Dr Tatenda Kawhena (UJ), Mr JC Müller (Sonlia), Dr Samson Oyeyinka (UoL).

The objective of this study is to evaluate the protective and quality improvement properties of preharvest application of nanocomposites on South African grown pomegranate fruit cultivars. In addition, the study will establish application regimes and protocols for the industry.

Although nanotechnology is trending, its application in agriculture is very limited. This study will focus on the development and application of nanocomposite edible coatings for preharvest and postharvest fruit preservation, and it is tagged “nano-horticulture”. The study will make use of bioactive nanoparticles, for example, zinc oxide nanoparticle, which is regarded as safe, and has attracted extensive attention ascribing to its excellent mechanical properties, barrier capabilities, biocompatibility and broad-spectrum antimicrobial performances.

This innovative approach is also multidisciplinary, combining knowledge in nanotechnology, food science and horticultural science to address the global issue of food waste.