

Wireless Monitoring of Perishable Goods for Prediction of Produce Characteristics



Motivation

- Maintaining perishable produce such as fruit, vegetables, and cut flowers, at the correct temperature and humidity while in transit and storage is an essential requirement to ensure the quality of the produce when it appears on supermarket shelves.
- It is also a fundamental requirement for compliance with food safety regulations.
- Should variations in storage conditions occur, this can have a significant affect on the shelf-life of the produce, even leading to disposal of sub-optimal produce well before the estimated sell-by date.
- This is both costly and wasteful and leads to waste disposal, often in landfill sites.
- The project aims to provide importers, wholesalers, shippers, and retailers with a system that will help to provide answers to important questions relating to shelf life.



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Challenges

- Determining the data (e.g. temperature and humidity) that needs to be collected based on considerations of the scientific knowledge of the factors affecting the ageing of different types of perishables.
- Identifying and assessing knowledge discovery techniques appropriate to the data.
- Verifying the accuracy of the predicted shelf life.

The Proposed Solution

Will utilise:

- Measurements of produce conditions within the supply chain, using the latest generation of (active) Radio Frequency Identification (RFID) tags.
- Wireless transmission of data to readers.
- Sophisticated algorithms and data processing.

To enable:

- Prediction of shelf-life and sell-by dates based on actual conditions experienced in the supply chain.
- A reduction in wasted produce.
- Early detection of produce deterioration, allowing for remedial actions.
- Elimination of the shipping of un-saleable produce.
- Better compliance with food safety regulations.



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