

Development of Active Intelligent Packaging System with Antimicrobial Agents for Fruits and Vegetables

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Project Objectives

- To study the physiological characteristics of selected commodity and barrier properties of suitable packaging materials
- Optimize the suitable scavengers or emitters for active packaging of Tomato, Onion and Potato
- Development of Time Temperature Indicator or gas indicator for intelligent packaging system
- Evaluate the shelf life of fruits and vegetables packed in antimicrobial intelligent packaging
- To evaluate the active intelligent packaging methods in commercial level and economic potential of concept

Description

The demand for high quality fruits and vegetable is increasing owing to their numerous health benefits. However, the quality is a key concern for the consumers; packaging is one of the viable options to extend the shelf life of fresh fruits and vegetables. Several factors like temperature, oxygen, cultivar, handling, ethylene and respiration rate influence the shelf life of fresh commodity. A proper packaging and its gas exchange design extends the shelf life to a considerable amount of time. Innovate packaging techniques like modified active packaging, active and intelligent packaging, use of antimicrobial extends the shelf life of fruits and vegetables to a significant amount to time. Intelligent packaging also called as smart packaging is the packaging which exists as a monitoring system to monitor quality of the food it encloses which is able to inform the manufacturer, retailer and consumer of the state of these condition during transport and storage. Hence this project is aimed to suggest a suitable active intelligent packaging solution for the common fresh commodity such as Tomato, Onion and Potato to avoid post-harvest losses in the supply chain market with the expected outcome of development of indicators for intelligent packaging and suggest the suitable packaging system to support farmers, entrepreneurs and process industries to maintain the quality of products during the supply chain management.