WIRELESS TECHNOLOGY FOR INFORMATION COMMUNICATION IN LOGISTICS & TRANSPORTATION SYSTEMS FOCUSING ON THAI FRESH PRODUCE EXPORTED TO CHINA

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ABSTRACT

Thailand is one of the well-known fruit producers in the world. Also, the export value of fresh produce is one of the main factors that drive the national economy. This study focuses on the implication of wireless technology enabling the information communication regarding the temperature monitoring from exporter within logistics and transportation system of fresh produce shipment from Thailand to China. The current issue of transporting fresh produce is to ensure the quality of the products. In order to maintain good quality produce with the optimum temperature controlled during the shipping process, Temperature Tracking System Through Wireless Technology (TRAC) is a proposed model of this investigative research. With the TRAC, the integration of the temperature sensor and wireless technology can enhance the information communication through the wireless network.

INTRODUCTION

Thailand is one of the well-known fruit producers in the world. Due to the climate and geographical characteristics of Thailand, the unique taste of Thai fruits has set it apart from many competitors. Each year, the export value of fresh produce is one of the main factors that drives the national economy (Chomchalow et al., 2008).

According to the Department of Export Promotion of Thailand (DEP), the agricultural commodities export in 2008 was 625.76 millions US dollars (USD), and in 2009 the expected export value was between 644.53-657.04 million USD (DEP, 2009).

This study is focusing on the implication of wireless technology enabling the information communication within logistics and transportation system of fresh produce shipment from Thailand to China.

Since fresh fruit is a sensitive product, any factors such as moisture, temperature, harvesting and packaging can lead to a decline in quality. By integrating logistics and transportations with various wireless technologies, these factors can be controlled.

For this reason, product information from the source to the point of consumption will be transmitted to ensure the quality and freshness of Thai produces from Thailand. Furthermore, customer satisfaction can be guaranteed as a result of accurate transmission to all parties.

The Temperature Tracking System Through Wireless Technology (TRAC) will apply the Radio Frequency Identification Technology (RFID) tags, temperature sensors, Global Positioning System (GPS), and other technical advantages, including the temperature monitoring system and information flow procedure, etc. The system can semi real-time location and monitor the location and the temperature of fresh produce, to achieve quality.

LITERATURE REVIEW

While Thailand is recognized as one of the world fruits producers of unique and great-tasting fruits, it has not been very successful in penetrating China. Due to the quality issue, many orders for Thai fruits have been canceled, especially Logan and Durian (DEP, 2009). This suggests that it is essential for increasing the value of the country’s fruit exports.

According to the Department of Agriculture Extension, the damage from exporting fresh agricultural products from Thailand is approximately 25%. Because