RFID Helps Keep Avocados Fresh

Chilean avocado producer Rio Blanco is using RFID temperature sensors to ensure the fruit is kept at the proper temperature during shipment to the United States.

By Claire Swedberg

April 2, 2007—Chilean avocado producer Rio Blanco is using radio frequency identification to track the temperature of its product as it travels by ocean vessel 6,000 miles from the company's farms in central Chile to the United States. Since the conclusion of a three-week pilot in October 2006, the system has allowed Rio Blanco to respond more quickly any time its avocados have measured as being too warm at any of the read points throughout transport.

Rio Blanco, Chile's fourth largest fruit exporter, is using technology provided by Evidencia Data Logger Technologies and manufactured by Evidencia affiliate Information Mediary Corporation (IMC) to ensure temperature monitoring. The system consists of 13.56 MHz tags compliant with ISO Standard 15693. The tags are named "paltags," after the Chilean word "palta" for avocado. Rio Blanco and third-party quality assurance officers at the port in Chile, as well as in Long Beach, Calif., use IMC handheld readers to interrogate the tags and determine if the products have been exposed to temperatures outside acceptable limits. Evidencia also provides Web-based software allowing Rio Blanco to monitor its avocados throughout the supply chain.

The October pilot began in the Serena Valley, in northern Chile, where avocados are grown. Here, 20 avocados were individually wrapped with RFID tags connected to temperature loggers while still on the tree. Within hours of being picked, they were loaded into bins and sent to a cooling area to bring their temperature to between 39 and 45 degrees. The bins were also tagged with Evidencia Log-ic TherAssure RF semi-passive temperature loggers.

The avacados and their tags then went through the rigorous process of being sorted, washed and waxed. After the avocados were packed into cartons for transport, a "master pallet" was tagged with the same temperature logger, and that pallet was linked with data for a number of other pallets traveling by the same vehicles.

When trucks arrived at the Chilean harbor in Valparaiso, 500 miles from where the avocados were picked, quality control officers for Rio Blanco checked temperature reads with handheld RFID readers. Had the temperature risen above permissible travel temperatures at any point along the way, an alert would have been sent to Rio Blanco management, and, if appropriate, the pallets would have been returned to cold storage to bring the temperature back to an acceptable level before any damage resulted.

RELATED_ARTICLES The avocados were then loaded onto ships, says Alex Salomon, a general partner at Evidencia. When the ships arrived in Long Beach, the system read the master pallet tag again before shipping the avocados to Green Giant's fruit subsidiary, Echo Farms. In the pilot, Salomon says, 100 percent of the tags were read. The pilot included individually wrapped RFID loggers on pieces of fruit, to test the durability of the loggers. Now, shipments only include tagging of the pallets and cooling bins.

"We had already done pilots from Chile to the port," Salomon notes, though no RFID temperature loggers had ever been tested from Chile to Los Angeles, which would have required three weeks at sea. Now, he adds, the company is providing similar systems to fruit producers Del Monte Corp., Capespan, Chiquita Chile and Sunview Marketing International.