Monitoring and Documenting Fruit and Vegetable Transportation

SwiTrace I-Plug Temperature Logger Protects Food Shipments

The customer was growing and exporting fruits and vegetables to distribution centers and markets. Almost all varieties of fruits and vegetables in demand were temperature-sensitive, making them highly vulnerable to contamination and spoilage. Maintaining the temperature of these products throughout the [cold chain](#) took the highest priority to avoid any health risks, including food poisoning. To ensure maximum product shelf life, these products needed to be shipped under optimum conditions from the time of harvest until finally being sold to the consumer.

Failure to manage and control the many stringent storage and transport conditions could prove to be very expensive for the customer if the product was received by the receiver in unacceptable condition for resale. The client then faced the risk of not getting paid for the product, having to negotiate a reduction in selling price due to loss of shelf life, or losing credibility with the receiver...all of which could result in extensive insurance and legal expenses. Therefore, it was essential that accurate temperature records were maintained during shipping to document proof of adequate product handling until the products reached their destination.

Installation

The customer installed a [SwiTrace I-Plug IPST8](#) transit temperature data logger inside each of their shipping containers. During shipments, the I-Plug recorded temperatures using an internal temperature sensor at a range of -40°C (-40°F) to +65°C (149°F). Monitoring was performed at a resolution of 0.1°C (0.2°F) and at high accuracy of ±0.3°C (0.5°F). The I-Plug's internal memory stored up to 8,000 readings at a sampling frequency of every 30 seconds to every 60 minutes. After each delivery was completed, the client simply plugged the I-Plug into a USB port on a PC to generate a complete pdf report. Data was also uploaded to the cloud service for remote access by the shipper.

Usage

Designed for the transport and shipping industries, the I-Plug proved to be a low-cost solution for the customer, and very affordable compared with other temperature loggers on the market. The loggers offered customizable alarm settings and a programmable start function and high and low alarm LEDs. Users could program the logger in either Celsius or Fahrenheit. Additionally, the I-Plug was downloadable via USB with no special interface hardware required. With a durable IP51 rating, the logger was tough given its small size at 73 x 15 x 33 mm and lightweight of only 30 grams.

The customer was able to use the SwiTrace cloud platform for access to calibration certificates of each logger and to remotely view the data once uploaded from the destination. The logger's software also confirmed for management that correct temperature procedures had been maintained throughout the process. The I-Plug configuration software was also utilized to configure the tolerance levels based on the products being shipped. Data transfer was supported to generic formats such as

Excel for quick exporting and organization of information.

Benefits

The client realized several key benefits from installing the SwiTrace I-Plug data loggers in all their perishable product shipments. The loggers easily performed all the monitoring needed for the fruit and vegetable consignments, so the customer would know exactly if and when the temperatures had gone out of specification, and could identify which parties were accountable. The cold chain transport was confirmed on every printout of the logger's temperature record, providing further proof of the client's due diligence, to support the customer's **HACCP program**.

The I-Plugs also provided the complete history of the temperature conditions relevant to the products' post-harvest condition, so the client was fully confident that the shipping risks had been significantly minimized or reduced. This often resulted in protection from negligence suits, prompt settlement of insurance claims, and successful negotiation of compensation from liable processors, transporters or warehouses in the event of problems. These out of specification conditions were also analyzed to control and document the customer's own product and service quality to continually optimize shipping. The I-Plugs' monitoring and recording features provided the customer with a low-cost solution for ensuring the maintenance of their high-quality product, promoting their company as a quality supplier with a reputation for wholesome produce.

For further information on **SwiTrace I-Plug temperature loggers**, or to discuss your specific application with our specialists, contact a CAS Data Logger Applications Engineer at **(800) 956-4437** or visit the website at **www.DataLoggerInc.com**.