Internet log service for flower supply chains

This summer has seen the completion of a project to develop quality tracking and tracing for cut flowers. Sponsored by the Dutch product board for horticulture, available technology was tested and integrated by researchers at the Agrotechnology and Food Innovations, WUR, into a system to comprehensively analyse the quality chain.

By Anabel Evans

Marten Thors, project manager logistics, Agrotechnology and Food Innovations, is enthusiastic to further develop the traceability concept to find answers to today's quality issues.

The first step in the tracking and tracing project has concentrated on the handling and transport from the auction to the consumer. Marten Thors, project manager logistics, is positive, however, that the concept can be extended up the production chain to the growers. The measurement of temperature and relative humidity in cargo shipments is certainly not new, but collating data in structured software programmes for further analysis is a major development for understanding what exactly happens to the growers' products before reaching the buyer.

Exporters have been attracted to the concept for several reasons:

- The data can be used to support investigations resulting from a customer's complaint.
- The data can be used to discuss claim issues more objectively.
- The efficiency of various distribution routes can be compared with reference to product quality.
- Monitoring conditions during transport reflects a proactive image towards quality control measures within the market.

Four pilot projects have been carried out using E-faqts, including cut flower shipments to Japan

Time management

The actual procedure does involve investment in man-hours. Data loggers must be pre-programmed and then placed in a shipment with details of the number and position communicated to colleagues at the destination. The data-loggers measure the temperature and humidity every 30 minutes. The responsibility of those receiving the flowers is to retrieve and either return or directly upload the data-logger information onto the system's network for analysis.

Where and when the data-loggers are used is a company decision but Marten points out that making use of the Electronic flower-and-quality-tracing-system (E-faqts) in the more complex product chains (i.e. during extreme weather conditions or when numerous handling steps are involved) creates data where the most can be learnt.

Generally, it is estimated that on the basis of 3-5 data-loggers being used in 3 shipments per week, the system's management will require 15-30 minutes per day for data-logger programming, reading the data and final analysis. Time must also be allocated for occasional calibration of the data-loggers, while the number of routes involved will also increase the time required to manage E-faqts.

The MicroLog from Fourier Systems was used during the pilot projects. The system is data-logger independent, however, and the choice of logger should be suited to the specific transport situations.

A learning system

The software combines data-logger technology with scientific knowledge of ornamentals production. For example, shipment comparisons can be extended to identify seasonal

The environmental conditions along a specific chain are measured. The transport performance can subsequently be objectively analysed and compared.

The new tool for monitoring quality is for businesses concerned with competing on service in the international markets.

trends; forecasts can be developed to predict vase-life in relation to temperature variations during distribution. A pilot project with Greenwings has been so successful that the E-faqts will continue to be used by the company. It is also now available to companies worldwide.

Perhaps most importantly, Marten is keen to explain that E-faqts is a system to share learning experiences and while individual companies can benefit from their own data, the records from individual companies collated on a protected basis will also provide a practical database to answer questions about 'quality-risk' moments in the supply chain. For example: When is it economic to pre-cool shipments? When should special packaging be used? Companies will also be able to benchmark their results with anonymous data from other chains.

It is obviously most interesting to develop the tracking and tracing with long-standing customers rather than one-off sales. And as to why the software technology has not been earlier applied, Marten says, "It is complicated to build up the information system into a computer model, but probably the move towards organised customer services management, as opposed to the more traditional 'quick-thinking' trading culture, has really encouraged this major step in quality tracking and tracing". Nobody in the chain can ignore the current focus on quality and added-value for the customer. There is also the pressure on the sector to strengthen trading relations.

As mentioned earlier, broadening the concept to include the growers is possible. "It is a short time-period between harvest and transport and they do have to make time", warns Marten, "but it must be seen as an investment for the future where certainly the grower connection could build in even more confidence to the marketing activities."

Marten further explained, "Our advantage is that we can not only monitor individual shipments, but also develop a quality progress model for each flower variety. We can show how the various factors of temperature, humidity and length of time cause a certain product to lose its quality. During the journey, temperature and humidity are the top culprits, but contributing factors are the initial quality and the flower variety itself. A superb product handled in a mediocre manner can arrive in a better state than an average product handled superbly."

Website: www.e-faqts.com

Tool to tackle trade hindrances

Greenwings, an exporter of cut flowers located in the Dutch city of Aalsmeer, regularly sends flowers by plane to Japan. The journey sometimes takes a week. The quality of the roses, tulips and other flower varieties can be considerably reduced due to high temperatures. Diseases, such as the much-feared botrytis, can also affect the flowers due to high humidity along the way.

Greenwings is tackling these trade hindrances by monitoring the climate conditions during the journey. Chris van Arenthals of Greenwings says that he has decided to chart the course of the flowers from the supplier to the customer to find out the causes of quality loss and to adopt a proactive approach to prevent them.

Specific incidents have been captured during a pilot exercise involving 50 batches of flowers exported to Japan. For example, frozen flowers on arrival resulted from the shipment standing in the open at Schiphol Airport for several hours during temperatures of -6°C before being loaded into the plane. It also exemplifies how exporters paying for air cargo shipments at specified temperatures can measure if that was indeed the case.