

# Thailand rising to perishable air cargo challenge

**Chris Catto-Smith** of Coolcargo provides an overview of the challenges currently facing Thailand's air-flown produce sector and the solutions being developed, including those offered by his own company

**O**VER the last decade the Thai fresh produce industry has established itself as supplier of high-quality fruit and vegetables to many international markets. This position has been reinforced in recent years with the increasing popularity of Thai cuisine internationally and growing consumer demand for fresh exotic fruit and ready-to-eat Thai vegetables and herbs.

A number of shippers have invested heavily in meeting the stringent demands for food safety compliance in key export markets as well as responding to concern over environmentally friendly packaging. This has been facilitated through the establishment of strong relationships with European supermarket importers and food technologists to assist in the development, optimisation and viability of their respective supply chains.

However, changing circumstances across the entire global fresh produce environment are now placing increasing pressure on both Thai and South East Asian fresh produce shippers. Now that awareness of Asian cuisine has been raised, end-customers are continually demanding newer and more easily prepared food products. These changing requirements come at a time when multiple competing suppliers are providing their own similar products at competitive prices.

The Thai fresh produce industry is facing a dilemma in that its market share is under threat, and both quality standards and shipping costs are increasing. The result is that cost reduction locally is the only effective manner in which to remain competitive. Whilst food safety certification for fresh produce is costly, it is an essential requirement for shippers to maintain ongoing orders from many Japanese, UK and European buyers.

Most Thai fresh produce shipped by air is temperature-sensitive and easily damaged through rough handling or thermal abuse during transit. However, shippers are compelled to use polystyrene foam and gel packs due to the current difficulties in maintaining cold chain integrity during transit, despite their poor loading utilisation in air cargo containers. Often shelf ready punnets of produce are loaded into foam boxes for their one-way journey. Once discarded, foam boxes are not easily recyclable and the gel packs used in many consignments can make up 15 per cent of the overall airfreight cost. Although more advanced forms of packaging are available, these have not been adopted due to concerns over temperature during transit.

The majority of Thai fresh produce exports are shipped on direct flights departing at night because of daytime temperature extremes in Bangkok and the need to match the requirements of an early morning delivery to markets. Due to limited capacity,

airfreight rates on these particular flights are high. Alternate routes to European markets through the Middle East transit hubs such as Dubai, Abu Dhabi and Doha offer lower freight rates, but cannot provide consistent or effective cold chain control during transit ground handling for certain times of the year.

Along with many other airports in the world, air cargo unloading facilities need to offer protection from the heat and weather, particularly in regard to cold room receiving facilities. Ideally phytosanitary inspections should take place in packhouses where correct temperature control can be maintained and produce can be packed in sealed boxes ready for transit. Currently in Thailand, this process is still taking place in the Free Zone Cargo facilities just prior to build-up loading, presenting challenges in maintenance of cold chain integrity.

A number of discussions are taking place in Thailand regarding the development of a next generation dedicated



Cold chain delivery methods range from advanced (left) to basic (above) perishable centre to support air cargo exports. However, as an important first step, existing facilities and processes must be improved to ensure that market share is retained in the face of increasing global competition.

Following the opening of the new Suvarnabhumi Airport in Bangkok a number of improvement initiatives have been put in place to address many of the problems mentioned above. Universities, cargo terminal operators, airlines, shippers and freight forwarders are all involved in these projects and are responding to improvement opportunities that focus on boosting the competitiveness of Thai fresh produce exports.

These initiatives concentrate on upgrading product packaging; cold chain handling techniques; inbound transport improvements; the introduction of special cold chain handling services during ground handling; and effective tem- ▶

perature control during air transportation.

Rather than attempting improvement in one area alone, these projects are being coordinated across the industry, resulting in some surprisingly good results.

Already some programmes are providing benefits or savings at each stage of the supply chain sufficiently well to maintain competitiveness.

When the new Thai airport opened there was significant speculation over how the world-class perishable handling operations could better support the Thai fresh produce industry compared with the limited facilities of the old Don Muang airport. The new airport is one of the busiest perishable air cargo export facilities in the world, with 180-200 tonnes of perishables being shipped everyday. These comprise mainly flowers (orchids) and fresh produce (asparagus, okra, babycorn, man-gosteen and ready-to-eat produce). The main markets are Japan, Europe and the Middle East, with up to 60 per cent of EU-bound produce being sold into UK supermarkets alone.

Despite the initial lead-time to establish full operations, the airport is now supporting the industry well. However, now the focus is on the introduction of high-quality perishable handling services. Suvarnabhumi is home to two new air cargo terminals – Bangkok Flight Services (BFS) and Thai International (Cargo). BFS has facilities with full temperature control for receiving, build-up and pre-conditioning of product, and it utilises the specialist cold chain handling services of Coolcargo.

Thai International receives perishables on an open dock area but is equipped with a large air-conditioned build-up area ideally suited for flowers. Each facility is actively seeking ways to improve its existing operational processes and infrastructure to meet the changing requirements for handling perishables.

Coolcargo, a new company based in Thailand, has already made a significant contribution to addressing many of the problems being faced across the Thai fresh produce industry in regard to improving the efficiency, quality and thermal protection of air cargo exports. Adopting an end-to-end problem-solving approach, a range of new solutions and services has been introduced for the benefit of the overall industry. These solutions range from low cost, practical thermal protection equipment for airside tarmac temperature control of loaded lower deck ULDs (unit load devices) to providing managed services for perishable handling

activities. New generation cooling solutions are being developed to address thermal protection for perishables being shipped on PMC flat pallets.

Coolcargo has developed a 'special care' cold chain handling solution to con-

and air transportation.

Coolcargo is developing an additional solution that utilises a demountable insulated thermal box that can be loaded into at the packhouse, transported to the air cargo terminal by conventional truck,



Coolcargo's thermal protection tarmac solution is designed to be low cost and practical

control temperature from the packhouse through the cargo facility and on the aircraft to destination. This solution is ideally suited to mid- to high-density produce such as babycorn, asparagus and potentially flowers. It results in minimal temperature increase without the requirement for foam boxes or gel packs. Shippers are therefore able to move to using thin-walled, lower cost cartons, so the utilisation of ULDs can be significantly improved and there are further freight rate savings to be gained on not having to use gel packs.

The special care solution involves tight cold chain control for each step of the handling process from packhouse to destination airport. In order to ensure that the overall process works, special care requires a combination of correct temperature at the packhouse and on inbound transport; good logistics practices during unloading; pre-cooling and pre-lining of standard ULDs; and thermal protection of loaded containers on the tarmac.

The special care service is able to provide immediate benefits. As an example, asparagus traditionally shipped in foam boxes in an LD3 can only achieve a net weight of 650-700kg, often including up to 150kg of gel packs. Product temperature cannot be controlled once it leaves the packhouse and the product is vulnerable to temperature fluctuations. Using the Coolcargo solution, shippers have been able to load 1,400kg in a specially lined standard LD3 and maintain a core product temperature within a 2-3°C temperature range for a 21-hour period during ground handling

x-rayed and loaded directly onto a PMC pallet. The containers use a standard euro-pallet base and are the height of a lower deck cargo container. Six of these



L-r: Coolcargo's Chris Catto-Smith with Crispin Morris and John Yep of Bangkok Flight Services

containers fit exactly onto PMC pallets and are restrained with a cargo net. At the destination the complete box is collapsible and nested (60 per PMC aircraft container) for return to origin.

In developing new cold chain handling practices at Suvarnabhumi Airport, the industry has begun to address problems and constraints across the entire Thai fresh produce supply chain from post-harvest, through transportation and air cargo handling to temperature control in the air. If all parties continue to work together to extend the special handling services across all operations, it will result in ongoing cost reductions, improve product quality and ultimately stimulate overall demand. ■