

The DAIKIN logo is positioned in the top left corner, featuring the brand name in a bold, white, sans-serif font. It is partially overlaid by a white diagonal graphic element that extends from the top left towards the center of the page.

THE NEWSLETTER FROM DAIKIN REEFER  
Spring 2020

The logo for Degree Celsius is located in the top right corner. It consists of a stylized white 'C' with a small circle at the top left, set against a blue background. Below the logo, the words 'DEGREE CELSIUS' are written in a white, sans-serif font.The background of the entire page is a top-down view of various fresh fruits and vegetables arranged on a light-colored wooden surface. The produce includes blueberries, figs, kiwi, snap peas, avocados, green apples, lemons, tomatoes, papaya, oranges, and carrots. The central text is superimposed on this background.

# LATIN AMERICAN SUCCESS STORY CONTINUES

# Welcome

From Katsuhiko Tetsuya Director of  
Daikin Reefer Container Sales Division

**W**elcome to the Spring 2020 Edition of the Daikin Reefer Newsletter. We've got lots to update you on in this edition which has a particular focus on the Latin American perishables trade.

Last year was a great year for the reefer trade and for Daikin and we would like to thank all our customers for their continued support. While the container industry suffered from the slowdown in global trade, reefer shipping remained in good shape with demand rising across the world. This has in part been driven by outstanding growth in the volume and variety of fresh fruits exported from Latin America, something that we look at in this edition's market focus.

*The global supply chain and the world at large is facing a period of challenge in the face of the Coronavirus outbreak. We have already seen disruption to both containerised trade and port traffic across the world. Until the potential full extent of the virus's impact is better understood, we will closely monitor the situation and make plans as needed.*

## Shipping's sustainable future

As ocean carriers and shippers are starting to absorb the real-world impact of the International Maritime Organization's Low Sulphur Fuel Cap regulations that came into force on January 1st this year, we report on the industry collaboration required to tackle Greenhouse gases (GHGs), drive decarbonisation in the shipping industry and improve sustainability in the context of the UN Sustainable Development Goals. Daikin's Environmental Vision 2050 sets out our commitment to protect our environment by ensuring we meet regulatory requirements and continue to engage with ocean carriers, ports and other stakeholders to mutually address how to reduce energy consumption and emissions at sea and elsewhere along the chain.

## Pioneering shipment from Taiwan

We are particularly proud of how our controlled atmosphere (CA) refrigerated container technology was selected earlier this year by Yang Ming Line for a historic shipment of Taiwanese guava fruit to the USA. Active CA ensured optimal produce quality while complying with rigorous pest control regulations by using cold treatment quarantine process that maintains optimal transport conditions.

As well as providing its Active CA and container refrigeration technology, Daikin Reefer supported the shipment by closely monitoring temperature, oxygen and carbon dioxide levels inside the container throughout the shipment. Following immediate inspection by US Department of Agriculture officials, the shipment was cleared and released for onward delivery within 24 hours.

## Client partnerships

Our business is all about partnerships and in this newsletter edition we are proud to present some great success stories from our Latin American customers: Dole is one of the world's largest producers and marketers of fresh fruit and vegetables and has been using Daikin's ZeSTIA units since 2013 to deliver its perishable cargoes; Seaboard Marine provides ocean transportation services across the Americas and successfully uses our ZeSTIA units to transport a wide variety of fruit, including those that require Active CA and cold treatment.

## Investment in Training and Service

As ever, we are committed to providing our global service network of customers, technicians, service dealers and reefer mechanics with best-in-class training so that they are able to manage and maintain their Daikin equipment to very high standards and trouble-shoot any problems quickly and easily. In this edition, we report further on our global Training and Education programme.

We hope you enjoy our latest newsletter. We are always looking for feedback on this, so please don't hesitate if you have any comments or would like to see specific topics featured.



# Daikin environmental vision

Shipping's sustainable future will be fuelled by R&D, innovation and collaboration

**D**aikin supports efforts of the global shipping industry to promote sustainability, improve energy efficiency and tackle climate change.

As 2020 gets underway, ocean carriers and shippers are starting to absorb the real-world impact of the International Maritime Organization's Low Sulphur Fuel Cap regulations that came into full force on 1 January. As we reported in our last newsletter the IMO2020 rules require shipping companies to switch to vessel fuels with a maximum 0.5% sulphur content. These currently include low sulphur fuel oil (LSFO), liquefied natural gas (LNG), methanol and hydrogen. Shipping lines can also use scrubber technology to reduce exhaust emissions from traditional high sulphur fuel oil (HSFO).

Media and industry reports during January and February paint a mixed picture about the practicalities of complying with IMO2020. What is clear is that no-one doubts the cost, operational and technological implications of this global shift. But even while dealing with the ongoing challenges of the IMO2020 transition amid the unforeseen global impact of the COVID-19 coronavirus, the shipping industry is already looking ahead to an even bigger green goal: reducing greenhouse gas (GHG) emissions from shipping by at least 50% by 2050.

The 50% GHG reduction from shipping by 2050 is the target set by IMO to ensure that shipping plays its part in meeting the 2016 Paris Agreement to mitigate global warming and achieving the UN Sustainable Development Goals (SDGs). Some major container shipping interests have already stated that they intend to surpass the IMO2050 goal, with their eyes set firmly on a carbon-neutral future, not just for their ocean-going operations but also in landside logistics as an essential element of maritime supply chains.

One thing is sure – over the coming years, a great deal of R&D innovation and industry collaboration will be needed to improve energy and emissions efficiency in maritime supply

chains. This is equally the case in the refrigeration and air conditioning industries, which intersect with world trade, shipping and logistics when it comes to the transport of food, medicines and other temperature-controlled cargoes. Indeed, Daikin's own Environmental Vision 2050 has a target of reducing greenhouse gas emissions from our activities, products and services to net zero by 2050.

In a speech on 20 February, IMO Secretary General Kitack Lim stressed the "urgent need" to develop concrete measures to support IMO's GHG emissions reductions strategy and called for more collaboration to build a truly sustainable future for shipping. "Ambitious regulatory targets - adopted by IMO backed up by technical cooperation and capacity building activities - will act as the catalyst for technology, triggering research, development and innovation," he said.

In December last year, eight global shipping bodies\* came together to propose the creation of the International Maritime Research and Development Board (IMRB), a non-governmental R&D organisation that would be overseen by IMO Member States, to support technology transformation towards a carbon-neutral and energy-efficient future. IMO is due to debate the IMRB proposal in March this year, which calls for a mandatory fuel levy to create a USD5 billion fund for R&D into new fuels, propulsion systems and other innovative approaches that will help shipping meet the climate challenge.

Global ocean carrier CMA CGM has also launched an 'alternative energy coalition' focused on developing competitive, less carbon-intensive energy sources for transportation, starting with maritime. Meanwhile, several new collaborative R&D initiatives have been launched by established technology providers looking to transform the energy footprint of shipping, ports and transportation.

These are just a few examples of how regulators, private and public sectors in the shipping world are stepping up - and linking up - to address the sustainability challenge. As



**IMO2020 rules require shipping companies to switch to vessel fuels with a maximum 0.5% sulphur content**

world trade in food and other cold chain cargoes remains a key growth area, it is also vital for providers of transport refrigeration and climate control technologies to have a strong voice and contribution.

Through a combination of innovation, technical expertise, forward planning and a commitment to quality, Daikin is prepared not only for upcoming known 'green' regulations, but to collaborate and co-create with industry colleagues and clients through a period of profound and as-yet unknown change.

This is just the beginning of a new normal for world trade. What we can be sure of is that the focus on sustainability will intensify and environmental regulations will get stricter.

**We are ready.**

\*IMRB member organisations are BIMCO, Cruise Lines International Association, INTERCARGO, INTERFERRY, International Chamber of Shipping, INTERTANKO, International Parcel Tankers Association & World Shipping Council

# Market focus

## Vision and determination drive Latin American perishables success story

**The growth in perishables exported from Latin America has been one of the big trade success stories of the last ten years. Latin America is now one of the world's top producing regions for fresh fruits and vegetables, as well as beef, pork and poultry. There are no signs of this stopping soon – the region now accounts for 16 per cent of the world's food and agriculture production. Brazil and Argentina lead in terms of net exports overall, but in perishables, the stars of the show have been Chile and Peru. The statistics are impressive. Since the mid-1990s, Chilean exports gone from around US\$1.3m to over US\$5.5bn and Peru has seen similar growth.**

This success has not come about through luck. It has been driven by three key factors: a longstanding commitment to opening up new markets through trade agreements; the vision and commitment of the producers to market build a distinct brand and, finally, great produce that can now be shipped all over the world – increasingly to Asia – and arrive in great condition.

*A steady growth in shipments to Asia from Latin America has been driven by consumers looking for greater variety and quality in fresh food, especially as great value is placed on the health benefits of 'superfoods' such as avocados and berries, both of which are produced in abundance in this important region.*

### Building a network of trade agreements

Both Chile and Peru have built a diverse network of trade agreements. Chile has 26, including ones with the US, EU, Australia, China. Peru has a similar network and both are part of the Comprehensive and Progressive Agreement for Trans-Pacific Partnership, due to come into effect later this year and which also covers key Asian growth markets including Malaysia, Singapore and Vietnam as well as New Zealand and Japan.

The Mercosur trade block of Argentina, Brazil, Paraguay and Uruguay (Venezuela is suspended) has traditionally been more closed, but the trade deal agreed last year with the EU (after 20 years of negotiations – good things come to those who wait!) has sent a strong message. The agreement proposes immediate tariff reductions for 81 per cent of agricultural products from the South American bloc, including apples, pears and table grapes, while other products, including citrus, berries and some vegetables, will see tariffs reduced gradually to zero over a four to ten-year period.

### Developing strong brands

Trade agreements can only take you so far. The global market is competitive and lots of countries are looking to grow in the high-value fruit and vegetable markets in particular. Chile and Peru have built outstanding trade organisations to help make sure their voice gets heard, such as ASOEX (Fruit Exporters Association of Chile) and AGAP (Association of Agricultural Producer Unions in Peru). These are backed up by support from relevant government agencies that have a clear vision for how they want the industry to develop.

This has led to sophisticated marketing campaigns that have helped producers to move into new areas and build market share early. For example, Peru promotes the country using the "superfood" label while Chile promotes its fruit as being "world-class". Chile has also marketed its cherries to China effectively and early. As a result, cherries overtook table grapes to become the country's leading fresh fruit for export last year – a development almost entirely driven by demand from China.

*As China develops its "belt and road" initiative we can expect to see more investment in the Latam fruit sector and more trade with this key economy.*

In case China isn't a big enough market, last month a sea freight shipment of Chilean cherries also landed at a port in India. As a sign of its commitment to the region, Peru has extended its official partner status to next year's Asia Fruit Logistica – a sensible investment in a growing market.

### Reaching new export markets for outstanding fresh produce

The achievements and potential of Latin America can be seen most clearly in the phenomenal rise in blueberry production there. Peru, which is hosting the 2020 meeting of the International Blueberry Summit in Trujillo, is aiming for over 120,000 tons of export in the 2020-21 season. Argentina has also started exporting this fruit to China and Colombia is also looking for a place in the world market. According to the market intelligence site Tridge, Chile is now the top exporter, followed by Peru, with Mexico in fourth, Argentina eighth and Uruguay at twentieth.

It's a competitive table, and key to growth, especially in the dynamically evolving region of Asia, will be the ability to deliver the produce at the right time, in fresh condition and at a reasonable price. That is where Daikin's market-leading Active Controlled Atmosphere (CA) technology can help give our Latam customers an edge as they look to grow market share and open up new markets, especially in Asia.



Daikin's Active CA is already successfully supporting producers and shipping lines transport Latin American fresh produce such as avocados, blueberries, artichokes, asparagus and mangoes over very long distances by sea to Asia and other parts of the world. By adjusting the mix of atmospheric gases inside refrigerated containers – reducing O2 and CO2 and increasing nitrogen – CA slows down the ageing process for fresh produce during transit, allowing a wide range of produce to be transported over longer periods of time, extending its shelf life and helping Latin American producers reach new export markets in both a cost- and environmentally effective way by sea rather than air.

We look forward to supporting these companies on the next stage of their journey as their market share continues to expand, helping them reach new export market and ensuring consumers all over the world receive Latin American fresh produce in optimum condition.



'Superfoods' such as blueberries and avocados are exported in high volumes from Latin America around the world

# Customer focus

## Industry-leader Dole purchases a further 490 Daikin ZeSTIA units



**A**s one of the world's leading producers and marketers of high-quality fresh fruit and vegetables, Dole understands how important it is that fresh produce arrives at its destination in peak flavour and condition.

Dole placed its first order for ZeSTIA units in 2013, and operated these units in shipping services between Costa Rica, Honduras and Guatemala and the USA. Due to the success of delivering perishable cargoes, Dole placed further orders of high performance ZeSTIA units in 2015 and 2017.

This fourth order from Dole for 490 additional ZeSTIA units, of which 10 are fitted with Daikin's leading Active CA technology, confirms the company's confidence in the performance, reliability and quality of Daikin's equipment.

Daikin's position in the important Latin America market speaks to its strength to deliver and this new order demonstrates how well-positioned Daikin is to support the continued rise of Latin American fresh-produce producers and exporters as well as the companies that transport these perishable cargoes.

"We continue to be impressed with the quality of Daikin ZeSTIA units, as well as the Daikin Service team and distribution centres, all of which make an important contribution to our effective operations," said Ms. Ana Lisette Anchia, Dole Equipment Manager. "We have complete confidence in the performance of ZeSTIA units in transporting fresh produce so that it arrives in optimal condition and look forward to deploying these new ZeSTIA units across our service routes".



Dole transports fresh produce using Daikin ZeSTIA units

# Customer focus



## Seaboard Marine continues its business expansion with its fleet of Daikin ZeSTIA units

**S**eaboard Marine is an ocean transportation company providing direct and regular services between North America, the Caribbean Basin, Central and South America. With a fleet of over 25 vessels serving nearly 40 ports, Seaboard Marine has established itself as a trade leader in the Western Hemisphere.

Seaboard Marine placed its first order for 400 Daikin ZeSTIA units in 2016, and then added a further 300 in 2019. Further purchases since then have increased their fleet of Daikin ZeSTIA units to over 1000, with more than 600 units fitted with Active CA. Since first deploying ZeSTIA units in 2016, the Seaboard Marine team has been impressed with the benefits and technology of these units, including inverter technology, a USB function and the hot gas defrost system.

Seaboard Marine transports perishable cargoes that need Active CA, such as avocados and asparagus from Peru

to the USA, together with berries and citrus fruit. It also transports perishable cargoes that require cold treatment.

The Daikin Reefer team has held Training seminars with Seaboard technicians to ensure they have all the knowledge needed to operate, repair and maintain their ZeSTIA units. Daikin Reefer ensures that the team at Seaboard is kept up to date with ZeSTIA unit technology and operations so that they can deploy their fleet to maximum benefit. Most recently Mr. Frederick Urbina, M&R Manager for Seaboard Marine, visited Daikin's TIC (Technologic and Innovation Center) in Japan to meet the Daikin Reefer team and to discuss the latest in CA technology, refrigeration and GPS monitoring opportunities.

"As our business expands, we are delighted to continue our partnership with Daikin Reefer and are fully satisfied with the performance of our ZeSTIA units for perishable cargoes that require both CA and CT treatment." said Mr. Urbina.



Seaboard's M&R Manager Mr. Frederick Urbina (4th from the right) next to Mr. Robert Ferreyra, Daikin Sales & Marketing Manger for The Americas Region and Daikin team members from Sales and Design Divisions

# CA Update

## Daikin controlled atmosphere container technology selected by Yang Ming for landmark shipment of Taiwanese guava to the USA

**In January this year, Daikin Active controlled atmosphere (CA) refrigerated container technology was selected by ocean carrier Yang Ming Marine Transport Corporation for a historic shipment of Taiwanese guava fruit to the USA to ensure optimal produce quality while complying with pest control regulations.**

In October 2019, the USA signed a major trade agreement with Taiwan after many years of negotiation, paving the way for the first ever export of Taiwanese guava to the USA. Previously, concerns over unwanted pests such as fruit flies entering the USA had meant only Mexico was permitted to export guavas to the USA. The trade deal between Taiwan and the USA was negotiated over a ten-year period, reflecting rigorous US sanitary and phytosanitary protocols. With its first shipment of guavas to the USA, Taiwan became the only Asian country and just the second in the world now permitted to export this popular fruit.

Guavas enjoy global popularity: this fruit is a popular snack in Taiwan and sold on many street corners: in Pakistan it is known as the winter national fruit and in the Philippines, it is an ingredient in sinigang, a national sour soup. In Mexico and Latin American countries, the guava-based drink 'agua fresca' is particularly popular and guava juice is also drunk in many other countries. Often eaten raw and cut into quarters like apples and served in fruit salads, this fruit can also be used to make candies, preserves, jams and marmalades due to its high pectin levels. In Brazil, an infusion of guava fruits and leaves forms a leaf-tea, considered to have medicinal properties.

Guavas carry many health benefits including cancer prevention and diabetes management. They can also help manage blood pressure, support healthy digestion, thyroid health and a healthy metabolism, as well as improving the immune system, slowing down the aging process and supporting weight loss. For these and many other reasons, guavas are believed to be one of the most nutritious fruits grown on the planet today.

Although cultivated in many tropical and subtropical countries, guavas grown in Taiwan are particularly celebrated for their taste, flavour and texture and their high nutritional value means they can be both eaten raw and made into juice. Taiwan is often dubbed the 'Fruit Kingdom' for its ideal growing conditions that support a great variety of tropical fruits.

The first shipment of Taiwanese guava to the USA took place this January with the help of Daikin's controlled atmosphere technology (CA). Daikin's CA was selected by the shipper and Yang Ming Marine Transport Corporation to comply with the demanding cold treatment quarantine process while maintaining optimal transport conditions for the premium guava. Cold treatment, used internationally to prevent the spread of fruit flies without the need for pesticides, requires the core pulp of fruit to be maintained consistently below a certain temperature for a specified number of days during transport. In the case of Taiwanese guava, US rules specify that the core of the fruit must be kept below 1 degree Celsius for 17 consecutive days.

The Daikin Active CA system reduces oxygen and carbon dioxide and boosts nitrogen levels to quickly put fresh produce into a state of hibernation. This helps to maintain the quality and extend the shelf life of a wide range of fresh produce, even on the longest of journeys. Daikin's Active CA charges a rich nitrogen gas into the container which reduces the oxygen content, in turn reducing the respiration of the cargo, providing all-important humidity maintenance. Combining Daikin Active CA VPSA technology with cold treatment helps to counteract potential chilling injuries and other negative effects of holding higher maturity fruit in a low temperature environment over extended periods. This ensures the best possible cargo care and quality outcome along with regulatory compliance.

The containerload of guava was shipped from Tainan in southern Taiwan early this January via the Port of Kaohsiung aboard the containership YM Mandate. The consignment arrived on January 14 at the US West Coast



**The guavas were shipped from Taiwan to the USA using Daikin's controlled atmosphere container technology**

Port of Los Angeles and, following immediate inspection by US Department of Agriculture officials, was cleared and released for onward delivery within 24 hours.

As well as providing its Active CA and container refrigeration technology, Daikin Reefer supported the landmark export with close monitoring of temperature, oxygen and carbon dioxide levels inside the container during the entire shipment. Both the exporter and importer were highly satisfied with the shipment outcome and the guava were distributed to the market within hours. The entire shipment sold out in a single day.

This ground-breaking shipment using Daikin Active CA was welcomed by the entire team involved.

"We appreciated the benefits that Daikin Active CA brought to our first ever shipment of guava from Taiwan to the USA under cold treatment," said Mr. Wang Tang, AVP of Commercial Reefer Department for Yang Ming Marine Transport Corporation. "We are proud to help open up the important US market for Taiwanese guava, which is already enjoyed by consumers in Canada, China, Hong Kong and Singapore".

"To ship guava using Daikin Active CA from Taiwan to the USA is an exciting project and we are very proud to be at the forefront of this important trade development that allows more overseas consumers to enjoy the flavour of famous Taiwanese tropical fruits" said Mr. Mark Wu, President of Top Quality Produce.

"We are delighted that Daikin Active CA and refrigeration container technology was selected for this historic shipment, ensuring that the top-quality reputation of Taiwanese guava was maintained while meeting all the required safety controls. To our knowledge this is the first use of CA container technology combined with cold treatment in the international transport of guava," said Mr. Ah Huat Goh, General Manager, Global Marketing & Service, Reefer Department at Daikin Reefer. "We now look forward to supporting the growth of this exciting new export trade for Taiwan".



**Taiwanese guava are celebrated for their taste, flavour and high nutritional value**

# Training and Education programme update

Daikin Reefer's global Training and Education programme continues to expand and support its customers worldwide

**D**aikin Reefer is committed to providing its global service network of customers, technicians, service dealers and reefer mechanics with best-in-class training so that they are able to manage and maintain their Daikin equipment to very high standards and troubleshoot any problems quickly and easily. Helping our customers to deliver superior customer service to their customers and ensure minimum damage and deterioration to equipment whilst maintaining optimal operation is a priority for the Daikin Reefer team.

Equally as important for Daikin Reefer is the 2nd hand reefer market: our resale units are held in high regard. Our team has recently been busy conducting training sessions specifically for 2nd hand reefer traders and their technical teams.

We held a 'Touch and Feel' training seminar in Dubai in December 2019 which was led by Harm Louwen, Sales Engineer from Daikin Reefer's Rotterdam office, Daisuke Tokuyama, Deputy Manager from ITOCHU Metals Corporation, Japan and Toshiyuki Shimizu, Sales Senior Manager from Daikin Headquarters, Japan.

The session was attended by technicians from Dolphin Shipping Line, RSL Container Lines and Bhavani Group and the focus was how to promote and expand sales of 2nd hand Daikin resale reefer units in the Dubai region.

The technicians in attendance also learned more about Daikin Reefer's position in the global reefer market, together with the benefits of the hot-gas and energy-saving functions provided by Daikin units. Theory-based technical classroom teaching was supported by hands-on training in the depot.

Simon Li Bing, Sales Manager and Mike Ma, Service Manager from the Shanghai office travelled to Shenzhen, China, where they led a Technical Training Seminar for technicians from Container Services Ltd, together with Shenzhen Tian Li Tong Container Services Co. Ltd, Shenzhen Johan Container Service Co. Ltd, Shenzhen Shen Sheng Container Services Co. Ltd and Shenzhen Qi Zheng Container Services Co.Ltd.

These customers are 2nd hand reefer traders and had requested an in-person Technical Training Seminar from the Daikin Reefer team, so that they could improve their knowledge of resale units, their functions and benefits.

The attending technicians had good existing knowledge of both Daikin's LXE10-E-A model and general Daikin unit operations. The LXE10E-A model's latest new features and software updates were explained, including DTMS, EEV modification, the new alarm codes for F803 and the Genset mode setting. The team also learned more about the improvements being made to the LXE10E100 and ZeSTIA 1st generation units which might be available for resale soon in the 2nd hand reefer market.



Daikin Reefer's Sales Engineer Harm Louwen led hands-on training in the depot during our Dubai 'Touch and Feel' seminar