

**PMAC weekly update 16th to 23rd April**

1. **Government agencies**: ICPRs and Country freedom status; Significant Contribution to Food Safety Award; WCO3 information sessions.
2. **New Zealand News:**  Progressive and inclusive Trade for All Agenda launched; Let’s protect our valuable soils; US position on TPP unclear, says Govt; Kiwifruit sales to China & Japan set to hit $1 billion; Zespri Group: Gold3 licensing tender to generate $195 million in 2018; Unlisted celebrates first $1 billion issue as Zespri resumes trading; Seeka purchase; Tougher South Australia import restrictions; Tasmania lifts ban on fruit from Melbourne fumigation facility**.**
3. **International news:** European Commission to ban unfair trade practices in food supply chain; Global body adopts new measures against spread of plant pests; Australian Seed Company making the most of restriction on imports; Label manufacturer develops anti-counterfeit labels; Singapore: Syngenta opens digital innovation lab; China: Apple import and export markets; Season's First New Zealand Kiwifruit Arrive in China; Zespri" imitation "Zeopri" confuses the market; Yiguo’s Win-Chain to Boost the Fresh Food Industry with Big Data; China: Walmart unites suppliers in "Fresh Food Alliance"; 7Fresh: The supermarket of the future; WHO claims Australia exported listeria-tainted rockmelons to nine countries; Two Singapore patients infected by listeria bacteria; US: Government narrows E. coli outbreak search; An alternative to chemical control in open field carrot and cabbage production; Study shows reusable plastic containers emit 60% less CO2; More fruit means fewer wrinkles; Raw fruit and vegetables produce better mental health outcomes; Farming drone imagery often inaccurate; Researchers develop first gene drive targeting worldwide crop pest

***Editors Comments***

*A smaller bag of New Zealand news this week. Of note in this news are two items. First the release of a new Importing Country Requirements document on the MPI web site. This time for Cambodia. And secondly the news that the Government will be undertaking a public consultation on it new Trade Agenda. The full article confirms the importance of trade to New Zealand and looking for a public mandate for the Government’s position on a number of areas that may be included in negotiations.*

*In the international space the fallout from Australia Listeria outbreak continues with recognition that contaminated melons were exported and have caused illness in Singapore. In the regulatory space the EU is introducing legislation to stop unfair trading practices in the food supply chain particularly by retailers. This will affect also non EU businesses and is currently open for submissions.*

*In the China section two articles touch on supply chain management and the issues of supplying fresh produce throughout the country. Multi party cooperation and alliances are one way that companies are working to resolve their issues. Meanwhile for a look at future shopping see the 7 fresh. Interactive screens and good access to information are some of the innovations that are just around the corner.*

1. **Agency news**



* 1. **ICPRs and Country freedom status**

A new ICPR for Cambodia has been created see [Importing Countries Phytosanitary Requirements](http://mpi.govt.nz/law-and-policy/requirements/importing-countries-phytosanitary-requirements/)

The Country freedom status database has also been updated confirming the mite *Halyomorpha halys*is not present in New ZealandSee [Country freedom status](http://mpi.govt.nz/news-and-resources/resources/registers-and-lists/country-freedom-status/)

* 1. **Significant Contribution to Food Safety Award**

MPI is calling for nominations for an individual, a team, or an organisation that has made a significant improvement to food safety in New Zealand. This could include a development or improvement of a specific process or operation, for one particular sector or across a few sectors.  The award is non-financial. For more details see the MPI web. Nominations close at 5pm 24 May 2018.

[Full details available here](http://mpi.govt.nz/about-mpi/our-work/scholarships-and-awards/significant-contribution-to-food-safety-award/)

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* 1. **WCO3 information sessions**

The WCO3 format of cargo clearance and reporting messages will be mandatory from 1 July, except for the Inward Cargo Report (ICR).  See the [TSW update](https://govt.us11.list-manage.com/track/click?u=5bcebe8ff41247a98e67420c5&id=4afb1f8285&e=e76458644d) on our website for details. WCO3 messages include a range of messages for the import and export of goods from New Zealand. For a complete list [see here](https://www.customs.govt.nz/globalassets/documents/tsw/summary-of-wco3-messages.pdf)   
  
Customs will hold information sessions on the WCO3 messages around the country (between 27th April and 3rd May) if there is sufficient interest. Note this is not training, as customs cannot train you in the particular software you use. The purpose is to explain what is different about WCO3 messages and processes, and answer any questions you may have. Customs will also put the presentation on their website for those who can’t attend the sessions. [Full article available here](https://www.customs.govt.nz/about-us/news/important-notices/wco3-information-sessions/)



1. **New Zealand News**



* 1. **Progressive and inclusive Trade for All Agenda launched**

The Government will ask New Zealanders what is essential to them in future trade talks. Minister for Trade and Export Growth David Parker said the move builds on the Coalition Government’s approach to negotiating the recently-signed Comprehensive and Progressive Agreement for Trans-Pacific Partnership.

Cabinet has agreed on some key principles for the trade policy agenda, including opposition to Investor State Dispute Settlement clauses. Consultations on the progressive Trade for All agenda will start in the coming months. The Cabinet paper is available on the Ministry of Foreign Affairs and Trade [website](https://www.mfat.govt.nz/en/trade/nz-trade-policy/trade-for-all-agenda) [Full article available here](https://beehive.govt.nz/release/progressive-and-inclusive-trade-all-agenda-launched)

**General**

* 1. **Let’s protect our valuable soils**

The need to protect New Zealand’s best soils for growing healthy fresh fruit and vegetables is clear in the 'Our land 2018 report' released last week. This report highlights the expansion in urban areas (a 10 percent increase between 1996 and 2012) and the accompanying loss of some of our most versatile land. HortNZ believes the valuable growing soils - which are often termed elite soils - should be protected by central Government policy. We can’t afford to keep losing these soils if we want to continue feeding New Zealand their favourite fruits and vegetables.  
  
Hort NZ acknowledges knowledge that the report cites some instances where horticulture is outside the soil quality indicators they used, but would also like to point out a lot of work is underway to mitigate soil erosion and run off. [Full article available here](http://www.freshplaza.com/article/193156/Lets-protect-our-valuable-soils)

* 1. **US position on TPP unclear, says Govt**

According to Trade Minister, David Parker, it is still unclear whether the U.S. was committed to returning to the Trans Pacific Partnership. U.S. President, Donald Trump, told officials to look at signing the partnership. However during his campaign Trump was against the deal calling it a disaster but now he sees it as a way to balance China’s influence in the region. Mr Parker added there had been no official confirmation.

Prime Minister, Jacinda Ardern, noted that it would trigger a whole new process if the U.S did genuinely want to re-join. In the revised CPTPP, there are changes such as new provisions to narrow the ability of foreign investors to sue governments. National Party Trade Spokesman, Todd McClay, said the U.S’ change in direction was welcome and they should engage with officials as quickly as possible. He noted that none of the provisions were significant enough to prevent NZ from seeking access to North America. [Full article available here](http://www.nzherald.co.nz/business/news/article.cfm?c_id=3&objectid=12032005)

**Industry news**

* 1. **Kiwifruit sales to China & Japan set to hit $1 billion**

Kiwifruit marketer Zespri says its latest sales to China are tracking at a record half a billion dollars, while Japan looks set to earn another half a billion. These two countries are Zespri‘s biggest customers. Most of the kiwifruit sold there in the 2017-2018 season was grown in New Zealand, with supplies from Zespri-contracted growers overseas, including in Japan, supplementing demand. [Full article available here](http://www.freshplaza.com/article/192875/Kiwifruit-sales-to-China-and-Japan-set-to-hit-1-billion)

* 1. **Zespri Group: Gold3 licensing tender to generate $195 million in 2018**

Zespri Group have said that corporate revenue from the 2018 allocation of the Gold3 license release will be $190 to $195 million, or around $253,000-to-$260,000 per hectare, a figure that is up on the prior year. The range is the combined revenue estimate resulting from 700 hectares of Gold3 licence, and 50 hectares of Gold3 Organic new development licence, both released under a closed tender bid mechanism. The validation process for all bids is still ongoing and all bidders will be notified of their outcome from May 1. [Full article available here](http://www.freshplaza.com/article/192961/Zespri-Group-Gold3-licensing-tender-to-generate-195-million-in-2018)

* 1. **Unlisted celebrates first $1 billion issue as Zespri resumes trading**

Zespri Group's shares rose to a record when they resumed trading, after being halted for the 2018 allocation of Gold3 kiwifruit licences. The kiwifruit exporter's market capitalisation was pushed to $1.1 billion, making it the first $1 billion company on the unlisted platform. Some 16,860 Zespri shares traded today, of which 2,440 changes hands at a record $8.35. The shares first traded at $1.75 after Zespri listed on the Unlisted Securities Exchange in February 2016. [Full article available here](http://www.freshplaza.com/article/193160/Unlisted-celebrates-first-1-billion-issue-as-Zespri-resumes-trading)

* 1. **Seeka purchase**

T&G Global Limited (T&G) has reached an agreement regarding the sale of its Kerikeri-based kiwifruit orchards, packhouse facilities and assets to Seeka Limited (Seeka). The agreement, valued at approximately $40 million will see Seeka purchase T&G’s post-harvest facilities in Kerikeri for the packing and storing of avocados, kiwifruit and citrus. Additionally, T&G has agreed to sell all its Zespri shares to Seeka, valued at approximately $2 million.

 The completion date for the post-harvest sale is expected to be 30 April 2018 and 30 June 2018 for the orchard sale. Seeka will then rename T&G’s Kerikeri facilities and operating business entities ‘Seeka Kerikeri’.  All staff from T&G’s post-harvest and kiwifruit orchard business areas will be retained by Seeka. [Full article available here](http://www.freshplaza.com/article/193228/Seeka-buys-T-and-G-Global-Northland-kiwi-operations)

**Biosecurity**

* 1. **Tougher South Australia import restrictions**

South Australia has strengthened its import requirements, following the discovery of fruit fly larvae in four consignments of Queensland mangoes sent to South Australia during the summer harvest. This of course threatened its fruit fly-free status. The reforms include a ban on fruit that has been heat-treated as well as stronger conditions for the use of a fumigation chemical treatment. Biosecurity Queensland has revealed the consignment of infested mangoes treated by methyl-bromide had not originally been destined for South Australia, but Victoria. [Full article available here](http://www.freshplaza.com/article/193155/Tougher-South-Australia-import-restrictions)

* 1. **Tasmania lifts ban on fruit from Melbourne fumigation facility**

Tasmania's Biosecurity Department has lifted a ban on fruit and vegetable imports from a Melbourne plant that was linked to a fruit fly outbreak. The ban on fresh produce imports from the Melbourne fumigation facility -linked to a fruit fly outbreak- was implemented earlier this year. [Full article available here](http://www.freshplaza.com/article/193102/Tasmania-lifts-ban-on-fruit-from-Melbourne-fumigation-facility)



1. **International news**

**Regulatory**

* 1. **European Commission to ban unfair trade practices in food supply chain**

The European Commission proposes to ban the more damaging unfair trading practices in the food supply chain to ensure fairer treat­ment for small and medium sized food and farming businesses. In addition, the proposal includes effective enforcement provisions: sanctions can be imposed by national authorities where infringements are established.  
  
The unfair trading practices to be banned are late payments for perishable food products, last minute order cancellations, unilateral or retroactive changes to contracts and forcing the supplier to pay for wasted products. Other practices will only be permitted if subject to a clear and unambiguous upfront agreement between the parties: a buyer returning unsold food products to a supplier; a buyer charging a supplier payment to secure or maintain a supply agreement on food products; a supplier paying for the promotion or the marketing of food products sold by the buyer.  
  
The Commission's proposal requires Member States to designate a public authority in charge of enforcing the new rules. The Commission's proposal will take the form of a European law (directive) and will now be submitted together with an impact assessment to the two co-legislators, the European Parliament and the Council, where Member States' governments are represented.

The next step is to turn to the issue of market transparency, [according to the Commission](http://europa.eu/rapid/press-release_MEMO-18-2703_en.htm). The Commission will continue to work on this topic and the first results of this work are expected in the second half of 2018. In parallel, the High Level Forum on the Better Functioning of the Food Supply Chain has a work strand dealing with this. [Full article available here](http://www.hortidaily.com/article/42522/European-Commission-to-ban-unfair-trade-practices-in-food-supply-chain)

This article is also covered in a Gain report which notes on April 12, 2018; the European Commission published a proposal for a Directive on unfair trading practices in the food supply chain. The proposal only concerns sales by small and medium sized enterprises (SMEs) to non-SMEs buyers. Non-EU businesses are included in the scope of this proposal.  Stakeholders can provide feedback on this...  
[EU proposes to regulate unfair practices in the food supply chain \_Brussels USEU\_EU-28\_4-13-2018](http://gain.fas.usda.gov/Recent%20GAIN%20Publications/EU%20proposes%20to%20regulate%20unfair%20practices%20in%20the%20food%20supply%20chain%20_Brussels%20USEU_EU-28_4-13-2018.pdf)

* 1. **Global body adopts new measures against spread of plant pests**

The International Plant Protection Convention (IPPC) is a 1951 multilateral treaty deposited with the Food and Agriculture Organization of the United Nations (FAO) that aims to secure coordinated, effective action to prevent and to control the introduction and spread of pests. This body, charged with keeping global trade in plants and plant products safe, has now adopted several new phytosanitary standards aimed at preventing destructive agricultural and environmental pests from jumping borders and spreading internationally.

New measures adopted this week by the IPPC's governing body, the Commission on Phytosanitary Measures (CPM), include:

* Standard on the use of various temperature treatments against agricultural pests. The standard aims at ensuring that such treatments are consistently and effectively used in different operational contexts.
* Revised standard for sanitation of wood packing materials. An existing standard, known as ISPM-15, was updated to include the use of sulphuryl fluoride — a gas insecticide — and new-generation heating technologies that employ microwave and radio frequency waves to generate pest-killing temperatures deep inside wood products.
* An expanded standard on the use of heat vapour to kill Oriental Fruit Flies. The control technique outlined under the new measure kills 99.98 percent of the bug's eggs and larvae when used correctly.

The IPPC Commission also approved revisions that streamline existing standards

* targeting fruit flies treatments
* Best-practice benchmarks for the operation of national pest surveillance programs.

It also endorsed new diagnostic protocols for sudden oak death, and approved new diagnostic protocol for tospoviruses, which affect 1,000 plant species and are causing devastating losses, especially to tomato, potato and squash and cucumber yields. [Full article available here](http://www.freshplaza.com/article/193148/Global-body-adopts-new-measures-against-spread-of-plant-pests)

**Business**

* 1. **Australian Seed Company making the most of restriction on imports**

The Australian breeding company Abundant Seeds sees an increase of sales both domestically and internationally. "Increasing Australian import restrictions mean that it is harder for varieties from overseas to enter Australia", Abundant Produce states in an operational update.   
  
Abundant Seeds works closely together with the University of Sydney's Plant Breeding Institute. The company is known not only for breeding hybrid greenhouse vegetables, but also for its production of skin care products based on natural vegetable extracts. Recently they announced further penetration of the Chinese market with their Abundant Natural Health products.

To meet Australian demand the company is targeting cucumber seed production (because of disease concerns with imported seed) and tomatoes seed bred to suit the Australian palate [Full article available here](http://www.hortidaily.com/article/42617/Its-harder-for-varieties-from-overseas-to-enter-Australian-market)

* 1. **Label manufacturer develops anti-counterfeit labels**

As food supplies are becoming increasingly globalized and complex, there is a perception that the amount of counterfeit food is increasing. There are different types of food fraud, but broadly it can be defined as intentional deception using food for economic gain. While food safety and quality systems concentrate on preventing contamination of produce, food fraud requires deeper insight in order to identify and stop. As a result, proponents have said that not only is it costing the global food trade upwards of US $30 to $40 billion every year, but also poses significant safety and health risks to the public.

Labelling is a communicator between producer and consumer. In an effort to prevent food fraud, Accum-Label, a manufacturer of labels and labelling equipment, said it has developed an anti-counterfeiting measure called 'Verify-it' that aims to prevent the copying and subsequent misuse of labels. The company said it is designed to complement their existing labelling system. Called 'Verify-it™', the label implements safety features similar to what is seen on banknotes.



Sleiman, President of Accum-Label, has noted that working with regulatory bodies is also vital to prevent the spread of any potential food fraud. "[Full article available here](http://www.freshplaza.com/article/193220/Label-manufacturer-develops-anti-counterfeit-labels)

* 1. **Singapore: Syngenta opens digital innovation lab**

Syngenta has opened in Singapore its first digital innovation lab in Southeast Asia which will create digital solutions for Asia's agricultural landscape. The lab adds to three other such facilities that Syngenta has worldwide - in the United States, United Kingdom and India - which aim to digitally transform agriculture through the development of technologies and solutions. [Read more at The Business Times (Andrea Soh)](http://www.businesstimes.com.sg/energy-commodities/syngenta-opens-digital-innovation-lab-in-singapore)[Full article available here](http://www.hortidaily.com/article/42666/Singapore-Syngenta-opens-digital-innovation-lab)

  **China**

* 1. **China: Apple import and export markets**

Recently India relaxed apple import regulations, which positively impacted Chinese apple exports. The new regulations in India however will only provide a limited release of the pressure on China's apple market. The new regulations will not reverse the downward trend on the Chinese apple market.

The Chinese State Council Customs Tariff Committee announced on April 2nd that the tariff for 128 US import product categories will be raised. The 2017 apple import included 29 thousand tons of US apples. The USA is China's largest apple import supplier. The Chinese high-end apple market is however diversified. Apple supplies from New Zealand and Chile can easily replace the restricted supply of US apples. Second, the import volume is small. The benefits of decreased imports cannot compete with the immense pressure on the fatigued domestic apple market. [Full article available here](http://www.freshplaza.com/article/192848/China-Apple-import-and-export-markets)

* 1. **Season's First New Zealand Kiwifruit Arrive in China**

The season's first shipment to China of New Zealand-grown Zespri kiwifruit arrived last week in Shanghai. The vessel was carrying 1,550 tons (more than 300,000 trays) of kiwifruit.

Zespri reported that it sold 430,000 tons or 123 million trays of New Zealand kiwifruit globally last year. It sold an additional 14 million trays of kiwifruit produced in in other parts of the world under the Zespri brand. This year's New Zealand crop is projected to be 70,000 tons higher than last year. Zespri is relying heavily on China, Japan and other Asian markets to continue to drive growth of its kiwifruit exports. [Full article available here](http://www.producereport.com/article/seasons-first-new-zealand-kiwifruit-arrive-china)

* 1. **"Zespri" imitation "Zeopri" confuses the market**

Xiamen Daily reported that market authorities recently investigated a trader who sold Zespri kiwi fruit in Zhongpu Wholesale Fruit Market. They investigated 120 boxes of kiwi fruit. The boxes did not carry Chinese registration trademarks. Also, they read "Zeopri" instead of "Zespri". The label also looked remarkably like the "rays of sunlight" label of Zespri. The actual kiwi fruit had Zespri labels on them, which further confused the consumer. Representatives of Zespri are visiting the market in Xiamen Huli District to investigate. [Full article available here](http://www.freshplaza.com/article/193175/China-Zespri-imitation-Zeopri-confuses-the-market)

* 1. **Yiguo’s Win-Chain to Boost the Fresh Food Industry with Big Data**

Yiguo was established in 2005, making it China's first fresh produce e-commerce platform. Over a decade, Yiguo transitioned from a simple e-commerce business to a vertically integrated commercial platform that remains committed to building a whole industry chain "expressway"—with the consumer market as the origin, the supply chain as the impetus, and cold chain logistics as the vehicle. Yiguo's vision is to build a collaborative platform and network that integrates the entire fresh food industry chain, utilizing business intelligence to drive the industry forward.

Subsequently, Win-Chain Supply Chain Management Co., Ltd. was introduced by Yiguo Group in 2016 as a global acquisition centre that covers all channels inside and outside of Alibaba's ecosystem. Moreover, Win-Chain is China's largest fresh food supply chain platform. Win-Chain's import fruit business unit will concentrate on integrating high-quality supply resources, penetrating major national and global fruit producing areas, searching for high-quality resources in fruit producing areas, and engaging Alibaba ecosystem's global resources. Accordingly, Win-Chain looks to establish far-reaching cooperation with willing and powerful suppliers.

In the wake of the new retail trend, Win-Chain is situated in an advantageous position.

The type of consumer experience afforded by the fresh food industry—along with the commercial behaviour of businesses—relies greatly on the guidance and support of big data. Win-Chain's advantages are that it reaches consumers through omnichannel retailing and consumption data - effectively linking the whole supply chain while simultaneously alleviating production and consumer pain points. Data generated by consumers will help guide and shape production, product quality, and package specialization. Furthermore, data will also be used to optimize both procurement and delivery. [Full article available here](http://www.producereport.com/article/yiguo%E2%80%99s-win-chain-boost-fresh-food-industry-big-data)

* 1. **China: Walmart unites suppliers in "Fresh Food Alliance"**

On April 16th, Walmart established the "Fresh Food Alliance” in China with seven other suppliers of fresh product. Walmart said that more suppliers will join the alliance in the future. Its main goal is the full synchronization of the Walmart Jingdong Home e-commerce platform and the work of the offline stores.

Walmart employees say that there are very few companies who can deliver fresh food across the country. The process is too demanding and it's difficult to keep the products cool during the transportation. Walmart's work with "Fresh Food Alliance" has just begun, but in future, the cooperation will include production, distribution and retail as well. The whole supply process will be possible using Walmart's existing fresh food distribution centers and their distribution, transportation and replenishment systems. This will allow Walmart to reach a full synchronization between online and offline stores.  [Full article available](http://www.freshplaza.com/article/193192/China-Walmart-unites-suppliers-in-Fresh-Food-Alliance)

 **Marketing**

* 1. **7Fresh: The supermarket of the future**

This article has a link to a video of the newest high-tech retail model that JD has introduced for 7Fresh supermarkets. The AI shopping cart follows your every step through the store, while avoiding obstacles and people. Customers can download the 7Fresh app, scan the QR-code, and link the cart to their phone. Customers just put on a bracelet and they are ready to shop!

The screens in the shop are extremely futuristic. They can display the product origin for fresh fruit and vegetables, as well as nutritional values and sugar content. At the check-out counter, facial recognition technology allows customers to simply scan their face to complete the transaction. The groceries are then delivered on an automated conveyor belt. [Full article available here](http://www.freshplaza.com/article/192067/7Fresh-The-supermarket-of-the-future)

 **Food safety**

* 1. **WHO claims Australia exported listeria-tainted rockmelons to nine countries**

Melons from Australia contaminated with the dangerous listeriosis bacteria were exported to at least nine countries, where an outbreak has killed seven people and caused one miscarriage, the World Health Organization said last Monday. The rockmelons, or cantaloupes, were sent to Hong Kong, Japan, Kuwait, Malaysia, Oman, Qatar, Singapore, the United Arab Emirates and Bahrain, and may also have gone to the Seychelles. [Full article available here](http://www.freshplaza.com/article/192538/WHO-claims-Australia-exported-listeria-tainted-rockmelons-to-nine-countries)

* 1. **Two Singapore patients infected by listeria bacteria**

Two people in Singapore were infected by a listeria bacteria strain similar to the one contracted by a patient in the deadly outbreak in Australia this year, said the Ministry of Health on Monday (April 16).

According to [straitstimes.com](http://www.straitstimes.com/singapore/health/2-singapore-patients-found-to-be-infected-by-listeria-bacteria-strain-similar-to), originally the listeriosis cases in Singapore did not show a link between them and the Australian outbreak. However, further laboratory investigations were conducted, and the Ministry found that among the five patients, two of them were infected by the listeria strain ST240, which had a similar gene sequence to the strain found in a patient in the Australian listeriosis outbreak. [Full article available here](http://www.freshplaza.com/article/192865/Two-Singapore-patients-infected-by-listeria-bacteria)

Demand for rockmelons has fallen sharply in Singapore due to a recent listeria infection outbreak in Australia. Some suppliers reporting a drop in sales of between 50 and 90 percent. [Full article available here](http://www.freshplaza.com/article/193057/Listeria-scare-Significant-drop-in-demand-for-rockmelons)

* 1. **US: Government narrows E. coli outbreak search**

According to a report from the U.S. Centers for Disease Control and Prevention, chopped romaine lettuce from the Yuma growing region is suspected in an E. coli outbreak that has hospitalized 22 people. To date, 35 cases have been reported in 11 states, the CDC said. No one has died. Three people have developed a type of kidney failure called hemolytic uremic syndrome, the CDC said in a statement.   
  
No grower, supplier, distributor or brand has been identified as the outbreak's source. The CDC is advising consumers anywhere in the United States to dispose of any store-bought chopped romaine lettuce at home, including salads and salad mixes containing chopped romaine lettuce that have been grown in Yuma. . The advisory also does not apply to romaine grown elsewhere, including California. [Full article available here](http://www.hortidaily.com/article/42586/US-Government-narrows-E.-coli-outbreak-search)



**Sustainability**

* 1. **An alternative to chemical control in open field carrot and cabbage production**

Many different insect species can cause serious damages to young transplants as well as serious leaf and root damages to older plants, often leading to reduced marketability and yielding. Pesticides use has always been an important tool in the production of carrots and cabbage. They control various diseases, insects and weeds that affect crop and cause severe economic losses in modern intense growing operations. Pesticides are utilized in seedling production, during planting, trough crop development and crop maturity to maximize yield, quality and respond to customers’ demands. However, the extensive use of chemical insecticides has resulted in many environmental problems, reduction of beneficial species and insect resistance.   
  
Different studies on using screens to replace pesticide use have been undertaken. By measuring the dimensions of carrot and cabbage insect pests it helped researchers to create BIOFIELD 80-insect screen with appropriate whole size to protect against most invasive species (listed in the full article): [Full article available here](http://www.freshplaza.com/article/193004/An-alternative-to-chemical-control-in-open-field-carrot-and-cabbage-production)

* 1. **Study shows reusable plastic containers emit 60% less CO2**

A new study, Carbon Footprint of Food Packaging, comparing the carbon footprints of reusable plastic containers (RPCs) and single-use cardboard boxes, has shown that RPCs emit 60 percent less CO2 when used for packaging, shipping and storing fresh produce. Published in February 2018, the study was conducted by Fraunhofer IBP for Stiftung Initiative Mehrweg (SIM), the Foundation for Reusable Systems, in accordance with ISO 14040/44 standards.

“This study adds to the growing body of evidence that shows RPCs outperform single use cardboard boxes when it comes to sustainability,” RPCs’ greenhouse gas emissions advantage over cardboard boxes began with the 6th use of an RPC and grew exponentially with each use thereafter. (Note: RPCs are used up to 120 times during their life-span, after which, they are recycled. Cardboard boxes are used one time, then sent to landfills or recycled.)[Full article available here](http://www.freshplaza.com/article/193030/Study-shows-reusable-plastic-containers-emit-60-procent-less-CO2)

  **Health**

* 1. **More fruit means fewer wrinkles**

A healthy dietary pattern, with plenty of fruit and vegetables, appears to help reduce wrinkles on women's faces. Male skin, on the other hand, appears not to be influenced by a healthy diet.

Alcohol appears to undo the effect of healthy food, regarding wrinkles.” [Full article available here](http://www.freshplaza.com/article/192457/More-fruit-means-fewer-wrinkles)

* 1. **Raw fruit and vegetables produce better mental health outcomes**

That is the simple message from University of Otago researchers who have discovered raw fruit and vegetables may be better for your mental health than cooked, canned and processed fruit and vegetables. The top 10 raw foods related to better mental health were: carrots, bananas, and apples, dark leafy greens such as spinach, grapefruit, lettuce, citrus fruits, fresh berries, cucumber, and kiwifruit. [Full article available here](http://www.freshplaza.com/article/192874/Raw-fruit-and-vegetables-produce-better-mental-health-outcomes)

 **Innovation**

* 1. **Farming drone imagery often inaccurate**

Researchers have warned farmers to be cautious of drone imagery being offered by rogue operators. A University of Queensland and University of New England collaborative study has shown that "off-the-shelf" drone imagery products, sold to growers for up to $4000 per farm in some cases, are unlikely to provide accurate information about the health of crops.  
  
"However, our research has shown that the high-tech, multi-spectral sensors used to collect images from the drone must be processed in a certain way to obtain correct information for horticultural farming applications." The biggest problems in the use of drones was related to inconsistencies in the way light is reflected off the surface of vegetation, depending on the height at which a drone is flown and its angle to the sun. Such inconsistencies could result in farmers being given the wrong information about their crops if the data isn't processed in the right way by experienced operators with remote sensing expertise.  
  
[Phys.org](https://phys.org/news/2018-04-farming-drone-imagery-inaccurate.html) reports how Tu has created an algorithm that corrects these variations in reflectance, ensuring the delivery of consistent data for farmers. He is now working to establish standardised protocols for the acquisition and processing of drone imagery for tree crops. Until then, he said farmers should undertake appropriate due diligence before spending substantial money on drone imagery for horticultural applications. [Full article available here](http://www.freshplaza.com/article/193005/Farming-drone-imagery-often-inaccurate)

* 1. **Researchers develop first gene drive targeting worldwide crop pest**

Biologists at the University of California San Diego have developed a method of manipulating the genes of an agricultural pest that has invaded much of the United States and caused millions of dollars in damage to high-value berry and other fruit crops. As reported April 17 in the Proceedings of the National Academy of Sciences, Buchman and her colleagues developed a gene drive system termed Medea (named after the mythological Greek enchantress who killed her offspring) in which a synthetic “toxin” and a corresponding “antidote” function to dramatically influence inheritance rates with nearly perfect efficiency.  
  
“We’ve designed a gene drive system that dramatically biases inheritance in these flies and can spread through their populations,” said Buchman. “It bypasses normal inheritance rules. It’s a new method for manipulating populations of these invasive pests. In contained cage experiments of spotted wing drosophila using the synthetic Medea system, the researchers reported up to 100 percent effective inheritance bias in populations descending 19 generations.

Applications for the new synthetic gene drive system could include spreading genetic elements that confer susceptibility to certain environmental factors, such as temperature. If a certain temperature is reached, for example, the genes within the modified spotted wing flies would trigger its death. Other species of fruit flies would not be impacted by this system.  
  
“Another possibility for the new gene drive system would be to enhance susceptibility to environmentally friendly insecticides already used in the agricultural industry. [Full article available here](http://www.freshplaza.com/article/193059/Researchers-develop-first-gene-drive-targeting-worldwide-crop-pest)

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