

**PMAC weekly update 12th to 19th February**

1. **Government agencies**: WTO Notifications; Goods Affected by Brown Marmorated Stink Bugs
2. **New Zealand News:**  New Zealand needs more water storage in a changing climate; Prime Minister’s Science Prize for Plant & Food Research; Cap on seasonal employees lifted; Bay of Plenty business fined $12,000 for employment breaches ; Cyclone Gita delays arrival of Tongan fruit-pickers in New Zealand; Interview with Zespri’s new CEO; T&G Global appoints Asia GM; Gisborne region, New Zealand: growers remain optimistic; New Zealand: Spraying copper is key to quality avocados; Horticulture NZ backs Biosecurity Minister’s stance on stink bugs
3. **International news:** GAIN reports; "Bayer to sell vegetable seeds business"; US Grower takes a page out of Toyota's book; Zero Pesticide Residue label in France; AU: Farming's peak body leads new Horticulture Council; Food Retailing In India – The Way Forward; Fruit fly larvae brings zone expansion; Feeding the world with a bionic leaf; Pulsed electric field to better process fruit and veg

***Editors comments***

This week there is quite a diverse range of information presented with perhaps the most interesting article from my perspective being the interview with Zespri’s new CEO Dan Mathieson.

Biosecurity articles are however are the ones which could have the most potential impact. First the report that 4 ships containing high numbers of brown marmorated stink bug (MBSB) have been turned away from New Zealand in the last few weeks and an article from Hort NZ identifying that MBSB is New Zealand Horticulture greatest biosecurity threat is concerning.

Meanwhile in Australia Queensland fruit fly is causing problems in Tasmania (where more flies have been found within the incursions area) and in Western Australia. Incursion responses are underway in both states. Victoria also has an incursion response for Mediterranean fruit fly. Previously Mediterranean fruit fly has been restricted to Western Australia and Queensland fruit fly has not been found in that state. With the spread of these flies to larger parts of Australia the pressure on the New Zealand border can only increase.

1. **Agency news**



* 1. **WTO Notifications**

Please find attached the most recent WTO notifications from countries that are considering changes to their plant import requirements for specific products. If you have any concerns about the notifications being presented please contact [Plant.exports@mpi.govt.nz](mailto:Plant.exports@mpi.govt.nz) so that they can potentially make a submission to the notifying country. Changes notified over the last week includes:

* Brazil and the USA MRL’s
* UAE regulation of the import of hosts of fall army worm
* Taiwan Regulations for the inspection of imported foods and related products

The embedded files for the last weeks(which has links through to the original notifications)is available here 

****

* 1. **Goods Affected by Brown Marmorated Stink Bugs**

Customs released the following statement of Friday afternoon. Over recent days four ships have been affected by infestations of Brown Marmorated Stink Bugs.  Three have been ordered to leave by MPI and one has voluntarily changed its route to New Zealand.

Some of these ships have been deemed to have ‘arrived’ in New Zealand and import declarations have been entered and passed with either Deferred Accounts or Cash Accounts being debited or raised. The article provides details on how the should be dealt with

The affected ships to date include; Tokyo Car voyage 1802, Courageous Ace voyage 121A, Sepang Express voyage 44 and Glovis Caravel. [Full article available here](https://www.mpi.govt.nz/protection-and-response/responding/alerts/brown-marmorated-stink-bug/)



1. **New Zealand News**

**General**

* 1. **New Zealand needs more water storage in a changing climate**

January 2018 was the hottest month ever recorded in New Zealand and 2017 was

a year where shortages and surpluses of water created major problems; severe flooding occurred in a number of areas over the autumn and winter, followed by droughts in the spring and summer.  
  
“Many areas went for several weeks with minimal rainfall this summer. Where water storage was available, it played an important role in ensuring locally grown produce was still available in supermarkets. But there’s still a lot of work to be undertaken to improve the resilience of our communities by improving our water storage,” says IrrigationNZ Chief Executive Andrew Curtis.

A new government report, [Adapting to Climate Change in New Zealand](http://www.mfe.govt.nz/sites/default/files/media/adapting-to-climate-change-stocktake-tag-report-final.pdf), highlights the concern that droughts are expected to occur more frequently and to be more severe, along with more intense rainfall and flood events. Water storage is likely to become more important over time. [Full article available here](http://www.freshplaza.com/article/189254/New-Zealand-needs-more-water-storage-in-a-changing-climate)

* 1. **Prime Minister’s Science Prize for Plant & Food Research**

Plant & Food Research is proud to be the recipient of this year’s Prime Minister’s Science Prize for its rapid response to the vine-killing kiwifruit disease PSA. Initially, the Plant & Food Research team worked with the industry to contain the spread of the disease by developing new orchard management techniques. The science team also developed diagnostic tests to inform growers’ management decisions and identified agrichemicals that could protect against the disease. Longer term, a new cultivar was released to support ongoing growth of the industry.

The Prime Minister’s Science Prize includes a $400,000 prize fund to be used to support the team’s work. This prize money will be used to establish New Zealand as a hub for bio-protection technologies and further the development of new science technologies to protect plants against biosecurity threats. [Full article available here](http://www.freshplaza.com/article/189437/New-Zealand-Prime-Ministers-Science-Prize-for-Plant-and-Food-Research)

* 1. **Cap on seasonal employees lifted**

Six hundred more immigrant workers will be permitted to enter New Zealand annually under

the Recognised Seasonal Employer scheme. The cap had increased to 10,500 last year, and the government decided recently it will increase to 11,100 people this year. Workplace Relations and Immigration

Minister, Iain Lees-Galloway, said the changes allowed the sector to meet the pressures of a predicted early and prosperous harvest. Mr Lees-Galloway introduced the Employment Relations Amendment Bill to Parliament last week to improve employment practices amongst employers and contractors. [Full article available here](https://www.radionz.co.nz/news/national/349980/cap-on-seasonal-employees-lifted)

* 1. **Bay of Plenty business fined $12,000 for employment breaches**

A kiwifruit business in the Bay of Plenty has been fined $12,000 for breaching a number of employment law minimum standards. A Labour Inspectorate investigation found that Ahead, a kiwifruit orchard labour hire business, failed to provide staff with individual employment agreements, pay holiday entitlements and to keep full and accurate time, wage and leave records. [Full article available here](https://www.stuff.co.nz/business/101253948/bay-of-plenty-business-fined-12000-failing-to-meet-minimum-employment-law-standards)

* 1. **Cyclone Gita delays arrival of Tongan fruit-pickers in New Zealand**

Many Tongans have held up by Cyclone Gita and the NZ apple industry is concerned worker shortages are being exacerbated just as fruit is ripe for the picking. Every year some 1500 people - more than 1 percent of Tonga's population - come to New Zealand under the Recognised Seasonal Employer scheme to help with the harvest.  
  
Pipfruit New Zealand Business Development Manager Gary Jones said The biggest worry now was bringing the Tongans over. Jones said flights were going, but difficulties getting to the airport and to access visas and passports meant they were being pushed back. [Full article available here](http://www.freshplaza.com/article/189651/Cyclone-Gita-delays-arrival-of-Tongan-fruit-pickers-in-New-Zealand)

**Industry news**

* 1. **Interview with Zespri’s new CEO**

Freshplaza interviewed Zespri’s new CEO, Dan Mathieson, at Fruit Logistica in Berlin last week. Dan said "There will be a few changes in the structure of the company, and basically the strategy will remain the same, it is more about fine tuning than making huge changes."  
  
Dan will split his time between the Singapore office and the headquarters in New Zealand. He will spend around ten days a month in Singapore and the rest of the time in New Zealand and Zespri’s international markets. "We have around 30 people in our hub in Singapore, and we want to ensure we have a good balance between the supply side and the demand side of the business. It is important that our organisation continues to go down the path of being demand led, really understanding our consumers and building relationships with our customers. " Zespri export to over 50 countries and have 21 offices and 600 people around the world.   
  
***New kiwifruit season*** The New Zealand kiwi season will start in mid-March and according to Dan is looking good, "SunGold should be up 8-10 million trays on last year, a lot of this is from plantings coming into commercial volumes, the green will also see quite a bit of an increase on last year." Zespri's goal of increasing gold volumes to equal and then surpass the greens to meet consumer demand is getting closer, last year there were 65 million trays of green, and 52 million of gold. "In 2020 we expect to have more gold than green kiwifruit grown in New Zealand. There has been very strong consumer demand for the SunGold variety,   
 ***Overseas production*** Outside New Zealand the biggest production is in Italy, then in France and there are some smaller trials happening in Spain, Portugal and Greece. In Asia there are established orchards in Japan and Korea. We also have started trials in North America and in China.

The trials in China have been running for a while now and like many other products in China when you have a popular brand it tends to get copied, this has also been the case for Zespri. "We are seeing significant copying of the Zespri brand in China and we continue to take action with the authorities to minimise this. This also counts for the trials we are doing, where there is also a danger that the plant material can be stolen and copied, but we deal with this in the same way, by informing the authorities locally and in New Zealand and we are investing more resources in this area and having some success."  
  
***Do the Chinese want domestically grown fruit?*** "We want to hear back from our consumers on that one, they certainly enjoy imported fruit but also enjoy well grown domestic fruit as well. We just have to make sure that we can get the quality to meet the needs of those consumers. These days a lot of good Chinese kiwifruit brands on the markets, but Dan said that is good for the kiwifruit category. "We also want to grow the kiwifruit category, at the moment it is a relativity small part of the fruit basket, so we see a lot of room for growth. If we can have more good quality kiwifruit brands on the market that will only help to raise awareness of kiwifruit."   
  
One of the challenges which the kiwifruit industry faces is the huge difference in quality of kiwifruit which reaches the markets, some are picked immature and when the consumer gets a bad experience it can takes weeks or even longer for them to come back and try one again.    
  
There are a lot of red kiwifruit varieties out there and Zespri are looking at a few possible red varieties. "We have some red varieties starting to come out of the pipeline but there hasn't yet been a variety that we have felt confident enough about to commercialise. We do see a good response to the red kiwifruits, for the sweetness and for the colours."  
  
Zespri is also looking at new varieties with edible skins as well a machine to peel and cut kiwifruit which will be placed in the supermarkets, juice bars and possibly even fast food shops.

***The next five years*** "We want to become one of the most popular brands in the health food space, we will have a different weighting in the portfolios with gold and green, there will be more gold than green and we will have a much clearer understanding of what the consumer wants from a kiwifruit, from taste through to the convenience of eating it. "Better relationships with our distributors and our retailers and better integration with these partners and our marketplace so we can offer better kiwifruit for longer and move towards our goal of 12 month supply." [Full article available here](http://www.freshplaza.com/article/189454/A-clearer-understanding-of-what-the-consumer-wants-from-a-kiwifruit,-from-taste-to-convenience)

* 1. **T&G Global appoints Asia GM**

T&G Global has appointed James Gordon to the newly created role of general manager, Asia.

Based in Bangkok, Gordon will oversee T&G’s growing operations in the Far East, which currently includes offices and staff based in Singapore, Vietnam, Japan, China and Thailand.

Gordon has more than 20 years of experience in the dairy sector, having filled a range of roles from sales and marketing, to senior commercial and leadership, primarily in Asian markets.  [Full article available here](http://www.fruitnet.com/asiafruit/article/174698/tg-global-appoints-asia-gm)

**Crop news**

* 1. **Gisborne region, New Zealand: growers remain optimistic**

Over the last week there has been some concern about the high daytime temperatures and moist, humid air. [The Gisborne Herald](http://gisborneherald.co.nz/focusontheland/3229099-135/rain-humidity-a-blessing-and-a" \t "_blank) quoted Cedenco Foods managing director Tim Chrisp as saying his company had just entered the peak period of its sweetcorn, tomato and squash harvests. “The factory and team are at full capacity and we hope there are no serious disruptions weather-wise.” Chrisp said their tomato harvest was disrupted a bit at the weekend because of the rain. “We are currently waiting for some paddocks to drain properly so we can recommence the tomato harvest. We are watching the weather like everyone else, hoping for a strong season.” [Full article available here](http://www.freshplaza.com/article/189521/Gisborne-region,-New-Zealand-growers-remain-optimistic)

* 1. **New Zealand: Spraying copper is key to quality avocados**

After visiting large orchards in Australia where copper applications are a key feature of fruit quality control, Far North avocado grower Ross Mutton is convinced the spray helps ensure avocados get in top condition. Copper spraying and the removal of dead wood and plant material from around trees are essential procedures in avocado orchards.  
  
Copper spraying is considered the most effective way to prevent fungal rot, which starts in the orchard through infection of fruit, but usually doesn't emerge until post-harvest. New Zealand's wet climate and the distance the fruit travels to market means Kiwi avocado growers must spray to preserve fruit quality. Mr Mutton said they can't afford to be complacent or avoid spraying because of the financial costs, which are around $800 a canopy hectare.  
  
" According to [nzherald.co](http://www.nzherald.co.nz/the-country/news/article.cfm?c_id=16&objectid=11995004), Avoco -New Zealand's largest avocado export supply group- advises growers to get rid of dead wood and mummified fruit through mulching and pruning to let light in. This, together with wind protection, trying to increase fruit calcium levels and soft fruit handling are collectively as important as copper sprays. Avoco is expected to export about 1.3 million trays of avocados this season. [Full article available here](http://www.freshplaza.com/article/189652/New-Zealand-Spraying-copper-is-key-to-quality-avocados)

* 1. **Horticulture NZ backs Biosecurity Minister’s stance on stink bugs**

Biosecurity Minister Damien O’Connor’s recent statement that he won’t let the brown marmorated stink bug anywhere near New Zealand encouraged the industry no end, claimed Horticulture New Zealand President Julian Raine. Not only will these bugs invade your homes and cars, they will have a devastating effect on New Zealand’s food supply for years to come and have the potential to wipe out most of a crop in bad years. This bug is horticulture’s number one concern.

As horticulture is the fourth largest primary industries exporter, so the effect is far reaching for all New Zealanders.” [Full article available here](http://www.freshplaza.com/article/189677/Horticulture-NZ-backs-Biosecurity-Ministers-stance-on-stink-bugs)



1. **International news**

**Comment**

* 1. **GAIN reports**

Gain reports are from the “Global Agricultural Information Network” and are produced by the USDA. They are designed to provide timely information on the economy, products and issues in foreign countries that are likely to have an impact on United States agricultural production and trade. The information in them is written for USA exporters but the majority is equally relevant to New Zealand. With regard to import regulations for a particular market New Zealand exporters should first check the countries ICPR on MPI’s web site. These are collated specifically for New Zealand product. However the Gain reports often provide additional information that is useful e.g. on grading and labelling, economic profiles. This week see:

1. **Canada Food and Agricultural Import Regulations and Standards – Narrative** The Canadian Food Inspection Agency is expected to publish the final version of the Safe Food for Canadians Regulations in the Canada Gazette in early 2018.  In 2017, Health Canada continued to advance its Healthy Eating Strategy, including initiatives on front-of-package labeling, [Food and Agricultural Import Regulations and Standards - Narrative\_Ottawa\_Canada\_2-5-2018](http://gain.fas.usda.gov/Recent%20GAIN%20Publications/Food%20and%20Agricultural%20Import%20Regulations%20and%20Standards%20-%20Narrative_Ottawa_Canada_2-5-2018.pdf)
2. **Egypt Food and Agricultural Import Regulations and Standards – Certification** The report lists and describes certificates that should accompany food and agricultural products to Egypt. It also includes the purpose of each certificate and the governmental agency responsible. [Food and Agricultural Import Regulations and Standards - Certification\_Cairo\_Egypt\_11-19-2017](http://gain.fas.usda.gov/Recent%20GAIN%20Publications/Food%20and%20Agricultural%20Import%20Regulations%20and%20Standards%20-%20Certification_Cairo_Egypt_11-19-2017.pdf)
3. **Netherlands FAIRS Annual Country Report** This report is an addendum to the EU FAIRS report – E17080.  It lists the Dutch import regulations and standards that are not harmonized within the EU or [Food and Agricultural Import Regulations and Standards Report\_The Hague\_Netherlands\_1-31-2018](http://gain.fas.usda.gov/Recent%20GAIN%20Publications/Food%20and%20Agricultural%20Import%20Regulations%20and%20Standards%20Report_The%20Hague_Netherlands_1-31-2018.pdf)
4. **Panama 2017 Exporter Guide** This report provides information to U.S. exporters of agricultural and related products on how to do business in Panama. Panama is one of the top markets for consumer-oriented products in Central America.  [Exporter Guide\_Panama City\_Panama\_1-31-2018](http://gain.fas.usda.gov/Recent%20GAIN%20Publications/Exporter%20Guide_Panama%20City_Panama_1-31-2018.pdf)
5. **Singapore Food and Agricultural Import Regulations and Standards - Certification** This report discusses export certificates that the Singapore Government requires.  [Food and Agricultural Import Regulations and Standards - Certification\_Singapore\_Singapore\_11-16-2017](http://gain.fas.usda.gov/Recent%20GAIN%20Publications/Food%20and%20Agricultural%20Import%20Regulations%20and%20Standards%20-%20Certification_Singapore_Singapore_11-16-2017.pdf)
6. **Singapore |Food and Agricultural Import Regulations and Standards - Narrative**This report presents regulations and procedures for the importation of food and agricultural products to Singapore.  [Food and Agricultural Import Regulations and Standards - Narrative\_Singapore\_Singapore\_11-16-2017](http://gain.fas.usda.gov/Recent%20GAIN%20Publications/Food%20and%20Agricultural%20Import%20Regulations%20and%20Standards%20-%20Narrative_Singapore_Singapore_11-16-2017.pdf)

**Business**

* 1. **"Bayer to sell vegetable seeds business"**

Bayer plans to sell its global vegetable seeds business and allow BASF exclusive access to its digital farming data in an effort to address EU antitrust concerns over its $63.5 billion purchase of Monsanto, [Reuters reports](http://www.reuters.com/article/us-monsanto-m-a-bayer-eu/bayer-offers-vegetable-seeds-disposal-to-clinch-monsanto-deal-sources-idUSKBN1FS2GK).  
  
Bayer’s vegetable seeds business, which operates under the brand Nunhems, has more than 1,200 seed varieties in 25 vegetables crops. The company has offered to divest the vegetable seeds business as a unit including its intellectual property rights, locations and production sites to a new entrant in a move that rules out bids from private equity firms, sources said.  
  
To assuage regulatory concerns about its collection of data and information about farms known as digital agriculture, Bayer will also give BASF an exclusive license to its digital farming platform, the sources said. Another source said that rival agribusiness Syngenta is very interested in the vegetable seeds operation but that there are also other interested parties. [Full article available here](http://www.hortidaily.com/article/41061/Bayer-to-sell-vegetable-seeds-business)

And [Full article available here](http://www.hortidaily.com/article/41076/Bayer-Monsanto-must-not-hurt-competition-in-digital-farming)

* 1. **US Grower takes a page out of Toyota's book**

Over the last nine years, Ben Hartman’s farm in northern Indiana has become more efficient and profitable following the techniques developed by an unlikely source: Toyota. By adapting the production techniques developed by the car manufacturer—commonly referred to as “lean manufacturing“—Hartman has revolutionized his methods, cut down his work hours dramatically, and shrunk the size of his farm, all while making a better income.  
  
This article talks about about setting up his new farm, how his latest book came about, and how Hartman doesn’t feel like he’s adapting lean thinking to agriculture at all, but simply going back to its source. [Full article available here](http://www.hortidaily.com/article/41112/US-(IN)-Grower-takes-a-page-out-of-Toyotas-book)

* 1. **Zero Pesticide Residue label in France**

Fruit and vegetable producers across France have announced a new label guaranteeing fruit and vegetables with "zero pesticide residues". The logo will be stuck on all fruit and vegetables that contain no more than 0.01mg pesticide/kilo. [Full article available here](http://www.freshplaza.com/article/189505/Zero-Pesticide-Residue-label-in-France)

* 1. **AU: Farming's peak body leads new Horticulture Council**

The interests of Australia’s growing and diverse horticulture sector will now be directly represented through the National Farmers’ Federation (NFF) with the peak body launching a new ‘Horticulture Council’. Commodity groups to form part of the Council include the Australian Blueberry Growers' Association, AUSVEG, Apple and Pear Australia Ltd, Dried Fruits Australia, Voice of Horticulture (representing their 21 members) and Summerfruits Australia Limited.

“This dedicated, united and tailored body representing the best interests of Australia’s $11billion production and ornamental horticulture sectors, is essential if we are to continue to grow Australia’s horticulture industries into the future,” . “In 2015, vegetables were Australia’s sixth biggest agricultural export by value followed by fruit and nuts at number eight.”

However, Mr Mahar says with growth came additional policy considerations and industry challenges and that many of the policy issues impacting horticulture were the same as those in other agricultural industries such as trade and market access, biosecurity, infrastructure, workplace relations and digital technology adoption.

“The NFF remains firmly of the view that there is real power in a unified approach," he said. "Being able to join together to advocate as a united front will deliver real gains for the sector and for agriculture in general. "To form the Council, organisations signed an official Memorandum of Understating agreeing that the forum was established to 'strive for more efficient, effective, cohesive horticulture policy and advocacy that affects all Agriculture at the national level."[Full article available here](http://www.freshplaza.com/article/189361/AU-Farmings-peak-body-leads-new-Horticulture-Council)

* 1. **Food Retailing In India – The Way Forward**

The total market size of Indian retail sector was estimated to be around US $641 billion in 2016, thereby registering a compound annual growth rate (CAGR) of around 7.5 percent since 2000. Of the overall retail industry, food and grocery accounts for the largest share in revenue in India. India is the world’s second-largest producer of food. Food and grocery retail in India exceed US $294 billion representing 16 percent of India’s GDP. By 2020, food and grocery segment is estimated to constitute 66 percent of the total revenue in the Indian retail sector, followed by the apparel segment.

Imported food constitutes about 15-20 percent of the total organized retail space. Vegetables, fruits, and nuts are the major imported categories contributing 80 percent of the total food imports in India. The imported food market in India has been growing at a rate of about 30-40 percent per annum from the last 4-5 years.

Rising urbanization, changing lifestyles, increased foreign travel, increasing health awareness and the boom in organized retailing have resulted in increasing the demand for imported food products. Relaxed import regulations and reduced import duties have further increased the demand for imported food products. The categories showing growth in the imported food segment are dairy items such as cheese, creams, chocolates and dips followed by wine and packaged food

As previously highlighted, Food & Beverage (F&B) accounts for over 60 percent of customer spend and is growing at the rate of about 30 percent per annum. In F&B, penetration of organized retail is only 3 percent of the total market. Indian customers visit both traditional (kirana) stores and modern stores in the ratio of 5:1 times per week. The number of modern retail stores has grown more than four times since 2006 and is currently estimated to be around 50,000 in the country and expected to reach 100,000 by 2020.

Online retail (E-tail) in India has grown immensely in the last five years. Mumbai tops the chart in online shopping followed by Delhi and Kolkata. Many venture capitalists are financing the e-grocers, which is a good sign for growth. . [Full article available here](Food%20Retailing%20In%20India%20–%20The%20Way%20Forward%20-%20Indiaretailing.com)

* 1. **Fruit fly larvae brings zone expansion**

The recent detection of suspected fruit fly larvae near the eastern boundary of the Greater Devonport Control Area has seen Biosecurity Tasmania expand the overall control area. The larvae was found in fruit on trees in the backyard of a house near a large commercial orchard in the State's north-west.

However, it is not just the island state of Tasmania working to manage this pest.

Recently Victoria's Yarra Valley lost its Pest Free Place of Production following the detection of Queensland fruit fly. Also this month Western Australian biosecurity authorities banned the movement of host produce in Perth's south following the detection of a female Queensland fruit fly in a suburban trap.. [Full article available here](http://www.freshplaza.com/article/189627/Fruit-fly-larvae-brings-zone-expansion)

 **Innovation**

# "

* 1. **Feeding the world with a bionic leaf**

Postdoctoral fellow Kelsey Sakimoto of the Harvard University is fine tuning a “bionic leaf” to help forge a new era of distributed agriculture, beneficial even to subsistence farmers far from industrial agriculture’s distribution networks and chemical fertilizer supplies.  
  
The bionic leaf is an outgrowth of Nocera’s artificial leaf, which efficiently splits water into hydrogen and oxygen gas by pairing silicon — the material that makes up solar panels — with catalyst coatings. The hydrogen gas can be stored on site and used to drive fuel cells, providing a way to store and use power that originates from the sun.

The artificial leaf has been paired with genetically engineered bacteria that eats hydrogen gas, the pair produced the “bionic leaf,” which creates liquid fuels such as isobutanol.  
  
Sakimoto, said the project is scaling also up to provide fertilizer for small farms and remote rural communities without the need for a large, centralized infrastructure.[Read more at the Harvard Gazette (Rose Lincoln](http://news.harvard.edu/gazette/story/2018/01/harvards-bionic-leaf-could-help-feed-the-world/) [Full article available here](http://www.hortidaily.com/article/41106/Feeding-the-world-with-a-bionic-leaf)

* 1. **Pulsed electric field to better process fruit and veg**

European researchers have been giving fruit and vegetables electric pulses to improve their condition for processing and maintain nutritional value. In Cahir, South West Ireland, Cornelius Traas' family-run farm produces 600 tons of potatoes annually which are processed into juice, cider and vinegar. They are testing treating the fruit with a pulsed electric field as part of the European research project, FieldFood. The electric pulses perforate the fruit cells and simplify extraction, it could also kill microbes, prolonging fresh juice conservation.

The total energy needs are very low, "treating one kilo of tomatoes requires less energy than when heating a litre of water for it's temperature to increase by one degree".

Treated tomatoes are easier to peel and no longer need to be plunged in boiling water, saving energy. The technique also preserves fruit and vegetable nutritional values. Scientists believe that this method is particularly well suited to small and medium companies specialised in food processing.

[Full article available here](http://www.freshplaza.com/article/189507/Pulsed-electric-field-to-better-process-fruit-and-veg)

**Subscribe/ Unsubscribe** If you no longer wish to receive this email please send a note to [info@pmac.co.nz](mailto:info@pmac.co.nz) asking to be added/ removed and providing the nominated email address

**Disclaimer** Please note this information has been accessed from emails that have been forwarded to info@PMAC.co.nz and are distributed as a weekly update. If you intend using this information please sight the original document to ensure you are aware of the context within which any changes have been made and to guard against any transcription changes