

**PMAC weekly update 26th November to 3rd December**

1. **Government agencies**: Cargo ship ordered to leave New Zealand; EPA paraquat reassessment
2. **New Zealand News:**  Awards for best primary sector employers; Consumers to know country of origin for food; Horticulture congratulates New Zealand Government on CoOL law; Onion biosecurity plan; Torrential rain damages Teviot Valley fruit; Soaring international demand leads to strong investment in New Zealand orchards; Plastic bags to be phased out by the middle of 2019; Strawberry saga continues; New Zealand is unprepared for more frequent droughts; New biological control for kiwifruit disease; Border security authorities praised for keeping stink bug out of New Zealand and Australia
3. **International news:** GAIN reports; EU trademarks & IP rights will still apply in UK under Brexit Deal; OECD: “Trade tariffs and higher interest rates are slowing global economic growth”; European biocontrol industry proposes new EU regulatory framework; Bayer opens up glyphosate research; Bayer to cut 12,000 jobs; Romaine lettuce E. coli outbreak narrowed down to California; WMO Update: 75-80% chance of El Niño within next 3 months; Green and edible cling film; Blockchain will change the floral industry

***Editor’s comments***

*A diverse range of article this week. In the New Zealand section it’s good to see that Country of origin labelling will become a reality in New Zealand shops . Then in another positive article it’s a real credit to Plant and Food Research that they have identified a biocontrol that can be used to help prevent Psa on kiwifruit ( even in an organic crop). A very good example of how our world class science actively supports horticultural exports to give our growers and exporters the edge.*

*Again another credit to MPI for turning away a boat with BMSB and at the same time concerning that Australia also turned a boat away in the same week. The BMSM pressure present in countries we import from is obviously increasing – and this is only the start of the high risk season. It will need all of MPI’s best efforts to keep us free of BMSB for another year.*

*In the International section there is a good article on blockchain. This article identifies the potential spill over benefits that consumers and producers may be able to reap from a blockchain system. It’s the first article I’ve seen than has articulated the advantages in such everyday terms.*

*And last but not least a Gain report that outlines the German strategy for running down the use of glyphosate. Note the German coalition government agreed earlier this year that “The use of glyphosate containing plant protection products will be terminated as soon as possible” This report outlines how the reduction could take place. I also have to ask how long EU consumers will countenance the use of glyphosate on their imported produce.*

1. **Agency news**



* 1. **Cargo ship ordered to leave New Zealand**

Biosecurity New Zealand has directed a vehicle carrier to leave New Zealand waters following the discovery of stink bugs and other regulated pests. Biosecurity officers intercepted 3 live and 39 dead brown marmorated stink bugs and 69 other dead regulated stink bugs after the Carmen arrived in Auckland from Europe last Wednesday morning. The vessel was carrying a range of vehicles from Europe and the United States. The vessel will now have to be treated offshore before it can return.

If permitted to come back, the vessel should also expect intensive inspection before we allow any cargo to be discharged. The Carmen is the first cargo ship to be ordered to leave New Zealand since the beginning of the 2018/19 stink bug season in September. [Full article available here](https://www.mpi.govt.nz/news-and-resources/media-releases/cargo-ship-ordered-to-leave-new-zealand/)



* 1. **EPA paraquat reassessment**

EPA work continues on developing an approach to reassess the herbicide paraquat. This builds on a previous assessment of paraquat, which helped highlight the key issues and effects from the use of the products. A 30-working day submission phase is anticipated to open in early February 2019, which would close around mid-March. During the submission period, submitters have an opportunity to review the EPA assessment and respond to what is presented, and indicate if they would like to be heard at a hearing.  At this stage the EPA is working towards a tentative date of May 2019 for decision making consideration. If you have any questions, please do not hesitate to contact reassessments@epa.govt.nz



1. **New Zealand News**



* 1. **Awards for best primary sector employers**

Minister of Agriculture Damien O’Connor has congratulated the best primary sector employers at an awards evening at Parliament last week. The following awards were presented:

* Innovative Employment Practices Award: Winner: Ben and Nicky Allomes, Hopelands Dairies Ltd. (Dairy)
* Employee Development Award: Winner: Kevin and Kylie Ihaka, Forest Protection Services. (Forestry)
	+ Highly Commended: Patrick Malley, Onyx Capital Limited. (Horticulture)
* Safe and Healthy Work Environment Award: Winner: Michelle Cherrington, Moana. (Seafood)
* Māori Agribusiness Award: Winner: Miraka. (Dairy)
* Minister’s Award: Winner: Ben and Nicky Allomes, Hopelands Dairies Ltd. (Dairy)
	+ Highly Commended: Bruce Beaton, Kristen Nash and Maurice Windle, T&G Global, Pipfruit. (Horticulture[) For the full article see here](https://www.beehive.govt.nz/release/awards-best-primary-sector-employers)
	1. **Consumers to know country of origin for food**

A Bill that allows consumers to know where food products come from passed in Parliament last week, Commerce and Consumer Affairs Minister Kris Faafoi says. The Consumers’ Right to Know (Country of Origin of Food) Bill introduces mandatory labelling to provide information about the country of origin of foods.

Foods covered under the Bill include fresh or frozen fruit, vegetables, fish, seafood and meat including cured pork products such as ham and bacon. Food Safety Minister Damien O’Connor says the scheme has been designed to be easy and cheap to set up and run. “That’s why the requirements apply only to foods with one ingredient and t is fresh, frozen, unprocessed or minimally processed

Mr Faafoi says he will be consulting further on how to implement the new requirements and whether any foods need to be added or excluded. The Bill requires the Minister of Commerce and Consumer Affairs to make regulations within 18 months. [Full article available here](https://www.beehive.govt.nz/release/consumers-know-country-origin-food)

**General**

* 1. **Horticulture congratulates New Zealand Government on CoOL law**

Horticulture New Zealand congratulates the Government on passing the Consumers’ Right to Know (Country of Origin of Food) Bill into law.

"Getting mandatory Country of Origin Labelling, or CoOL, for fruit and vegetables has been something growers have been asking for from successive governments for over 10 years," Horticulture New Zealand chief executive Mike Chapman says. "Once this Bill comes into law, consumers get to choose what to buy with full knowledge or where their fruit and vegetables come from. "Our research showed that more than 70 percent of New Zealanders want mandatory Country of Origin Labelling (CoOL) for fruit and vegetables, so it is great to see them finally getting what they want. “Full

**Industry news**

* 1. **Onion biosecurity plan**

Biosecurity New Zealand and Onions New Zealand have signed an agreement for funding to prepare for future biosecurity responses. Both parties signed a sector readiness operational agreement earlier this month which will see the organisations jointly funding readiness activities that will improve preparedness for incursions of pests and diseases of major concern to the onion industry. One task is to draft a readiness plan for Delia antiqua (onion fly), a pest responsible for up to 90% of crop losses in temperate regions overseas. This pest is not currently in New Zealand. [Full article available here](https://www.odt.co.nz/rural-life/horticulture/onion-biosecurity-plan)

**Crop news**

* 1. **Torrential rain damages Teviot Valley fruit**

Following the heavy rain in the region two weeks ago, some Teviot Valley orchardists are reporting damage to about half of their early ripening cherry crop. The heavy rain stopped picking and also caused ripe cherries to split, making them unsuitable for selling. ''We have about 50% loss from the rain,'' Mr Denton said. *The article also contains information on rain damage to a number of other horticultural cops grown in the area*. [Full article available here](https://www.freshplaza.com/article/9048542/nz-torrential-rain-damages-teviot-valley-fruit/)

**Other**

* 1. **Soaring international demand leads to strong investment in New Zealand orchards**

Now is the right time to be developing avocado orchards, according to a New Zealand real estate agent, who says the international growth in the popularity of the fruit is leading to a greater amount of investment within the industry. Bayleys Country Sales Manager Matt Clutterbuck, is based in Tauranga, in the Bay of Plenty, and has seen prices increase from around the NZ$150,000 per canopy hectare 24 months ago to as high as $400,000 in 2018, with consistent sales averaging around the $250,000 - $300,000 per canopy hectare in the Bay of Plenty.

"There has been a real increase in demand recently," he said. "(Buyers) can see that good story of NZ avocados going around the world, as well as improving returns over the last few years, and future forecasts looking stronger. We've got a biannual crop with the avocados, however we are starting to see crops improving and becoming more consistent year on year, where the peaks are not so high and the troughs are not so low. A bit more consistency around yield is one, but definitely the returns are also a step up. It's a credit to NZ Avocado, and the work that they have been doing behind the scenes in regards to their research and development, and just getting the product across the world. It's on the back of their good work that these prices have gone up." [Full article available here](https://www.freshplaza.com/article/9048834/soaring-international-demand-leads-to-strong-investment-in-new-zealand-orchards/)

* 1. **Plastic bags to be phased out by the middle of 2019**

The government of New Zealand has confirmed that single-use bags and thicker boutique bags will be phased out over six months, as soon as Cabinet signs off on the regulations. Bin liners and synthetic fabric reusable bags will still be allowed, as will bags provided for fruit, vegetables and raw meat.

Associate Environment Minister Eugenie Sage said a ban was what New Zealanders wanted. "There's has been huge public support for this. Ninety-two percent of people who made submissions -and there were nearly 10,000 submissions- supported it." [Full article available here](https://www.freshplaza.com/article/9047689/new-zealand-plastic-bags-to-be-phased-out-by-the-middle-of/)

* 1. **Strawberry saga continues**

The strawberry contamination saga that rocked Australia in September is still not over, after a needle was found inside fruit purchased from a supermarket on Saturday. The needle was discovered in a strawberry punnet purchased from a supermarket in Geraldine, in the Canterbury Region in the South Island of New Zealand. Police are investigating the matter, a police spokeswoman said.

The needle that started the whole thing was found in a punnet from Queensland's Berrylicious/Berry Obsession farm. There, My Ut Trinh, known as Judy, was arrested earlier this month after a two-month police investigation allegedly linked her DNA to the first needle discovered in Australian strawberries. Ms Trinh operates a Caboolture labour hire company, which provided staff to the farm. She has been charged with seven counts of contamination of goods -between September 2 to 5- with intent to cause economic loss. If found guilty, Trinh, could face 10 years in jail.

This weekend there was a needle found as well in a capsicum bought at Tauranga Countdown. Will Taylor found it in a red capsicum purchased from Countdown Bureta Park. Taylor contacted the store immediately and informed them. A Countdown spokeswoman said the store has referred the matter to the New Zealand police who will investigate.  "We take food safety incredibly seriously and will work closely with both the NZ Police and MPI to cooperate fully with their investigation," she said.

[Full article available here](https://www.freshplaza.com/article/9047472/strawberry-saga-continues/) Also see “ Needle found in capsicum bought at Tauranga Countdown over weekend” [Full article available here](https://www.stuff.co.nz/business/108881861/Needle-found-in-capsicum-bought-at-Tauranga-Countdown-over-weekend)

* 1. **New Zealand is unprepared for more frequent droughts**

According to  a new report, more droughts could bring disease, power outages and food shortages and New Zealand isn't ready. Although the country has historically been "water-rich", New Zealand is not well-prepared to cope with a future involving more drought in some areas. Households could be at increased risk of disease due to a water-shortage induced lack of hygiene, the report says.

The country could also face shortages of fruit and vegetables, interruptions to electricity supply, more

The report raised several questions for further research, one of which has already developed into a project aimed at understanding the future of drought for New Zealand. It's a big task, but project leader Wageed Kamish from environmental and engineering consultancy Tonkin and Taylor says it is achievable: "Niwa, our project partner, has already completed a considerable amount of work on climate change projections and these will provide a good platform from which to start. Although it is true that farmers and rural communities normally experience the full effects of a drought, we don't have to look much further than the recent Day Zero scenario in Cape Town to realise that urban areas can also be affected by droughts." [Full article available here](https://www.freshplaza.com/article/9049471/new-zealand-is-unprepared-for-more-frequent-droughts/)

**Biosecurity**

* 1. **New biological control for kiwifruit disease**

Kiwifruit growers can now access a new tool to help them combat the bacterial disease Psa – the biocontrol product AureoGold™.AureoGold™, developed by Plant & Food Research in collaboration with Arysta LifeScience, is a natural yeast strain that reduces growth and spread of Psa bacteria. It can be used during flowering and post fruit set, a time in the calendar when use of other controls for Psa is limited. AureoGold™ is a yeast found naturally on many different species of plants and fruits in New Zealand and is safe for bees.

AureoGold™ has been approved for use by the Ministry for Primary Industries under ACVM (agricultural compounds and veterinary medicine) regulations, and has BioGro Organic Certification.

After the discovery of Psa, Plant & Food Research scientists began screening their library of microbes to identify any with the potential as a bio-bactericide control agent. The New Zealand yeast that forms the basis of AureoGold™ was identified in 2012, and was fast-tracked through glasshouse and field testing through a partnership with Zespri/KVH and Arysta LifeScience. AureoGold™ is marketed by Arysta LifeScience (previously Etec Crop Solutions) and will be available from Horticentre, Farmlands and Fruitfed Supplies. [Full article available here](https://www.freshplaza.com/article/9049400/new-biological-control-for-kiwifruit-disease/)

* 1. **Border security authorities praised for keeping stink bug out of New Zealand and Australia**

Hort NZ has praised the New Zealand and Australian governments for their border security efforts in keeping the brown marmorated stink bug (BMSB) out of the countries. Last week authorities from both nations ordered two vessels out of their waters, after the bugs were discovered in pre-arrival checks.

Biosecurity New Zealand officers intercepted stink bugs after the Carmen arrived in Auckland from Europe on Wednesday morning. The vessel was carrying a range of vehicles from Europe and the United States.

In a separate incident, The Triumph, owned by Armacup was sent back to China from Australia after passing through multiple ports, carrying cars and machinery. Department of Agriculture inspections found more than a hundred brown marmorated stink bugs and other bugs on the Triumph, which indicates a live population on the boat. These bugs eat everything from tomatoes to apples and broccoli to beans.

For more information on BMSB in

* Australia: [www.agriculture.gov.au/import/before/brown-marmorated-stink-bugs](http://www.agriculture.gov.au/import/before/brown-marmorated-stink-bugs)
* New Zealand: [www.mpi.govt.nz/importing/other/vehicles-and-machinery/requirements/brown-marmorated-stink-bug-requirements/](http://www.mpi.govt.nz/importing/other/vehicles-and-machinery/requirements/brown-marmorated-stink-bug-requirements/)

[Full article available here](https://www.freshplaza.com/article/9049371/border-security-authorities-praised-for-keeping-stink-bug-out-of-new-zealand-and-australia/)



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. **Germany Discord on Glyphosate Reduction Strategy** The German Minister of the Environment revealed a plan to end glyphosate use on November 6, 2018.  This spurred criticism from the Minister of Food and Agriculture who presented her own proposal in April 2018.  This report provides background on the various proposals [Discord on Glyphosate Reduction Strategy\_Berlin\_Germany\_11-20-2018](http://gain.fas.usda.gov/Recent%20GAIN%20Publications/Discord%20on%20Glyphosate%20Reduction%20Strategy_Berlin_Germany_11-20-2018.pdf)
2. **Hungary Exporter Guide** This report summarizes general economic and business conditions in Hungary as they pertain to U.S. exports of food and agricultural products.  Included is an overview of products sales prospects, market trends, and Hungary’s relative position in the international market. [Exporter Guide\_Budapest\_Hungary\_11-21-2018](http://gain.fas.usda.gov/Recent%20GAIN%20Publications/Exporter%20Guide_Budapest_Hungary_11-21-2018.pdf)
3. **Hungary FAIRS Export Certificate Report** Hungary has fully implemented EU regulations for the imports of products of animal and plant origin.   [Food and Agricultural Import Regulations and Standards Report\_Budapest\_Hungary\_10-29-2018](http://gain.fas.usda.gov/Recent%20GAIN%20Publications/Food%20and%20Agricultural%20Import%20Regulations%20and%20Standards%20Report_Budapest_Hungary_10-29-2018.pdf)
4. **Romania Deciduous Fruit Annual Report** Post expects Romanian fruit production to recover in 2018, following a 15-percent decline in 2017 due to weather conditions.  Demand for fresh fruit is poised to remain robust, supported by growing consumer purchasing power and an increasing preference for healthful products.   [Deciduous Fruit Annual Report\_Bucharest\_Romania\_11-19-2018](http://gain.fas.usda.gov/Recent%20GAIN%20Publications/Deciduous%20Fruit%20Annual%20Report_Bucharest_Romania_11-19-2018.pdf)

**Regulatory**

* 1. **EU trademarks & IP rights will still apply in UK under Brexit Deal**

Under the pending Brexit deal between the two sides, EU trademark and design rights holders will keep their intellectual property protections in the UK. The UK also wouldn’t charge EU intellectual property holders to register their rights in the country after it leaves the bloc.

Geographical indications, which are words that suggest a product was made in a particular place, under EU law would get comparable protection in a post-Brexit UK The agreement states that renewal dates for trademarks and design rights for goods and services in the UK will follow those set under EU law. Filing or priority dates of those trademarks will be the same as those set as per EU regulations.

According to an article on [bloomberglaw.com,](https://news.bloomberglaw.com/ip-law/eu-trademarks-other-ip-rights-to-apply-in-uk-under-brexit-deal) the UK has said it wants to be part of the upcoming patent system that will cover most of the European Union after Brexit is finalized. In April, it ratified an agreement on the system that would create a single patent right covering most of Europe, along with a new Unified Patent Court to rule on disputes relating to the new patents. [Full article available here](https://www.freshplaza.com/article/9047962/eu-trademarks-ip-rights-will-still-apply-in-uk-under-brexit-deal/)

* 1. **OECD: “Trade tariffs and higher interest rates are slowing global economic growth”**

According to the latest forecasts from the Organization for Economic Cooperation and Development, the global economy will continue to slow down in 2019, amid prolonged trade disputes and rising interest rates. But the Paris-based group doesn't see a recession on the horizon.

Global growth will slow from an estimated 3.7 percent this year to 3.5 percent in 2019 and 2020, down from a previous forecast of 3.7 percent for 2019. The slowdown is expected to hit hardest in developing economies, as rising interest rates dampen in investment in continues like Brazil, Russia, Turkey and South Africa.

Trade flows between the U.S. and China have slowed after a tit-for-tat escalation in tariffs by Washington and Beijing. The stalled Brexit negotiations over Great Britain's looming departure from the European Union have also raised uncertainty about the impact on trade flows between the EU and U.K.  [Full article available here](https://www.freshplaza.com/article/9047125/oecd-trade-tariffs-and-higher-interest-rates-are-slowing-global-economic-growth/)

* 1. **European biocontrol industry proposes new EU regulatory framework**

The International Biocontrol Manufacturers Association (IBMA) recently published its vision on how to improve regulation for the biocontrol industry in a [White Paper](http://www.ibma-global.org/upload/documents/ibmawhitepaperwebfinala5spreads.pdf) that it has presented to the European Union. It proposes a new EU regulatory framework for bioprotection agents.

IBMA’s Executive Director, David Carry says bioprotection technologies that provide effective and innovative plant protection for modern agriculture are a vital tool in the EU’s work to support farmers and effectively implement the Sustainable Use of Pesticides Directive (SUD, Directive 128/2009/EC). ‘However, the current lack of specialist bioprotection regulatory body, legislation, procedure and data requirements, means that the EU is not fully reaping the benefits of this rapidly growing, predominantly SME-based industry,’ he adds

In the White Paper sent to the EU, it proposes that risk-based evaluations should be conducted using high-level scientific expertise in close communication with the applicants. [Full article available here](https://www.hortidaily.com/article/9047891/european-biocontrol-industry-proposes-new-eu-regulatory-framework/)

**Business**

* 1. **Bayer opens up glyphosate research**

Bayer has indicated that it will soon provide safety study summaries relating to its glyphosate product on its transparency platform. The group launched a transparency initiative on 7 December last year with the goal of providing greater transparency to all interested parties around the crop protection safety studies that it performs for regulatory approvals, with many studies having already been released on its transparency platform. The objective of the initiative is to assist in ensuring that debate and decisions are based on sound science and that full information is available on the safe use of products. Liam Condon, the President of the Crop Science Division, said that the company was aware that people around the world want more information about glyphosate and that the company

was eager to offer access to the information on its platform. [Full article available here](http://www.fruitnet.com/eurofruit/article/177225/bayer-opens-up-glyphosate-research)

* 1. **Bayer to cut 12,000 jobs**

In a meeting last Thursday, the Supervisory Board of Bayer AG discussed the plans laid out by the Board of Management and unanimously expressed their support. The company intends to exit the Animal Health business and is assessing available options. Bayer will allocate the investment resources necessary to support Animal Health to Bayer’s core businesses of Pharmaceuticals, Consumer Health and Crop Science.

In addition to the previously announced divestment of prescription dermatology products, Bayer will review its strategic options in the coming months with a view to exiting the sun care (Coppertone) and foot care (Dr. Scholl’s) product lines.

Including the synergies expected from the acquisition of Monsanto, Bayer anticipates annual contributions of 2.6 billion euros from 2022 on as a result of its planned efficiency and structural measures. These measures will include a reduction of around 12,000 of 118,200 jobs worldwide, a significant number of them in Germany. Included in this number are a reduction of 4,100 positions at Crop Science as the result of integrating the acquired agriculture business; [Full article available here](https://www.floraldaily.com/article/9049568/bayer-to-cut-jobs/)

 **Food safety**

* 1. **Romaine lettuce E. coli outbreak narrowed down to California**

The Centers for Disease Control and Prevention (CDC) announced last week that romaine lettuce in the USA is safe to eat as long as it's not from California’s Central Coast growing region.

The FDA also issued a [statement](https://www.fda.gov/NewsEvents/Newsroom/PressAnnouncements/ucm626716.htm) saying that "romaine lettuce that was harvested outside of the Central Coast growing regions of northern and central California does not appear to be related to the current outbreak. Hydroponically- and greenhouse-grown romaine also does not appear to be related to the current outbreak. There is no recommendation for consumers or retailers to avoid using romaine harvested from these sources."[Full article available here](https://www.freshplaza.com/article/9048499/romaine-lettuce-e-coli-outbreak-narrowed-down-to-california/)

The advisory released on November 20 -two days before Thanksgiving- will likely cause “a massive loss” for the industry, Michael Droke, who works in agricultural and cooperative law, told [westernfarmpress.com.](https://www.westernfarmpress.com/vegetables/romaine-lettuce-industry-grapples-fallout-illnesses) [Full article available here](https://www.freshplaza.com/article/9047930/cdc-update-on-e-coli-outbreak-us/)

On November 26, 2018, The Lange Law Firm filed an E coli lawsuit on behalf of a man who was diagnosed with an E coli infection and hospitalized in Florida, after eating romaine lettuce at Beef O'Brady's in Florida. The E coli victim is a Texas resident. Food safety lawyer Jory Lange has received dozens of calls from families across the country who became ill after eating romaine lettuce. [Full article available here](https://www.hortidaily.com/article/9047920/us-law-firm-files-first-e-coli-lawsuit-in-romaine-lettuce-e-coli-outbreak)



 **Sustainability**

* 1. **WMO** **Update: 75-80% chance of El Niño within next 3 months**

According to the latest update from the World Meteorological Organization (WMO), there is a 75-80% chance of an El Niño developing by February 2019, although it is not expected to be a strong event. Sea surface temperatures are already at weak El Niño levels in part of the tropical Pacific, although the corresponding atmospheric patterns have not yet materialized.

According to [public.wmo.int](https://public.wmo.int/en/media/press-release/wmo-update-75-80-chance-of-el-ni%C3%B1o-within-next-3-months), the El Niño/Southern Oscillation (ENSO) is a naturally occurring phenomenon involving  fluctuations of ocean surface temperatures in the equatorial Pacific, coupled with changes in the overlying atmospheric circulation. It has a major influence on weather and climate patterns over many parts of the world. The chance for a strong event (sea surface temperatures in the east-central tropical Pacific rising to at least 1.5 degrees Celsius above average) is currently low. [Full article available here](https://www.freshplaza.com/article/9048813/wmo-update-chance-of-el-nino-within-next-months/)

* 1. **Green and edible cling film**

In an attempt to replace polluting plastic materials and improve storage, safety and shelf life, University of Nottingham researchers have developed 100 percent biodegradable and edible food packaging made from plant carbohydrates and proteins. The researchers have found that plant carbohydrate and protein macromolecules bond together into a special network structure during the film-forming process. The network structure provides the film with a required mechanical strength and transparent appearance for the film to be used as packaging materials. The primary market for these plant-based packaging materials will be superstores and food supply chains. The research team is also aiming to advance the technology for general packaging in construction, express delivery and magazines, etc. [Full article available here](https://www.freshplaza.com/article/9048534/green-and-edible-cling-film/)

****

 **Floral News**

* 1. **Blockchain will change the floral industry**

In its most basic form, a blockchain (formerly block chain), is a growing list of records, called blocks, which are linked together using cryptography. Once published, this information that can’t be changed or tampered with. Some people refer to it as a “public database.”



Software developing company **QuickFlora** dived into the matter and summed up the ways in their opinion blockchain will change the floral industry as we know it today:

* The physical location of every grower and how many acres or hectares they planted will be easily searchable online.
* Need a rose grower in Ecuador that has 6,000 yellow roses ready for harvest next week? This product information will soon be online and easily searchable in a few years using blockchain technology.
* Growers will be able to share what they planted, when it was harvested, when it was boxed, and how it is shipped, with great detail for all buyers to see anywhere in the world.
* Just like you can’t hide a farm from a satellite image, you won’t be able to hide what is growing in the field anymore. This will be public information down the road just like Google street-level view is now.
* Not sure what day the grower cut and boxed those flowers coming your way? This data will be transparent to buyers in the future once it is published on the blockchain. Those growers that don’t choose to share this data will have less market share from major buyers.
* Need a unique glass vase from China? In the future, all known glass factories will be online in an easily searchable public database, maybe even the molds they have on hand also. This will make the product sourcing much easier for all glass buyers.
* You may be able to pay the grower or factory with a digital token once the major financial institutions start to accept this as a standard form of currency. Bitcoin tokens exist today and are known the world over, but few people are using it in commerce for many reasons. Those reasons are going to go away over time as the technology keeps getting better and people have more confidence in these new forms of currency.

When a consumer buys a dozen roses in the future, there may be a QR code on the packaging that shows the exact farm they came from, what day the roses were cut and how it got to the final destination. No more guessing if you just bought three-day roses or ten-day roses. All this information will make buyers far more informed. Buyers, producers and sellers will be sharing more and more information or risk being left behind.

We can’t be sure how people will leverage blockchain data in so many different forms, but the changes will be profound regarding how growers sell and market their flowers and how buyers search, buy and ship those flowers worldwide.

The average grower in South America wastes anywhere from 5-40 percent of the weekly crop because he or she is unable to locate willing buyers worldwide. That grower will directly benefit by publishing their product data on the blockchain, and also cut out the middleman by going straight to buyers, allowing them to capture more revenue per stem. While those are just a few examples, we still don’t know how this new blockchain technology will fully evolve and we may not know for another decade or so. [Full article available here](https://www.floraldaily.com/article/9048492/how-blockchain-will-change-the-floral-industry/)

**Subscribe/ Unsubscribe** If you no longer wish to receive this email please send a note to 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