



## WE'RE ALL ABOUT AVO'S!

NEWSLETTER SPRING 2019

[www.justavocados.co.nz](http://www.justavocados.co.nz) | 54 Woodland Road, Katikati | 07 549 3027

### Welcome to the Just Avocados spring read,

It felt like winter was never coming only a month or two ago and then all of a sudden it arrived, with temperatures dropping and the rain falling. Of course, this coincided with export harvest activity and this has made consistent harvest challenging over the last four to six weeks.

Fruit quality is a consistent theme throughout this edition and managing harvest throughout these wetter months is critical to ensure that we get a better outcome than achieved last season. This does not just mean internal fruit quality or rots but cosmetically too.

Harvesting around wet weather events has an absolute impact on cosmetic quality as the fruit is more susceptible to post harvest damage on the turgid lenticels and our Asian customer base has an extremely low tolerance for this. I am aware that the wet weather can be frustrating when you feel that you are being held up to harvest, so please be patient with us if we ask you to hold off for two to three days or if your intended harvest period moves by 2 to 3 days, the aim is to only achieve the best outcome for your fruit and build strong markets outside of Australia for this season and seasons ahead.

Since the end of the 2018-19 season we have communicated our strategy of focussing on Asia and limiting exposure to the Australian wholesale market which will prove to be depressed from a value perspective over the next few months.

There has been a change with the team since our last update; John Emett has relocated to Whangarei recently. Supply north of Auckland has been a strong growth area for Just Avocados and being able to place a full-time grower services representative there will provide fantastic support to the growers and I am sure that they will enjoy having John around more often.

In this edition of the newsletter, Nathan Darling provides insights how harvesters are doing their bit to improve fruit quality, John updates you on what he is observing in Northland, Kyra provides a view into the wonderful world of fungal activity and how that benefits your orchard and Erica explains all of the factors that contribute to fruit quality.

Regards,  
Jarrod Redwood



**Jarrod Redwood**  
GM Supply and Logistics  
[jarrod@justavocados.co.nz](mailto:jarrod@justavocados.co.nz)  
027 200 0295

## IN THE MARKETS

### JUST AVOCADOS MARKET UPDATE

**Week 37 sees the industry having indicatively exported 100,000 trays, with all markets engaging in a positive manner.**

#### ASIA

The 2019-20 season has begun with Just Avocados taking advantage of early Asian export opportunities. The industry flow plans suggest a bigger push towards the Asian markets, with a 300% volume increase from the 2018-19 season.

Just Avocados leads this space with our continued focus on profit which allows growers to focus on early harvest and timely pruning with great market returns - without compromising any of these factors.

Just Avocados has shipped 60,000 trays to date with 85% of this volume going into our focus markets, Korea, Taiwan and Thailand. This is significant when considering we are in our first week of September and our total Asian volume represented 85,000 trays in the 2018-19 season.

Our market plan continues to suggest 50% of our total volume being placed into Asia, highlighting the importance of continuing to grow our key target markets. Other markets including China, Singapore and India will all play a part in our profit strategy for Just Avocado growers over the next four months.

#### TELLING OUR STORY TO CONSUMERS

A key component to the current point of difference we are offering to the market is our ability to communicate with the market. We are telling our story through QR code technology - a basic concept, one that has been available for a while, but it allows us to educate consumers around fruit origin, ripening processes, and health benefits, all points offering value to the consumer. A QR code is a matrix barcode with information attached to it that is linked to when scanned - in our case, consumers can scan the QR code simply by using the camera function on their smartphones. Hold the phone over the code with the camera app open as if you were going to take a photo. The phone will recognise the QR code and scan it automatically - you don't need to take a photo or

push any other buttons. This scan then takes consumer to a dedicated landing page tailored to the origin and brand of the fruit with videos, recipes and handling information. Try it for yourself on the code included in my article.

#### AUSTRALIA

Australia remains important to the Just Avocados marketing team; we are pleased to have increased our retail volume in Australia which has surprisingly started slightly early than anticipated. With pressure from WA growers to improve their Australian retail market share, it's important that we hold our position in this space for the years to come.

#### SIZE PROFILE

The current size profile is suggesting a larger volume of small fruit throughout all growing regions for the 2019-20 season. We have made a few key changes in our offer for small fruit to ensure we are not compromising large fruit value with



**Jacob Darling**  
GM Group Sales and Marketing  
Darling Group  
jacob@darlinggroup.co.nz  
027 582 9101



New pre-pack design providing a value-added solution for small fruit.

our small fruit offer. Our solution is the design of a pre-pack catering to a segment of the market where we can create value. The pack contains three small avocados and provides convenience, traceability and a suitable lunch option for families with young children. ●





## ON THE ORCHARD

### JOHN'S JOTTINGS – ORCHARD NEWS FROM NORTHLAND AND SOUTH AUCKLAND

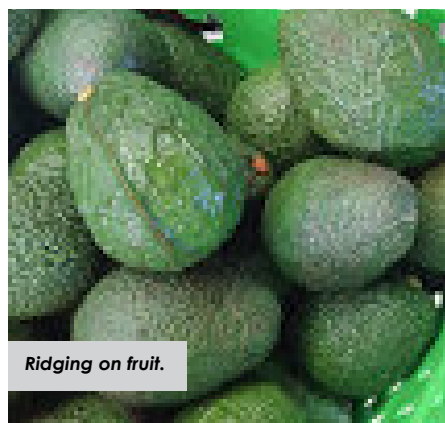
#### MATURITY

Maturities in the Far North have been slow to reach export levels compared with recent years. In some cases, they have moved backwards after cold and wet weather. This is not unusual in the early part of the season.

Export picking is under way however across a number of orchards as the new season gathers momentum.

#### IN THE FIELD

There is a higher than normal percentage of ridging on fruit coming through the packing shed. The most common school of thought on the cause is cold and wind events during the early development of the fruitlets that irritate the skin. From what I have seen, fruit from the Far North to the Bay of Plenty have been affected.



Ridging on fruit.

#### ORCHARD DEVELOPMENT

Orchard development is still continuing in the northern region from the Kaipara Harbour to Houhora. Taporā, located on the edge of the Kaipara Harbour, will have around 600 hectares in the ground in the next two years, and it is difficult to estimate the area in the Far North as there is continual talk of new projects that are planned, but I would say there could be 800 hectares of development.

I was on a block in Kaikohe recently where they have the unusual problem of large volumes of volcanic rock to deal with in setting out the new part of the orchard. To combat this, the rock is rowed up then removed by machinery. The planting line is still

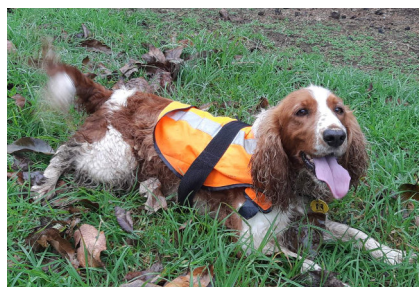
quite rocky despite this process. The older trees on this orchard were in very good health and producing well.



Large volumes of rock to deal with.

#### HEALTH AND SAFETY

It is timely to remind everyone of health and safety on the orchard, given that harvesting from mobile elevating work platforms is one of the more dangerous tasks performed on the block. One grower even went to level of making sure the dog was as safe as it could be!!



Give thought to pruning and spraying as well. Both are activities with a reasonable level of risk.

#### MICROBIAL ACTIVITY

I have taken a soil microbial test from one orchard to assess the level of fungi and bacteria and the ratio of each. Avocados prefer a fungi dominated environment, as do all tree crops.



A sign of fungal activity in an orchard.

Humate products, such as good quality humic acid, which may be



**John Emmett**  
Orchard Management  
and Grower Services  
(Northland and South Auckland)  
john@justavocados.co.nz  
027 476 9087

added with any other fertiliser; and fish hydrolysate are all useful at feeding soil fungi. There are a number of growers choosing this additional testing to look at every opportunity to make improvements in tree health and production.

A healthy fungal population helps with nutrient up take as there is a symbiotic relationship between the fungi and roots.

#### BLACK STAINING ON FRUIT

The black staining on fruit, that has been prevalent in Whangarei and Mangawhai, has shown up again late in the season. The incidence of the staining is considerably less this year than the last two, most likely due to the dry summer. The staining



Black staining appearing again in Whangarei.

that has showed up after the rainfall that fell in autumn. NZ Avocado is looking into what causes the staining with assistance from scientists. In a bad season, growers can lose up to 50% in rejects with this problem. ●



## ORCHARD NEWS FROM THE BAY OF PLENTY

### HARVESTING

Harvesting is well underway in the Bay of Plenty even with dry matter clearances being a bit random this season due to early harvesting expectations, making the harvest plan turn upside down on a weekly basis.

However, the Just Avocados crew are doing a stellar job at keeping up and making changes where necessary to ensure a smooth and trouble-free harvest.

### RAINFALL

Rainfall around harvest is a hot topic in this newsletter - something growers might like to do is have your own rain gauge and record daily rainfall 1-2 weeks leading into your harvest date. Rainfall throughout the bay can be varied so it pays to know what level of rainfall your particular site is getting and if in doubt carry out a roll test prior to harvest - ask me if you want to know how to do this.

### TREE HEALTH

Overall, trees are looking pretty healthy so far but as more stress comes on as flower buds extend, the trees will require an extra boost of nutrients and support.

Foliar feeding can play an important role at this time of year when tree roots might not be working to optimum levels in cold and wet conditions.

To find out how prepared your trees are, we can take leaf samples from your trees and our technical manager, Erica Faber can tailor a three-month foliar programme specific to your orchard or we have a standard pre-foliar combination boost we can advise to go in with your next chemical application to support trees.

### FUNGAL ACTIVITY

Out and about on orchards over the last few months, growers have been observing various mushrooms popping up underfoot, a sign of fungal activity in the soil or mulch layer. Mushrooms are like the tip on an iceberg in the soil as they are the fruiting bodies of fungi designed to produce spores for reproduction. I'm writing about fungi

because growers are asking 'What are they called?' 'Is it ok to have mushrooms growing under my trees?'

There are over 100,000 different kinds of fungi known, and many more yet to be discovered.



Basket fungi.



**Kyra Fielden**

Grower Services Bay of Plenty  
kyra@justavocados.co.nz  
027 257 5028

the more beneficial fungi we have the better they can out compete the pathogenic species.

Avocado trees require high levels of organic matter and soil fungi to improve uptake of nutrients and moisture through their roots and to increase soil aeration for disease suppression.





### Some fascinating facts about soil fungi

- Fungi have very fine hair like strands called hyphae that are microscopic and can't be seen by the naked eye, a teaspoon of healthy biologically active soil can have several yards of fungal hyphae in it.
- Fungal hyphae are significantly smaller and many more of them than tree roots so can reach a larger surface area of the soil gaining access to more nutrients and moisture than roots alone can.
- Nutrients are absorbed by fungi and immobilized and not lost or leached out in the soil then later released, or
- Mycorrhiza fungi get special mention as they will transport nutrients and water back to plant roots they are connected and attracted to via the root exudates, a fine trade where the fungi has a mutualistic relationship with the tree and receives carbon from the tree root exudates and the tree receives nutrients and water from the fungi.
- Fungi are saprophytic where their decay breaks down dead organic matter like woody material and leaf litter and have the ability to transport nutrients back to the root zone, proving why it's so beneficial to chip your prunings back under your trees, utilising the nutrients it has taken to grow those branches.
- Aerated soil encourages more beneficial fungi, pathogenic fungi can withstand anaerobic conditions. When fungal hyphae die, they release nutrients and leave tunnels for other soil biology like bacteria and water to move through and live in, creating more aeration, forming the crumb like structure of soil helping to suppress disease.



Mycorrhiza fungi.



So yes, it is ok for mushrooms to pop up in your orchard—in fact the more diverse species you see, the better and they may even be Mycorrhiza!

You don't have to know their names but they are intriguing, if you wish to learn more, here is a link to a fungal guide that might help identify mushrooms from fungi popping up in your orchard: [https://fungalguidelandcarerresearch.co.nz/WebForms/FG\\_Home.aspx](https://fungalguidelandcarerresearch.co.nz/WebForms/FG_Home.aspx) ●

## ORCHARD MANAGEMENT WITH ERICA

### HARVESTING, PACK OUT & FRUIT DEFORMITIES

The following is an overview of factors that adversely impact fruit quality and shelf life with tips to ensure you minimise risk to your fruit and ultimately your pack out.

### MATURITY

Avocados are one of the few fruits that do not actually ripen on the tree and have to be picked for the ripening process to begin. This is known as climacteric fruit. Studies indicate that C7 sugars and other metabolites are responsible for inhibiting the ripening process of the fruit while on the tree.

Also, unlike other fruit, avocados accumulate oil instead of sugars and the oil content increases as the fruit matures on the tree. Oil content was previously used as an indicator of fruit maturity but testing has shifted to dry matter content for determining maturity as there is a very close correlation between dry matter and oil content and dry matter testing yields quicker results and is more economic to do.

In New Zealand, fruit needs to test at an average of 23% dry matter for local and 24% for export markets before harvest can commence. These values ensure minimum oil content and fruit that the consumer will find both tasty as well as buttery and smooth.



**Erica Faber**

Orchard Productivity Manager  
erica@justavocados.co.nz  
027 549 8229

It is the content of oil and the profile of fatty acids that determine fruit quality for avocados unlike other fruit where the balance of sugars and organic acids are used to determine quality. Harvesting too soon when the oil content is not yet high enough will result in watery, tasteless avocados. Once harvested, the ripening process commences. Even though the fruit has been picked, it is still "alive" so to speak and continues to respire; absorbing oxygen and giving off Ethylene, carbon dioxide, water and heat. The increase in Ethylene production is accompanied by numerous complex changes resulting in fruit softening, flesh colour change as well as the synthesis of aroma and flavor chemicals. Cooling of the fruit soon after harvest is therefore important to slow down the ripening process as well as moisture loss.

## CORRECT HANDLING PROCEDURES

### FIELD HANDLING

In many countries Hass fruit is snap picked. However in New Zealand, Hass is snip picked to a pedicel length of 5mm. This not only reduces moisture loss and fungal disease entry but also differentiates the fruit from windfall or stolen fruit which either have no stem / button or a long stem. Cutting the pedicel too long though will cause scratching and abrasions on neighboring fruit, affecting pack out.

After picking, the fruit must be carefully and gently handled. When transferring the fruit from the picking bag to crates or bins, a drop height higher than 10cm will cause bruising leading to localized softening. Bruise severity increases with increasing fruit drop heights and will often only manifest after a few days.

Any mechanical damage caused during field handling and transportation will affect the fruit's cosmetic appearance impacting your pack out and also acting as entry points for postharvest pathogens that cause decay and rots. It is important therefore to ensure pickers have short nails, and bags, bins and crates have no sharp edges or protrusions and that there are no stray twigs in the bags or bins as all of this can result in scratches, cuts and abrasions on the fruit.

Also ensure that your access roads are well maintained and tractor speeds are at a minimum so as to avoid the fruit jostling around in the bins.

Bins that are overfilled will also cause compression damage and bruising.



Keep bins in the shade and out of direct sunlight and use bin covers if possible. This will not only prevent sunburn and keep any nasties from landing up in the bins (food safety) but will also reduce heat buildup and moisture and weight loss of the fruit.

The harvested fruit should reach the pack house as soon as possible so that the fruit can be cooled down as an increase in pulp temperature will accelerate ripening and shorten the shelf life of your fruit. If harvesting late in the season, avoid picking when temperatures are high.

With regard to phytosanitary requirements - ensure that clippers are sterilized daily, bags and bins are checked and cleaned, fruit does not come into contact with soil or mud and that when moving bins, the forklift is not carrying soil or debris that is knocked off into the bins. Hand sanitizer or washing facilities should also be available to ensure good hygiene when handling fruit.

### FRUIT DAMAGE AND DEFORMITIES AFFECTING FRUIT QUALITY AND PACK OUT

While you are admiring your fruit that has been harvested, you may notice some odd deformities or perhaps wonder what is impacting your pack out. Below are some of the issues that I have come across to date this season, first and foremost being lenticel damage.

## LENTICEL DAMAGE

In New Zealand, harvesting in the rainy season makes our harvest not only more challenging logistically but also can attribute to poorer pack outs due to the fruit being more susceptible to lenticel damage, compression and external bruising, all of which can result in a significant increase in fungal diseases, rots and internal bruising. It is important therefore to follow industry harvest protocols and not harvest if there has been 5mm or more of rain in the preceding 24 hours.

An adequate drying out period should be allowed for not only fruit to dry off but also for the cells to respire, lose moisture and "shrink" back to normal. This will depend on your orchard drying conditions and whether you have pruned open canopies and inter rows and orchards that facilitate sunlight and air movement.

As mentioned, lenticels are susceptible to handling damage after rain when the cells around and in the lenticel, expand and fill with water.





Lenticels are the macroscopic openings occurring on the surface of avocado fruit and are responsible for gaseous exchange and transpiration. These lenticels originate from pre-existing stomata during fruit enlargement and growth. The fragile cell membranes, stressed under increased turgor pressure may rupture with added impact or compression during harvest handling causing visible browning. Not only does this impact on pack out but we also know that damaged cells are more susceptible to fungal diseases impacting on both fruit quality and shelf life. Imagine if you will, two balloons - one hardly blown up at all and one blown up almost to bursting point. It doesn't take much handling or impact for the balloon under massive internal pressure to burst or as in the case of avocados, for the cells expanded with water to rupture with harvest handling. Instead of ending up in an export crate, many of the fruit with lenticel damage (also known as peel handling damage) end up in domestic classes or processing. The tell-tale brown speckling with lenticel damage gets progressively worse over time and what may appear at first as only 2% or even less at harvest can easily end up being over 20% at end of the pack line or on the super market shelves. Incidences of vascular browning are also reported to be higher in fruit harvested when they are wet.

### WIND DAMAGE

Not only does wind contribute to windfall fruit affecting total production but it also causes wind rub on fruit affecting pack out. This will be exacerbated when:

- There are insufficient windbreaks or shelterbelts
- Shelterbelts are too dense and instead of breaking the wind velocity by filtering it, it forms a barrier, creating turbulence over the shelterbelts and into the orchard
- Trees have been allowed to grow too tall or
- Row direction funnels the wind



Wind damage.



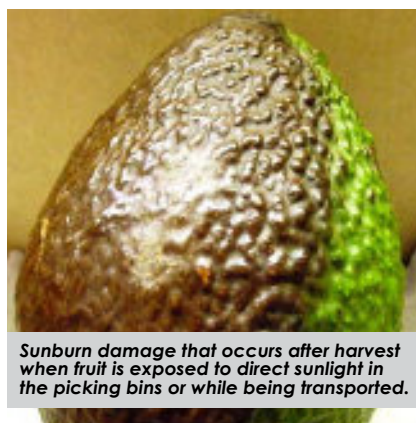
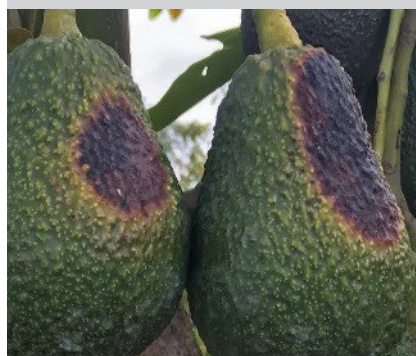
Wind damage.

### SUNBURN DAMAGE

If you had any exposed fruit, you will have fruit that will show sunburn damage in varying degrees from pale yellow to black lesions. Spraying sunburn protectant products e.g. Surround or Bud Mate will help prevent sunburn and improve pack outs. Sunburn can also occur after the fruit has been harvested and exposed to direct sunlight.



Sunburn damage that occurs on exposed fruit growing on the tree.



Sunburn damage that occurs after harvest when fruit is exposed to direct sunlight in the picking bins or while being transported.

### INSECT DAMAGE

The two main culprits responsible for damage to fruit and affecting pack out if not properly controlled are Greenhouse Thrips and Leaf Roller. Regular pest monitoring from fruit set until harvest is important to ensure your best possible pack out.



Leafroller damage.



Green house thrip damage.

### DEFORMITIES

Physical deformities can develop due to many reasons. Abiotic or environmental stresses such as cold, heat, wind, or water stress at the early stages of fruit development can cause ridging and bumps, neckiness (also known as goosenecks) and cricks (also known as crick-side). Water stress will also reduce fruit size, increase fruit drop and the incidence of sunburn as well as lead to irregular maturity. Excess water on the other hand can cause fruit cracking or splitting; all of which will affect pack out.



Goosenecks.





Crick side.



Sectorial chimera.



Netting or ridging.

### CHIMERAS

Chimeras are genetic mutations and can manifest as stripes of different colour or peel texture or can also manifest as fruit deformities e.g. Crooks (not the kind wanted for stealing avos!). Quite often all the fruit on an entire branch or even the entire tree will exhibit these symptoms.



Crook also known as Crookneck.

### NUTRIENT DEFICIENCIES

Nutrient deficiencies can not only manifest as internal fruit disorders, which we will cover in another newsletter, but also as physical deformities.



Sunken corky lesions.



Symptoms of Boron deficiency.



Misshapen fruit.

As the fruit matures and we advance further into the harvest season, many of these reasons that adversely affect pack out, fruit quality and shelf life will become exacerbated. More fruit drop, more sunburn on exposed fruit, more handling bruising as well as colouring and decay will manifest. One should weigh up both the economic losses and the impact on the upcoming fruit set and next year's production when hanging your entire crop late for tempting, late market prices.

When growers put so much effort and expense into an entire season to try and ensure premium quality fruit that will pass export grading, it seems that sometimes at the last hurdle we falter and those decisions and mistakes impact our returns. Plan your harvest strategy well and take into account current tree health, environmental impacts on your crop, your pruning window and the upcoming fruit set. Ensure fruit is handled well in the field when harvesting and study your pack out reports to see where improvements and adjustments can be made for next season's crop.

**HAPPY HARVESTING!!** ●

## QUALITY AND COMPLIANCE UPDATE

### NEW FACES

Annalise Hannah – Annalise is our new QC who joined us in June this year. Prior to Just Avocados, Annalise was second in charge on a dairy farm in Reporoa.

Annalise brings much-needed support to the quality and compliance divisions of the Just Avocados packhouse.

### AVOGREEN

As we come into harvest, please remember that if you are planning on sending fruit for export, you will need to have a pre-harvest AvoGreen monitor - within 28 days of picking.



For the orchards that are AvoGreen monitored by Just Avocados, the compliance team will contact you a few weeks prior to harvest and schedule this required monitor.



**Ashley Fraser**

Quality and Compliance Support  
ashley@justavocados.co.nz  
Phone: 07 549 3027



For orchards that are not monitored by us here at Just Avocados, please remember to keep sending in results monthly to your packhouse and don't forget to arrange a pre harvest monitor.

## SPRAY DIARY

A friendly reminder to please roll your spray diary to the new season and link with your packhouse. Please also ensure you declare your spray diary before your intended harvest date. ●

## AVOWORKS UPDATE



**As we begin our harvest season, I thought I would take the opportunity to inform growers of some recent changes in this space.**

Recently, I attended a contract harvesters meeting held by the avocado industry where we discussed various topics from fruit quality through to health and safety. The key messages that came out of these discussions were around how harvesters handle the fruit and the potential impact we can have on fruit quality. Each link in the supply chain has a responsibility to follow best practice to make sure the fruit arrives to market in the best possible state and therefore harvesters need to be aware of the part they play.

The key changes for us this season, which is a result of the discussions, are as follows.

This season, our harvesters will be making sure they are not dropping their picking bags to fit more fruit in, using the two draw cords in the picking bins correctly and ensuring there is a steel guard plate on the bottom of the bins. This is on top of the standard food safety/hygiene rules. The drop bag rule is a little controversial for some harvesters, and possibly growers, because it has the potential to increase the cost of harvest by a few dollars per bin; however, to me it's a no brainer to look after the fruit that we have worked so hard to grow.

The other point worth mentioning is harvest around rainfall. This can be a difficult one for many reasons but there is no doubt about the relationship between harvesting water-logged fruit (due to recent rain fall) and the incidence of fruit rots. Best practice can also be hard



**Nathan Darling**  
Orchard Management  
Avoworks  
nathan@darlinggroup.co.nz  
027 278 7714

to follow in this instance as depending on the conditions before or after rain can impact on the time to commence harvesting. Common sense needs to prevail here and if you are unsure then check with your packhouse.

I strongly suggest that all Just Avocados growers and harvesters take these points on board to ensure the best possible outcome for our fruit. ●



Picking.

FOLLOW US



@JUST\_AVOCADOS



@DARLING\_GROUP