Season Update, facilitated by HIA in partnership with Citrus Australia, is funded by the national citrus research and development (R&D) levy. The Australian Government provides matched funding for all HIA R&D activities. Season Update provides a monthly summary on the major citrus growing regions.

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Western Australia

Seasonal outlook
WA is likely to have a wetter November to January period than normal in the south west land division and Kununurra. Carnarvon has an equal chance of exceeding the median rainfall from November to January.

The outlook for November to January is for warmer daytime and night time temperatures than normal in the south west and Gascoyne land division. In Kununurra there is an equal or lower chance of minimum and maximum temperatures exceeding the median.

For more information on climatic averages or the seasonal outlook, visit the Bureau of Meteorology website, http://www.bom.gov.au/climate/outlooks/#/overview/summary.

Evaporation and irrigation
Average daily evaporation rates for the coming month of November are: Harvey 5.9 mm, Karnet 5.1 mm and Carnarvon 9.2 mm. A large citrus tree (14 metre square canopy area) will use an average of 58 litres of water each day during November in Harvey and 90 litres in Carnarvon.

Phenology
Most varieties have reached the end of petal fall and fruitlet shedding is currently underway. This usually takes up to two weeks. Cell division starts in fruitlets that remain. Cell division starts at the end of petal fall and goes until fruit reach approximately 30 mm in diameter in late December.

The spring leaf flush has finished and leaves are hardening off. Now is your last chance to accurately tag spring flush for leaf nutrient sampling in February/March.

Management during cell division
Over 60% of potential fruit size at harvest is determined in the current Cell Division stage. Mild climatic conditions will favour fruit set and above average minimum temperatures will enhance fruit growth. Adverse climatic conditions, water stress and nutrient deficiencies will negatively impact on fruit development and size at harvest. Water stress at this time can also cause excessive fruit drop.

Crop regulation
Chemical thinning in mid November can be used to thin a heavy crop in an “on” year. This will assist in maintaining good fruit size. For more information on Crop manipulation strategies for improving fruit size, see the Fruit Size Management Guide Part 1, http://www.dpi.nsw.gov.au/agriculture/horticulture/citrus/management/other-information/fruit-size.

Irrigation
Monitor irrigation requirements closely, ensuring an adequate supply of water at all times through the cell division stage. A continuous flow of water is critical for the transportation of nutrients through the plant (particularly calcium). [https://agric.wa.gov.au/n/1551](https://agric.wa.gov.au/n/1551)

**Nutrition**
Apply 25% of annual nitrogen at the end of the vegetative growth flush in November. Apply 30% of annual Potassium after fruit set (10mm size). Supplement potassium with foliar applications of KNO3 at 15–20 mm size to promote cell division.

Calcium is important during this period to reduce albedo breakdown. A series of calcium nitrate sprays are recommended throughout the cell division stage for the management of albedo breakdown. Magnesium, nitrogen, phosphorous and potassium compete with the uptake of calcium. Application of these nutrients should be closely related to leaf analysis and should not be over supplied.

**Mulch and compost**
Now is a good time to consider applications of compost and mulch as part of your nutrition, irrigation and pest management strategies. Compost has been shown to be highly effective in the control of Kelly’s citrus thrips and its water conservation properties have been shown to increase fruit size and yields.

*** Wind Blemish ***
A high percentage of rind blemish is directly attributed to wind events in the first six weeks after petal fall. Significant damage also occurs within 12 weeks of petal fall. As soon as the petals fall and the small immature fruit is exposed, wind blemish to the rind can occur with any movement of leaves, branches, twigs, dead wood, thorns and even other fruit.

**Pests and Diseases**

**Kelly’s Citrus Thrips:** monitor for Kelly’s Citrus Thrips weekly from petal fall to calyx closure.

**Scale:** monitor scale crawlers, applying targeted oil sprays when crawler activity is evident. Release *Aphytis melinus* for the control of red scale during October/November.

**Snails:** if snails are a problem bait while conditions are still moist before the summer dormancy period – do not use copper spray alone as this will not kill the snails.

**Ants:** ants are on the move now and will require monitoring and control throughout summer.

**Aphids:** if controlling aphids only spray the growth flushes.

**Fruit fly:** clean up any fruit left in the orchard.
Queensland

**Climatic conditions**

Some much needed rainfall from storms has fallen during the latter part of the month throughout the Burnett. Prior to these storms, conditions were quite dry. Emerald continues to receive less than their long term average rainfall. Temperatures were close to average. Some of these storms were severe, with very strong winds and hail received in parts throughout Gayndah and some orchards closer to the coast.

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**Phenology**

There looks to be a heavy fruit set again on most varieties. The exception to this may be Murcotts, although it does seem that the Murcott fruit size is smaller this year at the corresponding time of the year. This is a result of a prolonged flowering period for this variety. Generally the Imperial mandarin crop looks to be reasonably heavy again this year, despite last season’s large crop. The blocks are just finishing their second fruit drop with considerable drop being experienced in most orchards.

The timing of the application of chemical thinning agents to Imperials is now, although each block needs to be evaluated individually. The timing of these chemical thinners is likely to be a little later in the Murcotts.

**Management**

Most of the nitrogen applications have been now been completed with potassium applications likely to be applied during November and December.

Pruning continues in some Murcott blocks with all of the early season varieties now essentially being completed.

**Pests and diseases**

Broad mite continues to pose problems for some growers. This pest is particularly prevalent in lemons and limes, however this season we are again seeing it any variety with a rougher skin texture i.e. Murcott, Freemont and Imperial.

The incidence of rust mites has been quite low, however at present there is very low numbers of predatory mites in most orchards indicating that rust mite levels may increase.

The thrips pressure this season has exceeded previous years. Again most of the pressure is contained to lemons and limes.
Red scale levels are relatively low, however some blocks are showing signs of new generation scale moving onto the fruit. Traditionally red scale levels increase from November onwards. Any scheduled chemical control of red scale is best applied when the pest pressure is low. Aphytis releases are also to be made from now on with a view to increasing the numbers of the wasp as the pressure from red scale increases.

The emergence of the citrus gall wasp and its parasite has finished for the season. Samples taken from various blocks throughout the district show that there is very strong parasitism, and it is hoped that in the next few seasons the incidence of gall wasp will decrease as the parasite numbers continue to rebuild.

Emperor brown spot levels are relatively low, which is a reflection of the weather conditions of the past month. Expect to see an increase in infection if conditions return to prolonged periods of leaf wetness.

Preventative sprays for black spot should be continued to be applied regardless of weather conditions.
Riverland, Murray Valley and Riverina

Climate
Mean daily minimums for October were about three degrees above average and maximum temperatures were about five degrees above average. No major rainfall events were recorded during the month.

Lower Murray Water Inflows – Possible allocation cuts next season?
Murray-Darling Basin Authority information indicates that inflows into the river system are at low levels similar to 2002–2003, the first year of the 2000 Drought. The basin is 44% full. The Bureau of Meteorology is predicting a strong El Nino (dry) influence over the next year. VIC Murray water is currently at 85% allocation. NSW Murray and Murrumbidgee high security water is at 97% and 100% but general security water is 13% and 26%. South Australia has a 100% allocation. There is enough water in storage to meet most of high security needs this season however if significant inflows are not received next winter to spring there will be an impact on allocations next season. Growers are recommended to seek updated information from their local water authority (links below).

VIC: http://nvrn.net.au/determinations/current

Phenology
Navels have completed the first main fruit drop period, however fruit are still falling and will continue to fall until mid–December. Fruit will approach the end of the cell division stage at early to mid–December in the southern regions. A way to approximate if fruit are in the cell division or expansion stage is to drop them in a jug of water. If the fruit sink they are in the cell division stage and if they float they are in the cell expansion stage.

Export program
Korea/China/Thailand – Fullers rose weevil & Red scale: Skirting and trunk band spraying are a core practice to reduce Fullers rose weevil populations. Early December is the time to commence the trunk band spraying program. A manual is available from Citrus Australia outlining the requirements and management practices for this program. Red scale is an issue for Korea and oil sprays in December should be applied if any there is a risk of red scale. Aphytis release also assists red scale control. Obtain the latest grower Asia Export Program IPM guide from your local citrus agency.

Management
Crop load and fruit size:
Early observations throughout the southern regions indicate that crop load is highly variable. A reasonable crop load is still on the tree however some late navel blocks that flowered heavily do have notably less fruit then mid–season navels. The early November moderate temperatures
are probably assisting in reducing fruit drop. However hot conditions following can increase the amount of fruit drop and change the situation. Monitor crop load in mid–November and if the crop load is high, seriously consider crop regulation, especially if crop loads in the past few years have been under average. Tops® a new fruit thinning product has been registered for use on citrus.

**Nutrition:** If a low crop load is already apparent (i.e. 2–3 fruit per frame) begin to reduce nitrogen application, especially for blocks targeting the KCT program. Nitrogen application that exceeds the demand of low crop load exacerbates rough rinds and devalues fruit. Significant calcium uptake occurs through new growing roots (root flush). The benefit of ground/fertigated applied calcium to soils with good calcium levels is unknown. Root flush has commenced. Root flush can be seen as white tips on roots. Nitrate and phosphorus can assist to stimulate root growth. Phosphorus is also an important nutrient for cell division. Some ammonia application is thought to assist root growth and should make up 10% of total N. Potassium application should be a serious consideration for blocks carrying high crop loads. Potassium nitrate sprays can help to increase potassium levels but not interfere with calcium uptake at the roots. Information from Israel suggests a 5% potassium nitrate sprayed from mid–November to mid–December can increase fruit size. These rates have not been tried in Australia. Micronutrient foliar sprays should have already been applied.

**Potassium & Urea Fruit size spray:** Average crop loads are expected this season and it is highly likely that these trees will obtain a good fruit size naturally and may not benefit from these sprays. Excessive application of nitrogen and to some extent potassium can increase rind coarseness.

**Pests & Diseases & Issues**

**General**
The first week of November is critical for Katydid and the first three weeks are critical for thrips and LBAM. Damage now can significantly affect returns. Monitoring is critical to ensure that early damage of fruit will not occur.

**Gall wasps are hatching and are best controlled at the egg hatching stage** with registered systemic insecticides. Eggs hatch in about 2–3 weeks. If the end of gall wasp emergence is mid–November, systemic insecticides still need to be active in the tree in early to mid–December.

**Riverina**

**LBAM:** Low numbers are being seen on foliage however some are being seen under the calyx. Now is a critical time to monitor during calyx closure (10–20mm fruit size).

**Katydid:** Generally less than last year however some blocks have detected high levels and required controls. Now is the critical time to monitor and watch out for later hatching.

**Heliothis:** Slightly more grubs seeing than usual however not at significant levels to warrant controls. Most Heliothis bore into fruit and fruit abort in a short time.
**Red scale:** Currently low levels as a good level of parasitism carried over from last season. Crawlers have started to move onto fruit however late November to early December is the time to monitor and assess if controls are required.

**Kelly’s Citrus Thrips:** Thrips are being detected on lemon blocks carrying fruit and/or have a history of thrips. It is critical to look for larvae rather than adults.

**Soft scales:** Low unless a problem with ants is occurring

**Cottonty Cushion Scale:** is being detected in blocks that have had insecticidal intervention.

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**Riverland**

**Red scale:** Generally at low levels and problem areas are blocks with a history of problems. Crawlers are starting to move onto fruit, it is early days and levels are normal. If using oil sprays wait until last week of November to early December to target crawlers.

**LBAM:** Occasionally seen larger grubs, low numbers not requiring control

**Thrips:** Low numbers, only action is for lemons. Critical time is in next 10 days when larvae are present. Most insecticides do not work well on adults, but work well on larvae. Some of navel blocks bordering lemon blocks are starting to show signs of drip activity.

**Katydid:** Less pressure than last year. A few traditional areas have had a reoccurrence. Monitor early in the morning as katydid sun themselves. A few katydid can quickly do a lot of damage.

**Heliothis:** They are present but generally at low levels. They do attack a few fruit in November but this fruit will drop.

**Soft scales:** No major activity, nothing out of the ordinary.

**Cottonty Cushion Scale:** Some activity in blocks using trunk band spraying.

**Mealybug:** Starting to move onto fruit, nothing out of ordinary. No controls required yet.

**Loopers:** Isolated blocks have shown signs of lopper activity. Fruits damage is exactly the same as katydid damage and often confused for katydid. Loopers have a short life cycle and can move in and out of trees within a three week cycle.

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**Sunraysia**

**Red Scale:** t this time is just starting to move, some crawlers on fruit were found.

**Soft Scale:** is becoming a major problem as numbers are becoming high in some blocks.

**Black Scale:** was found in large numbers of newly planted trees. Infection may have been from the nursery. December is the time to control black scale.

**Cottonty Cushion Scale:** was found on the underside of leaves in blocks across all districts. Excessive use of insecticides can increase the incidence of Cottonty Cushion Scale. Paraffinic oil is a good control option.

**Katydid:** numbers have jumped since last month. All navel blocks were found to contain Katydid. They were found in all stages, from nymphs to adults. Controls will be needed soon.

**LBAM:** Grubs are now being found in and around the calyx of fruit and rolled up in flower caps. Weekly monitoring is needed till after the calyxes get tight.

**Crusader Bugs:** is causing a few problems in reworked blocks; some control is warranted if you are losing too much new growth.

**Leaf Miner:** Not a lot a found at this point.
**Kelly’s Thrip:** was found in summer lemons, in high enough numbers to warrant control. Once your navels, grapefruit and especially lemons are close to calyx closure you must be checking fruit every week if not twice a week.

**Fuller Rose weevil:** is still being found in fairly high numbers in all varieties. Growers intending to export to China next year should carefully monitor young trees and around the crown of the foliage. If FRW are found in blocks intended for China now, controls must commence ASAP.

**Mealy bug:** was not found at this point.

**Spined Citrus bug:** was found in a number of lemons blocks that have good numbers of summer lemons. Controls have been applied.
Processing Report

2014/15 season Valencia

The 2014/15 Valencia crop is still being harvested in all growing areas. A healthy supply of fruit, coupled with very high juice yields has led to a surplus this season and prices have been pulled down as a result.

Spot prices for 2014/15 season industrial Valencia fruit have reportedly sunk as low as AUD60–140/tonne, compared with USD180–200/tonne last month. The mainstay of the juicing fruit was traded on contractual terms before the harvest began at AUD270–315/tonne.

If producers were able to pick up and crush good quantities of fruit at the lower end of the current cash price range, the cost would compete with imported frozen concentrated orange juice (FCOJ) from regions such as Brazil. This is certainly something that processors are considering at the moment.

Juice yields reached as high as 520 litres/tonne of fruit this season. While yields are currently registering much lower at 380–420 litres/tonne, the average yield over the season is estimated to be 10–15% up on the year before.

The 2014/15 Valencia fruit is also sweet now, which is usual at the end of the season, but juice ratios are very high at around 16–18.

2015/16 season Valencia

The contract prices for new season Valencia are comparable with last season from the larger processors at AUD270–300/tonne. However, there are reports of smaller processors paying less for contractual fruit.

The spot price for new season fruit is already at AUD60–80/tonne. This is unusual, in a typical year a lower-priced spot market does not emerge until later on in the campaign. Processors are concerned that these low price levels may not even cover costs for the growers. However, it must be pointed out that these cash prices are just for the small volumes of fruit that are currently being rejected from the fresh export market.

New season Valencias are registering fairly average juice yields for this time of year at 500 litres/tonne of fruit. Ratios are also normal at 10.5–12.5.

The crop has arrived around three weeks earlier than last year, which is compounding the problems with picking, due to the old season fruit still hanging on the trees.
**Navels**

As mentioned last month there is not much call for juicing navels due to the abundance of Valencia fruit on the market. Prices have continued to sink with industrial navels now offered at just AUD16–18/tonne. Last season, navels were fetching AUD50+/tonne on the cash market.

**Juice retail**

Scan-data reports are showing that there is a drop in juice consumption in Australia and that uptake from the chilled juice sector has declined for the first time. Processors say they have not seen any weakening in uptake and suggest this data could be an anomaly.

**Overseas**

The USDA’s first official forecast on Florida’s 2015/16 orange crop is pegged at 80 million boxes. This is significantly lower than industry expectations of 85–95 million boxes. Prices on the FCOJ futures market have rallied over the past month as a result.

Meanwhile, the 2015/16 crop in Brazil is in full swing. The crop is running smoothly, but yields are slightly low. Output is predicted to come in between 245–279 million boxes, compared with 300+ million boxes the previous year. The first bloom for the 2016/17 crop looks good, but it is too early for any forecasts.
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