

December 2017

# Season Update

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# Western Australia

## Seasonal outlook

For December the citrus production region immediately north of Perth there is a 35% chance of exceeding median rainfall. The longer term outlooks shows there is over 55% chance of rainfall exceeding the median from December to February for norther production regions of WA. For the remainder of the state, the chance of receiving a wetter or drier than normal summer is roughly equal.

December nights are likely to be warmer than average along the southern WA coastline with remainder equal chance of temperatures being warmer or cooler than normal. There is a 60% chance that overnight temperatures will exceed the median for December to February along the coast of WA, and in the far northern production regions. There are equal chances of daytime temperatures being above or below normal. Heading into January and February, there is an equal chance of temperatures being normal.

More information can be found by following the link:

<http://www.bom.gov.au/climate/outlooks/#/overview/summary>

## Evaporation and irrigation

Average daily evaporation rates for the coming month of December are: Harvey 7.8 mm, Gingin 9 mm, Carnarvon 9.9 mm and Kununurra 8.4mm. A large citrus tree (14 meter square canopy area) will use an average of 65 - 88 litres of water each day during December in the south west and 97 in Carnarvon.

## Phenology



Natural fruit shed has finished or will soon be finishing, with the final drop of larger fruitlets towards the end of the month.

Fruitlets are in Fruit Growth Stage 1 - Cell Division (petal fall to <30mm fruit size). During this stage 80-90% of potential fruit size at harvest is determined.



Above average minimum temperatures enhance fruit growth during this stage. Adverse climatic conditions (including very hot temperatures), water stress and nutrient deficiencies negatively impact on fruit development during this stage.

## Management

*Calcium nitrate sprays* : Now is the time to apply calcium nitrate foliar sprays for the management of albedo breakdown. A series of calcium nitrate sprays are recommended throughout the cell division stage (petal fall to <30mm fruit size).

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. Stress to the plant can also affect the uptake of calcium so conditions should be monitored.

Preliminary studies also suggest that nitrogen applications during early fruit growth can assist in the management of internal dryness in imperial mandarins.



*Wind Blemish*: A high percentage of rind blemish is directly attributed to wind events in the first six to twelve weeks after petal fall, that is until late December. Monitor wind speed and direction during this period to assess the effectiveness of windbreaks.

*Irrigation*: Good water availability is critical during the cell division stage – now is not the time to skimp on water applications. Any water stress during this stage will have negative impacts on fruit development that cannot be made up for in later stages. Monitor irrigation requirements closely, ensuring an adequate supply of water at all times. Continuous water flow through the plant is also critical for the transportation of nutrients through the plant (particularly calcium). There are opportunities to cut back on water applications in later stages of fruit growth.

*Nutrition*: Apply 30% of annual potassium after fruit set (10mm size). Supplement potassium with foliar applications of  $\text{KNO}_3$  at 15-20 mm size to promote cell division. Be careful not to over stimulate trees with nitrogen during this period as any growth flush will compete with the fruitlets and result in poor fruit set.

<https://agric.wa.gov.au/n/1551>

## Pests & diseases

It's important to correctly identify insects in your orchard before taking action to control them – some beneficial insects are easily mistaken for pest insects and need to be protected. Be aware of pest infestation levels and recommended action levels before considering the use of insecticides. There are many publications to assist with this including some on the Department of Agriculture and Food website at [www.agric.wa.gov.au](http://www.agric.wa.gov.au).

*Further information on topics covered in this update*

Citrus nutrition: <https://agric.wa.gov.au/n/1724>

Fruit size management guide:

<http://www.dpi.nsw.gov.au/agriculture/horticulture/citrus/management/other-information/fruit-size>

Various pests eg <https://agric.wa.gov.au/n/1169>

# Queensland

## Climatic conditions

Mild and windy would be the best way to describe the weather during November, with both minimum and maximum temperatures 2 -3 degrees below average. Average maximum temperatures have been 5 degrees below the average of November 2016.

Rainfall has been below average across most of the centres during November, however it must be considered that well above average rainfall was received during October.

Location	Monthly Rainfall mm	Historical Avg Rainfall	AvgMax Temp °c	Historical Avg Max Temp	Avg Min Temp °c	Historical Avg Min Temp
Gayndah Airport	30.6	59.7	29.2	31.8	15.8	17.6
Mundubbera Post Office	36.5	73.7	N/A	N/A	N/A	N/A
Emerald Airport	19.6	56.6	31.6	33.4	18.2	19.5
Gin Gin Post Office	112.2	82.5	N/A	N/A	N/A	N/A

## Phenology

The natural fruit drop looks to have finished although the amount of fruit dropped during this cycle has been relatively low. Fruit crops still look relatively light in Imperials and Murcotts whilst Lemons look quite heavy. Navels crop loads look good this season, no doubt due to the milder conditions experienced so far. It remains to be seen whether there is substantially more fruit than expected once you can see them all post-Christmas.

## Pests and diseases

*Aphids:* Aphids have been more of a concern this season with some blocks requiring treatment. Although the spring flush has hardened off the populations are increasing again on the December flush.

*Flatids:* Flatids are in far greater numbers than have been seen for the past few years. This is generally thought to be because of climatic conditions.

*Red scale:* Levels are generally low however there has been some blocks where there have been large populations of scale moving onto the fruit.

*Maori mite:* Levels have been low with some orchards are requiring control. Yellow rust mite and broad mite are causing an issue in some orchards. Mandarins are still in the susceptible size range for broad mite.

*Spined citrus bug and Fruit spotting bug:* Levels have been low up until now. Spined bug levels are likely to increase from Christmas with Lemons, Murcotts, Imperials and Freemonts expected to be the main varieties attacked.

*Emporer brown spot:* Levels have been low during November, relative to the drier conditions.

# Riverland, Murray Valley and Riverina

## Climate

Mean daily minimum and maximum temperatures were about 1° above average for the Riverina and Riverland, whilst for Sunraysia maximum and minimum temperatures were about 2° above average. Significant rain fell in the middle of the month throughout all regions and further significant rain fell in the beginning of December.

## Phenology & crop load

Flowering was typical of an average seasons, it was not the protracted flowering as had occurred last season. Anecdotal observations indicate that crop load is less than last season. An update will be provided in the February report. There is a high variability in crop load; low crop loads are present on blocks that produced heavily last season and moderate crop loads are present on blocks that produced average crops last season. Sporadic blocks in the Riverina that were affected by frost tend to have a lower than expected crop load. Fruit size is good and will probably be above average.

## Export program

*Korea/China – Fullers Rose Weevil & Redscale:* Growers exporting to Korea, China or Thailand must ensure trees are skirted and if required the first trunk band spray is applied ASAP. A new single side trunk band sprayer is available and a video is featured on the NSW DPI website. A new FRW suppression chemical is available (Exirel™), to provide more management options. Another citrus soil applied insecticide that is claimed to suppress FRW is hoped to be registered in the near future. Red scale and Mealybug are present, if exporting to Korea blocks should be closely monitored and an oil spray applied at a high volume (airblast not recommended) in December, or other chemical options for high risk situations.

*Herbicide & MRL:* Breaches in MRL's have occurred and risk the closure of markets that can quickly drop fruit prices. Growers need to ensure that fruit are never in direct contact with herbicides. Spray nozzles need to be angled downwards and spray rigs should be shrouded. The skirting of trees is also critical to ensure no fruit are in the herbicide strike zone. An article discussing skirting and herbicide shrouding was in the 2014 December issue of the Australian Citrus News. Videos on shrouded herbicide sprayers are available on the NSW DPI website.

## Management

*GA Summer Spray:* GA sprays should be applied from early January. GA is considered an “ESSENTIAL SPRAY”. Research has shown a 20ppm GA application whilst orange fruit are between 30-50mm in size, typically referred to as “golf ball” size, most effective to reduce the incidence of albedo and rind breakdown. GA will increase rind strength and hence improve the ability of the rind to withstand puncture and post harvest anthracnose infection. Spraying is best early in the morning, during slow drying conditions. Avoid spraying during hot spells of 40oC and if necessary, wait for a cool change before application. It is best to apply GA 3 weeks after an oil spray, or one week prior to an oil spray. Thorough coverage of the fruit is essential and follow all label recommendations.

*Nutrition:* Coarse fruit is undesirable in the Asian markets. Low crop loads increase the risk of coarse rind texture. Adjusting nitrogen and potassium application to suit crop loads is very important to minimise coarse rind texture. All calcium up-take into the citrus rind (peel) will occur during cell division (mid Dec).

*Potassium & Urea Fruit size spray:* Many trees are carrying low to medium crop loads. It is highly likely that these trees will obtain a good fruit size naturally and may not benefit from these sprays. In some cases nitrogen and potassium foliar sprays may exacerbate coarse rind texture.

## Pests, Diseases & Issues

**ALERT:** Now is the time for Red scale oil sprays. Fruit Fly monitoring and associated baiting programs must be occurring in the Riverina and Sunraysia region. Valencia’s and unpicked/missed navel and mandarins are highly susceptible to attack. It must be managed to over summer so numbers are minimal when colour break occurs.

### Sunraysia

*Red Scale:* White caps to second instars are visible on fruit. Now is the right time to spray oil.

*Soft Scale:* Soft scale is visible on new growth in all districts, particularly on young trees. All growth stages are visible. An oil sprays now will help to reduce numbers and there are chemical control options.

*Katydids:* The critical period is generally over and only a few katydids are seen Katydids.

*Light Brown Apple Moth:* LBAM numbers are still present and inside the canopy where spray coverage might have been poor. A correctly timed Prodogy™ spray has provided good control and it is IPM friendly. Loopers are still present and are being controlled with LBAM controls.

*Kelly's Thrip*: Lemons, grapefruit and navels have already had controls applied where required. Most fruit are at calyx closure and strip problems should abate for navels, but could still be an issue for lemons and monitoring should continue.

*Fuller Rose weevil*: Some were found on new growth but are not of concern. Skirting and other KCT program practices (i.e. TBS) should have already been implemented.

*Mites*: Two Spotted Mite was detected in blocks that have a history of trunk band spraying. Paraffinic oil sprays normally provide good suppression. Mites were also prevalent on dusty headland rows.

*QLD fruit fly*: Increasing numbers is being found throughout the region and all growers should be implementing a monitoring and baiting program.

## **Riverina**

*Red Scale*: Red scale is appearing on fruit. Monitoring now is important to assess if an oil spray is required from mid to late December.

*Mealybugs*: Numbers are slightly lower than usual. All growth stages are present. Minor levels do not need to be treated as summer heat and parasitism normally suppresses numbers, control is normally done in late summer. However if levels are high and blocks are targeting mealybug quarantine sensitive markets then a control may be warranted (oil plus insecticide).

*Kelly's Thrips*: Blocks with a history of KCT have had some control applications applied. Numbers can still rise so monitoring is important.

*SCB*: Minor levels are present in lemons.

*Katydid*: Katydid have been sporadic throughout the blocks. Fruit should not be susceptible by the end of December.

*Light Brown Apple Moth*: Numbers are slightly higher than usual. Some controls have been applied and damage could occur up to the end of December.

## **Riverland**

*Red scale*: Red scale is moving onto fruit now. Levels are typical for this time of season. Levels are higher on blocks with a history of issues. Oil is the preferred treatment however blocks in sensitive situations (Korea export) are using chemical control options.

*LBAM & Loopers*: some blocks exceeded thresholds during November and the application of *Prodigy™*, an IPM friendly control measure, successfully controlled numbers. Good spray application was critical for good control. Loopers were also seen and would have been controlled with LBAM sprays.

*Thrip*: they have only been in issue in lemons and grapefruit, some blocks did require controls. Numbers have not been an issue in navels. Hot dry conditions tend to reduce numbers.

*Katydid*: Katydid numbers have been typical of average seasons . Fruit are becoming less susceptible and soon should not be an issue.

*Mealybug*: More blocks are being noted with lower levels of Mealybug. Mild humid conditions tend to favour their development. In most cases the heat of summer and parasitism is expected to suppress populations, however high levels may need action. December Oil sprays to control scale would help to reduce levels.

*SCB*: Signs of activity is seen on lemons and need continuing monitoring.



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