

September 2016

Season Update

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Western Australia

Seasonal outlook

The chances of a wetter or drier three months are roughly equal for most of WA. A wetter-than-average spring is likely in localised areas over northwest WA such as the Kimberley region. Roughly equal chances of warmer or cooler spring days for southwest WA. Northern regions of WA have higher chance of exceeding the historic median daytime and night time temperatures.

Evaporation and irrigation

Average daily evaporation rates for the coming month of September are: Harvey 3.2 mm, Karnet 2.5 mm and Carnarvon 6.6 mm. A large citrus tree (14 metre square canopy area) will use an average of 31 litres of water each day during September in Harvey and 65 litres in Carnarvon.



Phenology

Bud break and most varieties have started to develop flower buds. We are now in the pre-bloom to flowering period which runs from August through to October.

Pre-bloom to flowering is a critical period for spring flush and flower development and is a high demand period for nutrients. The key management goal for this stage is to ensure the trees are well supplied with all required nutrients leading into flowering and fruit set.

Now is a good time to tag the spring flush to ensure you collect the correct leaves for nutrient analysis in February/March. The buds that have burst (as shown in the photo) will form your spring flush.

Management

Nutrition: After harvest consider foliar applications of urea and micro nutrients to promote flowering for the coming season, particularly if you suspect a light flowering year. Further foliar micronutrient sprays applied to the new spring flush when it emerges will also boost tree nutrition and help improve fruit set and fruit size. Apply the spring micronutrient spray when leaves of the new spring flush are at least 1.5 cm long – large enough to adsorb a good proportion of the applied nutrients.

Aim to apply 40 to 50% of annual nitrogen requirements in the pre-bloom to flowering period (August to October). Nitrate forms of nitrogen such as calcium nitrate and potassium nitrate are the best forms to use during this stage as they are quickly and easily taken up by the roots. Ammonium and urea forms of nitrogen can be too slow to convert to nitrate in the soil and can therefore be lost before they are taken up by the roots. Apply nitrogen in split applications to avoid loss to leaching.

Phosphorus is also important at this time and should be applied just before and during the bloom period. Apply the bulk of phosphorus now and the remainder at monthly intervals. Apply 30 to 40% of annual potassium during the pre-bloom period.

Irrigation: Your trees need adequate water in their root zone to take up nutrients. Monitor irrigation requirements very closely. Although your soil may appear moist, if you have a dig around, you may be surprised that the soil is not as wet as you think. Small amounts of rain (5 mm or less) should not be factored into your irrigation schedule.

Pruning: Pruning after harvest encourages new growth that will bear bigger fruit. Good canopy management will also allow for more efficient application of foliar nutrient and GA sprays and assists in reducing crop load in an “on” year. Pruning will also significantly help a tree to cope with water restrictions and depending upon pruning severity, save water. Note, pruning late navel varieties from flowering to fruit set has been known to result in excessive fruit drop.

Crop regulation: In addition to pruning, 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.

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.

Pests and diseases

Citrus gall wasp: Check your orchards for signs of citrus gall wasps, a new pest in WA. You will see distinctive galls, or swollen woody areas along the last year’s growth. Prune off any galls and destroy the material. Visit the DAFWA website for more information.



<https://www.agric.wa.gov.au/citrus/citrus-gall-wasp-western-australia>

Weeds: Maintain a good weed control program to reduce the incidence of Fullers Rose Weevil (problem in export markets) and to help control snail populations.

Snails: Baby snails are on the move so now is a good time to apply copper sprays to control snail populations. Apply the spray early in the morning on a predicted fine day for best effect. Affected snails will dehydrate in the warm sun before they have a chance to recover from the spray.

Fruit fly: Continue monitoring and bait spray programs for fruit fly until after harvest.

Red scale: If red scale is a problem consider the release of *Aphytis melinus* as a biological control. Plan for the release of *Aphytis* now and order early for the first release in October/November. Keep an eye out for scale crawlers (the juveniles) and apply oil sprays only when crawlers are active.

Queensland

Climatic conditions

Rainfall has generally been in line with long term averages throughout August for most of the districts (although higher in Gin Gin and lower in Mundubbera). Average minimum temperatures have been above average at Gayndah, maintaining what has been a relatively warm winter.

Location	Monthly Rainfall mm	Historical Avg Rainfall	AvgMax Temp °c	Historical Avg Max Temp	Avg Min Temp °c	Historical Avg Min Temp
Gayndah Airport	23.0	26.6	24.0	24.6	9.3	7.7
Mundubbera Post Office	12.4	26.3	N/A	N/A	N/A	N/A
Emerald Airport	17.6	22.4	24.3	25.3	10.7	9.9
Gin Gin Post Office	41.6	32.7	N/A	N/A	N/A	N/A

Phenology

Flowering is progressing, albeit somewhat slower than first thought given the warm winter. Some of the early varieties have yet to show much sign of flowering and it remains to be seen if this season's flowering is going to be somewhat "patchy". There are some advanced blocks at Gayndah, where there are many open flowers with some petal fall, however the majority look like that complete petal fall will occur towards the end of September. Lemon flowering has been very strong and there are many blocks where the main flowering is nearing 50% petal fall.



Advanced flowering in Imperial mandarin

Grower feedback

Demand for export mandarins has been unprecedented, with most growers reporting excellent sales outcomes for Murcott mandarins. Growers have also reported that there has been an increased occurrence of Albedo breakdown this season which has at times impacted on pack outs.

Management

Pruning of most varieties is now well underway.

Those growers that use basal fertilizers will have applied these already and there will also be some additional fertigation of nitrogen and potassium at this time.

Those lemon blocks that have advanced petal fall have already received their first fungicide and it is predicted that the majority of blocks will have received their first spray towards the end of September.

Those Murcott blocks that have increased pressure from *Alternaria* will benefit from a fungicide to protect the expanding spring flush. This is to be timed when the flush is approximately 50mm long.

Pests and diseases

Growers are urged to look out for aphid populations on the expanding spring flush however control is generally not warranted unless the population is in sufficient numbers to cause honey dew and the subsequent sooty mould.

Broad mite and citrus thrips are occurring in lemon and lime blocks that have advanced fruitlets. It remains to be seen if this a pre-cursor to what the pressure will be like during the course of the season.

Queensland fruit fly levels have been low, with excellent control being achieved in all varieties this season.

Growers should be putting out the latest round MAT's through the orchard in order to reduce the overall QFF population.

Product approvals

During the course of the last month there have been several permits issued to Citrus Australia.

Samurai - a product used for the control of Citrus Gall Wasp. It is a soil applied product with a 19 week withholding period.

Captan – a protectant fungicide primarily for the control of *Alternaria* brown spot. The use pattern for this product will be late season applications (from autumn onwards).

In addition to these permits being issued, Citrus Australia have successfully negotiated an increase to the dithiocarbamate MRL from 0.2 mg/kg to 7 mg/kg.

Black spot presentation

In light of the pressure from black spot this season, Dr. Andrew Miles and Nga Tran (Phd student) recently presented the results from this season's black spot trial work and gave an overview of the disease cycle and the associated control options.

The points raised during the presentation were:

- Black spot is a difficult disease to control
- There is evidence to suggest that not all of the infection is coming from the leaf litter on the orchard floor. It now seems that infection may also occur from other sources such as dead wood in the tree and late hanging fruit that is infected.
- The early sprays in the fungicide program are always important
- 70% of the mancozeb residue has disappeared in 14 days

Riverland, Murray Valley and Riverina

Climate

August daily minimum and maximum mean temperatures were near-to-slightly above the historical average. Intermittent rainfall occurred throughout the month which delayed harvest on a few occasions. Some frosts occurred throughout the regions but were not of economic significance.



Phenology

Budburst and subsequent shoot growth has occurred about one to two weeks earlier than average. The trees are at the white bud (white petals visible in the flower bud) and early shoot expansion phase. Shoot growth is variable within the districts varying from 2-4cm long. Flower buds are forming. Leafy inflorescence (pictured) tends to set a higher percentage of fruit than leafless. Check your orchard for the level of flowering and ratio of leafless to leafy inflorescences.

Management

Flowering & Crop regulation: This season cropped average to slightly-above average. It is difficult to predict districtwide cropping levels however individual blocks flowering could be an early indicator. If very low levels of flowers are observed, then a low cropping year is expected. If a medium to high level of flowers are observed, then there is potential for a high crop load however it is difficult to predict because temperatures during the fruit setting stage can significantly impact fruit-set.

Do not be fooled by medium levels of flowers especially if they are leafy inflorescence.

Leafy inflorescence flowers have a significantly higher level of set than leafless inflorescence. Often a high level of leafless inflorescence may result in a low fruit set and crop load.

Nutrition: Traditionally a single micro nutrient spray is applied when leaves are two thirds expanded at about mid-to-late October, however for blocks with persistent micro nutrient issues a pre-flowering spray should be applied when leaves are about 2cm long in early/mid-September. The new leaves need to be at least 1.5 cm long so there is enough surface area to absorb the micronutrients (very few micronutrients move from old leaves to new leaves, need to target the young leaves).

Early budburst means this optional early timing is **NOW**.

Early September is also the time to commence applying ground nitrogen. Nitrate forms of nitrogen (i.e. calcium nitrate, potassium nitrate) are thought to be more available in the colder soil temperatures of early spring because of the slow conversion of ammonium to nitrate.

Pruning & hedging: Pruning after harvest will encourage new growth that bears bigger fruit. It also assists in reducing crop load in an “on” year. Hedging is discussed in the flowering section. Pruning guide is available from your local citrus organisation. Note, pruning late navel varieties from flowering to fruit-set has been known to result in an excessive fruit drop.

Pests & diseases

Maintain a good weed control program to reduce the incidence of Fullers Rose Weevil and to help control snail populations. Apply snail baits as required.

LBAM mating disruption: Mating disruption pheromone dispensers (LBAM Plus®) can be placed in the orchard to reduce the probability of female moths producing viable eggs. LBAM reduction will assist in reducing the probability of detection occurring at export markets.

Harvest

Majority of Washington harvest was completed early in August, some reports of albedo breakdown were noted and this facilitated Washington harvest. Late navel harvest is occurring, with fruit on pruned or wind-protected trees displaying fewer visible signs of wind blemish.

The bulk of the export season will conclude by early October. Harvest was delayed on a number of occasions throughout the month due to rainfall in the Riverina, however there were adequate breaks in the weather to maintain supply. Delays were more prevalent in the Riverina than in the Riverland and Sunraysia.

Export program: Overall the export program has been very successful this year. Export shipments have increased again. No significant issues have been reported. Overall market demand has been good.

Oleocellosis: Oleocellosis is rind injury damage resulting from rough picking and handling of fruit. Damage does not fully appear for up to 4 days after injury and can significantly reduce the value of your fruit. It is most likely to occur when the cells on the surface of the orange are fully swollen due to adequate irrigation or cold weather. It is important to familiarise yourself with optimum harvest practices to reduce the incidence of oleocellosis, taking special care with new pickers.



Events calendar

Sept 20 Gall Wasp Workshop, Loxton Research
Centre, 2pm

Contact Kerrie, 0427 799 465

Oct 19 Citrus Nutrition Master Class, Mildura
Contact Steven Falivene, 0427 208 611

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