Horticulture Innovation Australia

Citrus Australia

April 2017

Season Update

In this issue:

Season Update is 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

Compared to an above average rainfall last year, rainfall for April to June this year is likely to be below average over the southern part of WA. In the north of WA there is an equal chance of exceeding the average rainfall.

From April to June there is an increasing chance of over 60% likelihood of warmer than normal days and nights for citrus production regions north of Perth. In the far southwest and far north there is a low likelihood of exceeding average daytime or night time temperatures.

For more information on seasonal outlooks:
http://www.bom.gov.au/climate/outlooks/#/overview/summary

Evaporation and irrigation

Average daily evaporation rates for the coming month of April are: Harvey 4.4 mm, Karnet 3 mm, Gingin 4.7 mm and Carnarvon 6.6 mm. A large citrus tree (14 meter square canopy area) will use an average of 29 - 46 litres of water each day during April in the south-west and 65 litres in Carnarvon.

Phenology

This year most WA production regions report a 2-3 week delay in colour break. Colour break is when the rind changes from dark to light green. **Keep a good record of when colour break occurs in each variety in your orchard. This will help with the accurate timing of GA applications.**
Most early season varieties reach 50 to 60% colour in mid to late April. Some mid-season varieties have now reached colour break.

GA applications for rind quality

For maximum delay of rind aging and extension of harvest apply 10 ppm GA at colour break. This may delay colour development by 20 to 30 days. Ten parts per million of GA applied at 10-50% colour may delay colour development by 10–15 days. Note: Late navel colour development is more sensitive to GA than other navels.

Apply GA to Imperial mandarins at three-quarter colour for the management of watermark.

The level of colour break can be calculated by taking a sample of fruit from the tree. Assess each piece of fruit for the level of colour, and then look at the number of fruit with each level of colour. When most of the fruit is in the level of colour you are looking for, eg 10-

50% colour then you can act (eg. apply GA). Monitor your fruit on the tree to see how fast fruit changes colour.

Internal maturation rates

Monitor maturation rates of fruit closely and ensure fruit meet the minimum Australian Citrus Quality Standards before harvest. Fruit that does not meet these standards will result in a poor eating experience of your fruit by consumers. The resulting consumer backlash has impacts on the entire citrus industry.

Growers in WA can send their fruit for two tests per variety for free pre-harvest testing. This free testing is part of a WA program in the industry development project that complements testing from the retail and wholesale market. **Imperial and Hickson mandarins in particular should be sent in for pre-harvest testing to get the best time to pick.**

Harvest timing

Think carefully about the timing of harvest as this can have a significant impact on the rind quality of the current crop and on flowering and fruit set for the next season. A late harvest for any given variety will reduce flowering the following season, particularly in many mandarin varieties. For mandarins, have an early select pick, taking the largest and most coloured fruit first. This takes the load off the tree and allows the remaining fruit to increase in size.

Copper sprays

Spray copper before autumn rains to protect fruit from fungal infections and disease. Copper works by protecting the fruit surface on which it is applied. It does not kill fungus in already infected fruit. Coverage deteriorates over time as fruit grows and when exposed to wind and rain. Note: Copper can darken blemishes such as wind rub.

Copper foliar sprays can also be used for the management of snail populations, forcing them out of the canopy and onto the ground where baits await. Be careful not to contaminate ground applied snail baits with the copper spray as this will deter the snails from eating them.

Soil management

If your soil requires the addition of gypsum (for soil structure improvement in heavy soil types) or lime (to increase soil pH or make it more alkaline) now is the best time to apply.

Pests

- Copper sprays should be applied before autumn rains to reduce the incidence of Septoria spot, greasy spot, Phytophthora, brown rot and anthracnose.
- Monitor leaf miner and control with oil sprays when activity is detected.

- Monitor scale crawlers and apply oil spray to infested areas when crawlers are active.
- Continue to monitor fruit fly levels and control with bait sprays. Be prepared to increase baiting frequency and density if trap numbers indicate the need.
- **KILL THOSE SNAILS**. Snail activity will increase towards the break of season and **now is the best time to bait**. Autumn baiting will kill adult snails before they have a chance to lay eggs. Snails are also hungry after their summer hibernation.

- Monitor for distinctive woody galls which can grow up to up to 250 mm long and 25 mm thick on citrus twigs. These can contain hundreds of larvae. Early detection of galls in orchards is essential for preventing their spread throughout your property. For more information on gall wasps, visit: https://agric.wa.gov.au/n/3398

Queensland

Climatic conditions

Significant rainfall has finally fallen throughout all the citrus growing districts of Queensland. Most of this rainfall has been attributed to Tropical Cyclone Debbie which produced large amounts of rain throughout a large part of Queensland and northern New South Wales. Although river levels rose significantly they did not rise to a level where they would inundate orchards.

Average maximum temperatures have been roughly in line with long term averages, however minimum temperatures have been distinctly higher than average.

Location	Monthly Rainfall mm	Historical Avg Rainfall	AvgMax Temp °c	Historical Avg Max Temp	Avg Min Temp °c	Historical Avg Min Temp
Gayndah Airport	252.4	71.2	32.5	31.2	21.6	18.6
Mundubbera Post Office	207.0	65.4	N/A	N/A	N/A	N/A
Emerald Airport	204.6	59.5	32.9	32.8	22.2	20.3
Gin Gin Post Office	478.5	126.5	N/A	N/A	N/A	N/A

Phenology

The lemon harvest has been in progress for the last month. The harvest of grapefruit, Navelinas and Imperials is about to start and will continue to increase in volume throughout April.

The external colour development of the Imperials looks to be somewhat delayed this year. This is no doubt due to the very hot temperatures (maximum & minimum) received during the growing season. Internal qualities of the fruit seem to be progressing well, as many growers are reporting that their Brim A levels are exceeding the minimum level of 110.

There has been a large degree of fruit splitting in the last few weeks [see image below]. I believe this to be a response of the fruit to recent rainfall with a sudden increase in fruit size. This seems to be particularly bad in Novas, Murcotts and Navelinas.

Fruit drop from splitting

Pests and diseases

Oriental mite pressure has been ongoing and although the high temperatures and subsequent dusty conditions have now dissipated, it does seem as though Oriental mite may well be an issue for a little while longer.

Jassid levels have been very low this season, no doubt due to the lack of flush in most of the blocks. There is now a reasonable flush level so the jassid population may well build up on this flush.

Emporer brown spot levels remain reasonably low, even after the recent rainfall. The conditions now are very conducive to infection and therefore protectant fungicides should be regularly applied.

Queensland fruit fly levels are low at present although regular baiting should always be applied.

Spined citrus bug and fruit spotting bug levels remain reasonably low with only a few blocks requiring treatment.

Black spot incidence is lower than last season. Although the black spot symptoms appeared at the same time as last season, they have not progressed to the same levels as seen last season.

Riverland, Murray Valley and Riverina

Climate

Mean daily minimum and maximum temperatures were 2-3 degrees above average for March. No rain occurred in Sunraysia and the Riverland whilst about 20mm of rain fell in the Riverina late in March.

Phenology

The fruit are at colour break and maturing. Early navels have commenced colouring.

Management

Harvest handbook: The new Australian citrus harvest handbook will be available on the NSW DPI website in the first week of May. The handbook will provide pickers instructions on how to pick fruit and basic safety information. An A4 page version of the handbook will be available for download.

Cling Sprays: The warm autumn conditions might hasten the development of fruit. The application of a cling spray is important to reduce premature fruit drop especially on susceptible varieties (Leng) and late hanging fruit. Early season varieties can be sprayed now (mid-April) while mid to late season varieties can be sprayed in early to mid-May. A second spray before bud burst (early to mid-July) might be required to hang fruit longer. Sprays applied after bud swell (late-July) might distort new growth. Fruit sprayed with cling spray have less button tears. Removed buttons are a possible site for disease infection. Refer the label if GA can be mixed with the cling spray.

Spread your harvest - GA: Not all fruit can be harvested/shipped/marketed in the early part of the season. The late season marketing of fruit is identified as an opportunity. If winter rains delay your harvest you could be left with over mature fruit that have a high susceptibility to rind breakdown and are unsuitable for export. The application of GA now can significantly assist in maintaining good rind quality. It can delay rind development up to 2 weeks. It can also help to reduce puffing of mandarins. GA application will provide benefits if harvest is delayed. Applying GA during the later colour development stage (ie. half to three quarter colour) is considered to have some benefit, but a lesser effect as compared to the early colour break stages. Lower GA rates are required for late navel varieties. Discuss GA options with your packer and/or advisor and check with your state authority. Always follow label recommendations.

Fruit development: Fruit size has improved over the past couple of months but is still smaller than last year. However, it is still large enough to be in the acceptable size ranges.

Wind blemish is average. Crop estimate information will be available from the Citrus Australia website by early May.

Disease Management – CRITICAL: It is **critical** to apply Copper sprays (if you have not already) to protect fruit from fungal infection and reduce the incidence of Septoria spot, Phytophthora brown rot and greasy spot in the orchard (c**opper will not protect against sour rot or blue/green mould**). Do not mix copper with other chemicals and do not acidify the mixture.

Snails & Fuller Rose Weevil: Now is the time to apply snail baits to control snails before breeding occurs. Baiting is mainly required for fruit destined for the USA, so discuss snail baiting requirements with your packer. Spray copper for disease control and to deter snails entering the canopy. **Spray copper before you apply baits**. Ensure tree skirts are maintained and a good weed control program is implemented to reduce FRW risk and soil diseases affecting fruit. Maintain trunk sprays as there is a high incidence of FRW.

Export Protocols: Continue with snail baiting if required and maintain tree skirts to reduce the ability of pests (FRW) to move into trees. Closely monitor fruit destined for Korea for Red Scale

Pests & Diseases & Issues

This is the last pest report until spring.

ALERT: The recent extended warm weather can lead to red scale infestations. This occurred last year. Various stages are present and still releasing crawlers. A medium level of scale now can lead to a high infestation prior to harvest. Immediately monitor blocks and assess if action is required.

Riverina, Sunraysia & Riverland

Red Scale: Red scale at all growth stages are seen throughout the district. The warm March conditions have extended the release of crawlers. There is a significant risk that infestations can occur from moderate levels of red scale. Parasitism has been increasing but in some situations parasitism will not be enough to manage scale to acceptable levels. Blocks should be carefully monitored now and immediate action taken if exceeding threshold levels. It is too late to apply oil sprays and alternative products will need to be used.

Soft scales & Mealybug: Generally at low levels. The heat waves in February probably supressed numbers.

Spined Citrus Bug: Hatching was prevalent in March in mandarin and lemon blocks. Some blocks needed control measures. They could still be a problem as the weather cools down. Breeding should slow down as the weather cools. Monitor and control accordingly.

Mites: Some isolated cases of Two Spotted mite seen on blocks using trunk band spraying and also in lemons. Generally present at low levels in most blocks but some blocks did require action.

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