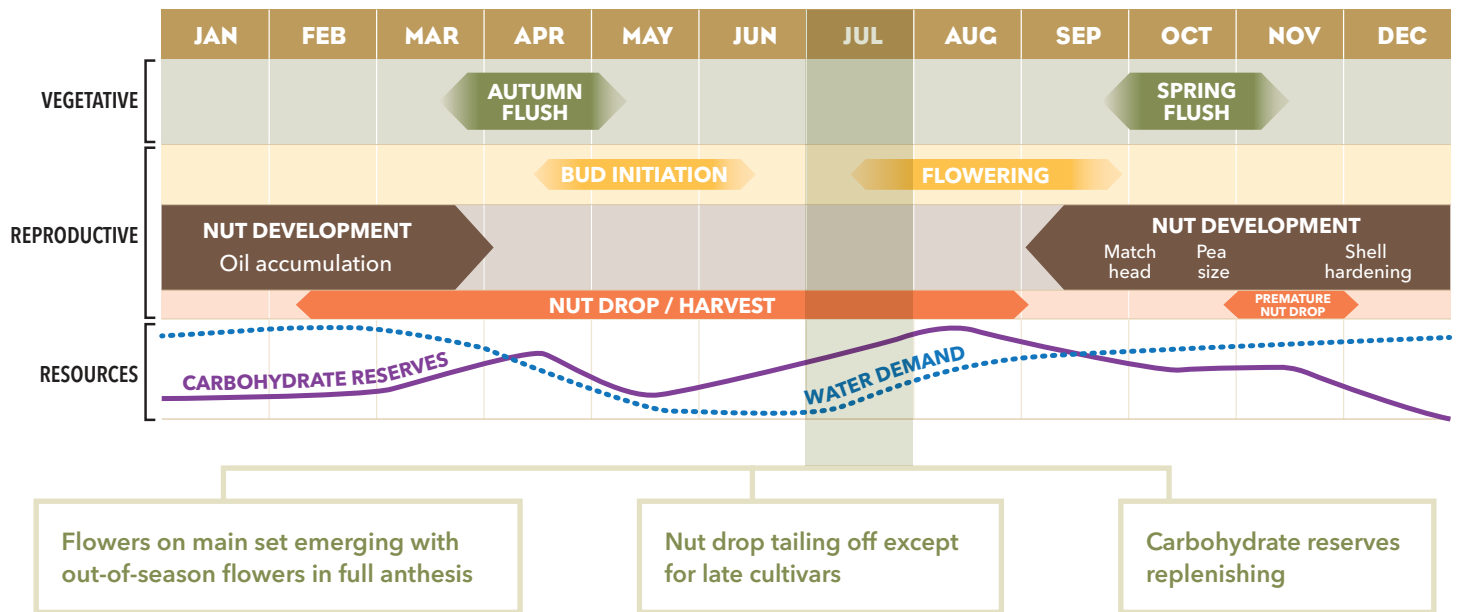


Phenological Cycle



Pest & disease



From now to the end of year, focus shifts to **crop production** and **protection** underpinned by **monitoring**.

If you're not **monitoring**, you're likely making misinformed, mistimed and ultimately costly decisions. **Monitoring** isn't just looking for pests or diseases.

It's about assessing **biotic** and **abiotic** orchard factors that **create the crop**, without which production is limited. Monitoring helps to identify crop enablers and crop inhibitors.

Crop **production** monitoring - Crop enablers

- ✓ Sufficient light distribution
- ✓ Healthy soil and nutrient availability
- ✓ Orchard floor moisture and cover
- ✓ Carbohydrate stores
- ✓ Conducive weather
- ✓ Beneficials (pollinators and predators)

A **monitoring plan** should incorporate regular orchard visits by someone with expertise such as a pest consultant, who will help you decide:

- critical **timing**
- **orchard** or **plant area** to focus on
- **weather conditions** that favour certain enablers or inhibitors
- **monitoring tools** that you can use, e.g. drop sheets and trap hedges.

Currently pest scouts are monitoring for **lace bug** and **flower diseases**. Although "pests" like **flower caterpillar** are present,

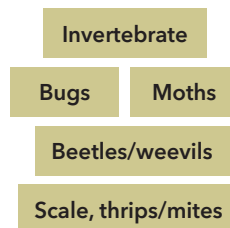
they may be helping control **out-of-season flower**, which has been excessive. It can be a breeding ground for pests and diseases, which then proliferate during the main flowering.

Rat baiting and **resource/harbour management** are essential. Once populations increase towards spring, they can be hard to control. **Baits** must remain **clean and dry** to entice rats.

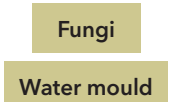
New **crop protection registrations** include Sivanto prime (flupyradifurone) for **lace bug** control and Fontellis

Crop **protection** monitoring - Crop inhibitors

Pests



Diseases



(penthiopyrad) for **flower blights**. As with any chemistry ensure you:

- understand and adhere to the **label**
- know the **optimal time** for application and how it is best **applied** (i.e. dilution volume)
- check for chemical **incompatibilities** if you are mixing products
- **rotate chemistry groups** to avoid resistance
- understand **ecosystem disruption** to the orchard, i.e. what else is impacted?

Management Cycle

Nut maturation			Flower initiation		Winter		Flowering		Preharvest nut drop		Shell hardening
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
							Pest and disease monitoring				
		Harvest									
Mowing/mulching					Tree shaking				Reduced mowing		
					Pruning and chipping						
					Applying mulch/compost/ lime & gypsum			Cover cropping			
					Aerating/profiling		Mulching				
							Animal manures last opportunity				

Management



When harvest is finished, thoroughly clean **shed equipment**. Remove any residual nuts as they attract **vermin** and harbour pests such as **kernel grub**.

Audit your chemical store paying attention to:

- What products you have and are they all within their **use by date**?

- Are containers still in **good condition** and **labels legible**?
- Register with your local **drum recycling scheme** if you need to dispose of any products.
- If you're unsure about what is registered for use in macadamia, go to the [APVMA website](#). It is up to date and has a search function by crop or active or pest/disease.

Also, make sure your **ChemCert** and that of any staff is current. Remember



that in NSW, additional licences are required if you are **contract spraying**, even just for a neighbour.

Mechanical



Make sure you complete **crop protection** tasks, including:

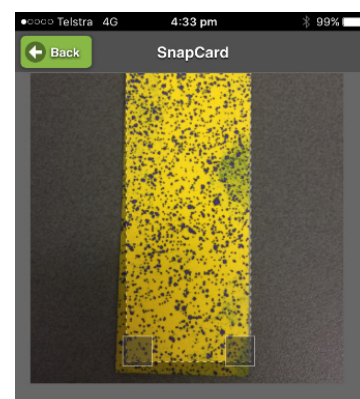
- **Sprayer/tractor calibration.** Engage a professional and ensure your sprayer calibration is **matched to your tractor** and to your **trees**.
- **Nozzle/cannon selections.** Check label requirements for **droplet size** and **dilution volumes** and know your pump output.
- **Coverage tests.** Talk to your GLO or pest consultant as they can help with a **coverage test**. A handy tool is to place water-sensitive paper in the canopy and use the SnapCard app to assess **coverage**.
- **Tractor speed tests.** Faster is not always better, and tractor speed makes an enormous difference to **spray penetration, coverage** and ultimately **efficacy**.

Rule of thumb. With a non-mobile pest or a fungal disease, **coverage**

needs to be very well distributed; with mobile pests like flying bugs, slightly less **coverage** can be adequate. Most new chemistry is not truly systemic, rather it is effective on contact. This means it is essential that you **slow down** when applying them!

If you are planning **canopy management**, do you know what you will do with prunings? Many growers find it more efficient to put **chipped prunings** straight back onto the orchard floor, but if you are going to remove and **compost** them, ensure that piles or runoff will not contaminate waterways.

Tree shaking is under way in northern regions. If you still have cultivars dropping nuts or **stick tight cultivars**, consider shaking your trees. In southern regions, big tree shaking machinery is impractical for most orchards. If you are planning to shake, take care with wet weather **before shaking** as it can lead to barking, particularly as conditions warm and sap flow increases towards spring.



For more information download the AMS video, [Tree Shaker Grower Insights](#) or the [factsheet](#)

If you are using a **spray contractor**, ask about their **calibration** and whether they adjust their equipment **for your orchard**, taking your canopy volume and height into account. If not, you could be paying for a costly service which is not as effective.

Once you have finished harvest, **service** and replace worn or damaged parts and order **finger wheels, brushes** etc. Store finger wheels correctly so they don't bend under their own weight.

Crop inputs



If you haven't ordered your **organic inputs** for application post-harvest, this may be your last chance.

With sparse to moderate ground cover, highly refined and expensive **composts** aren't necessarily better. Applying a **coarse product** that composts over time on the orchard floor can be as beneficial.

Growers are obtaining great benefits from incorporating **double-ground wood chip** with other organic matter and

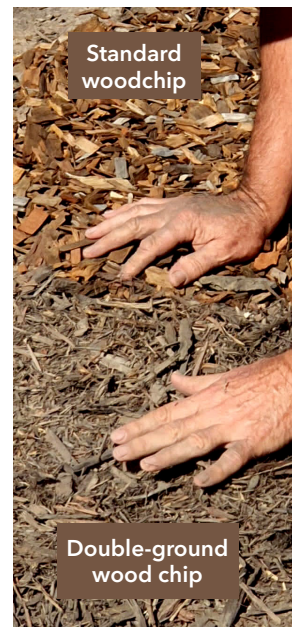
manures post-harvest. You get more bang for your buck:

- it's **affordable** so you can apply a critical mass
- you get far **more carbon** than with composted material
- **double grinding** produces strands **not** chips, which mat wood together and create an **ideal growing** environment for roots and beneficial microbes
- it's **robust** and doesn't get blown away
- it forms a layer that **retains moisture** and **buffers soil temperature**

- it provides food to support a **whole orchard floor ecosystem**.

Check with your nutrition consultant whether you need **soil amendments** such as lime or gypsum. These need to be applied before flowering.

Ensure **boron** levels are adequate for **flowering**. Where conditions are dry, instead of a ground application; you may be better off with a foliar application. **Boron** is a micro element required in very small amounts. Applying too much can lead to toxicity.



The month ahead



Post-harvest is an incredibly busy time. You're finishing the season while preparing for the next. Have a **post-harvest schedule** that

prioritises orchard operations and book any contractors.

Professional beekeepers are looking to place hives on

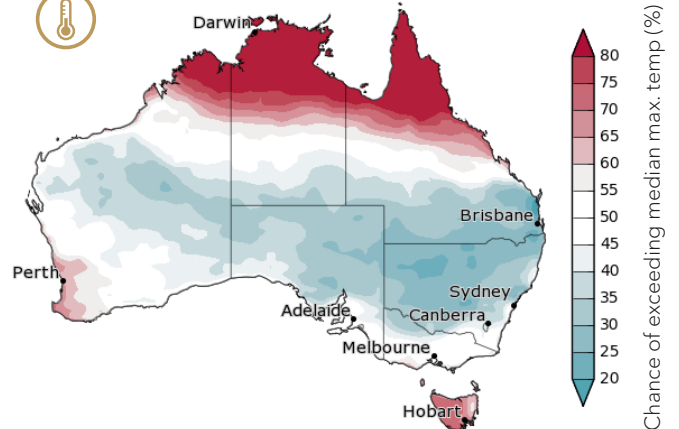
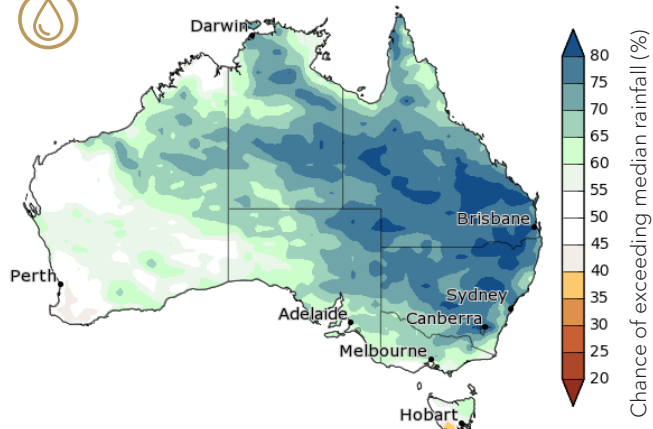
orchards. They need good access, a level site, available water and, most importantly, your assurance that you will

communicate with them to **keep bees safe**. Your local apiarist association can help you connect with **beekeepers**.



Ensure hives have not been moved from a biosecurity zone, currently that includes all of NSW.

BOM rainfall and temperature outlooks for August 2022



Further Information

For more information, contact the AMS Industry Development Manager and/or your processor's grower liaison officer. Also, go to Industry Resources on the AMS website and search for fact sheets, research reports, Bulletin articles, case studies and more.

Hort Innovation
Strategic levy investment

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