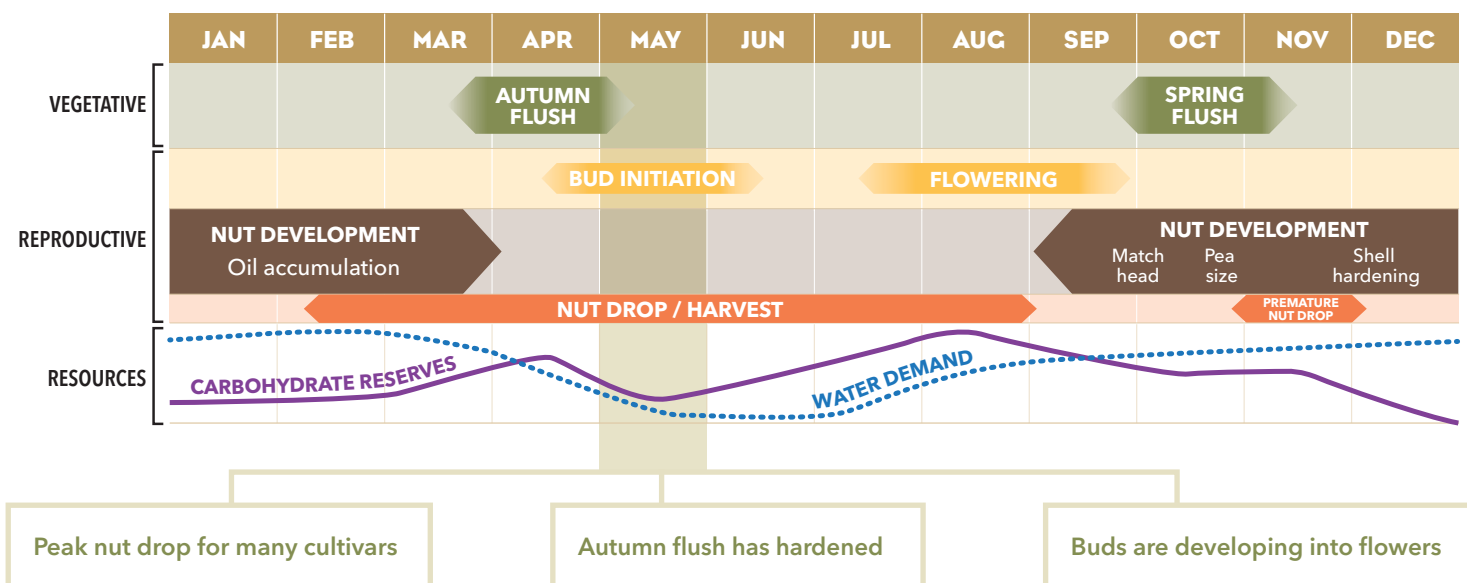


Phenological Cycle



Have you applied for disaster relief if eligible? Grants and loans are available if you have been affected by severe weather. Don't rule out eligibility too quickly, every application is being assessed. Take plenty of photos of any damage! For QLD, head to www.qrida.qld.gov.au or NSW, head to www.raa.nsw.gov.au for more details.

Pest & disease



Following the wet season conduct a survey of your orchard:

- Are there areas where **tree health** has declined?
- Have you identified **surface water runoff** issues (e.g. trees in drainage lines that need removal or the need to improve ground cover?)
- Do you have a problem with **sub-surface drainage** in certain areas?

Top 10 Most Phytophthora Susceptible Cultivars

H2
816
508
333
814
842
849
A4
A16
246

Answers to these questions can help understand the likelihood or extent of **Phytophthora** in your orchard. Research shows certain cultivars are much more susceptible to the disease and **long-term integrated management** (applying several strategies) is likely to be required.

Phytophthora Tools to Assess Tree Health



Feeder root check

- "Snappy" test. With a spade or fork check how many feeder roots you hear snapping around the tree base



Canopy/trunk signs

- Look for signs of pale to yellow leaves, die back, sparse canopies and stem cracking or dark oozing



Yield monitoring

- Monitor production trends and unexplained reductions



Tree vigour

- Look for lack of flush, leaf drop, excessive flowering or rootstock shooting

Phytophthora Control Strategies



Soil health & organic matter

- Healthy soil that is conducive to root growth, high in organic matter, free draining and balanced



Drainage management

- Without orchard drainage, any Phytophthora strategy is unlikely to succeed



Orchard hygiene

- Eliminating the entry of pathogens into the orchard and spread within



Chemical applications

- Phosphonate and metalaxyl are registered but are short acting controls, not long term integrated solutions



Tolerant rootstock

- Select more tolerant rootstocks. Even more so with a history of Phytophthora/drainage issues



Planting systems

- Certain planting systems like mounding assist with greater root zone management

Download the UQ fact sheets [Phytophthora in Macadamia](#) and the [Phytophthora Decision Guide](#) on which this information above is based.



There are a number of ways to plan crop inputs for the season ahead, below are 2 common tools:

1. **Soil/leaf sampling.** If you are doing these in autumn, arrange samples to be taken and analysed. Ideally **leaf samples** should be taken six to eight weeks after the autumn flush has hardened. **Samples collected** within four weeks of a large fertiliser application can skew results. A professional consultant should help interpret soil/leaf results as norms differ by **cultivar**.
2. **Crop load assessment.** The crop you're harvesting removes **nutrients** within the **husk, shell** and **kernel** from the orchard system. Assessing this **nutrient removal** helps plan **replacement** to maintain productivity. As a general rule, a high crop load/yield (e.g. 4 t/ha) removes more **nutrients** than a low crop load/yield (e.g. 1 t/ha). Below is an accepted industry guide to **nutrient removal rates**:

Guide to nutrients removed by the tree during husk, shell and kernel development

	N	S	P	K	Ca	Mg	Cu	Zn	B
	Kilograms per tonne						Grams per tonne		
Husk	4.03	0.65	0.37	7.33	0.22	0.25	2	3	3
Shell	1.93	0.24	0.06	0.72	0.12	0.12	8	4	2
Kernel	4.54	0.49	0.80	1.10	0.12	0.37	2	6	2
TOTAL	10.5	1.38	1.23	9.15	0.46	0.74	12	13	7

Cultivars have different nutrient removal rates. Recent work by NSW DPI showed as an example that **A cultivars** have a **higher total calcium removal**, with A16 in particular removing more than double the indicative calcium rate.

Returning husk back to the orchard is one of the most **cost effective** ways to replace many **nutrients**!

Order compost/organic matter amendments now so they are available immediately after harvest. Book a contractor if you can't spread it.

Do you know what you are purchasing? Compost, mulch, manure, soil conditioners? There is an Australian standard (AS4454) for the supply of these products, and you can request details of the **physical, chemical** and **biological** properties from your supplier. At a minimum you should request:

- Material origin and treatments applied
- Ingredients, including any manures in the blend
- pH, C:N ratio and EC.

Download the AMS fact sheets [Buying in Compost for Orchards](#) and [Making Healthy Compost on the Farm](#).

New **Reef Regulations** have come into effect in QLD requiring **record keeping** of **orchard inputs**. Similar **catchment regulations** are likely in NSW. Ensure you understand the materials being added to the orchard and the nutrients they release.



Heading into winter, **monitor weather conditions** for **frost** and apply **frost protectant** if required, such as stem wrapping and overhead irrigation. The BOM has a dedicated frost potential webpage: www.bom.gov.au/jsp/watl/weather/frost.jsp.

Macadamias are not tolerant to **frost**, while flush damage is recoverable, trunk damage can be fatal.

Many growers in flooded/storm affected regions are wary of **Ethephon** this year, as it is not appropriate for **stressed trees**. Growers are best to assess levels of **stress** in each orchard. In most regions applying **ethephon** should be complete by the **middle of May** (later applications may take place in southern regions). **Ethephon** applied too late can result in **floral inhibition**.

Download the AMS fact sheet [Using Ethephon in Macadamia](#).

The month ahead - start thinking about



Have you finalised your plan for **post harvest management** for the following?

- **canopy management**
- **orchard floor remediation**
- **drainage/water management**

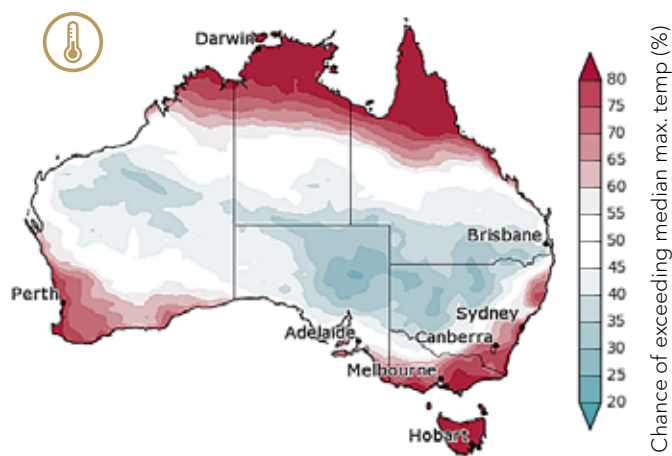
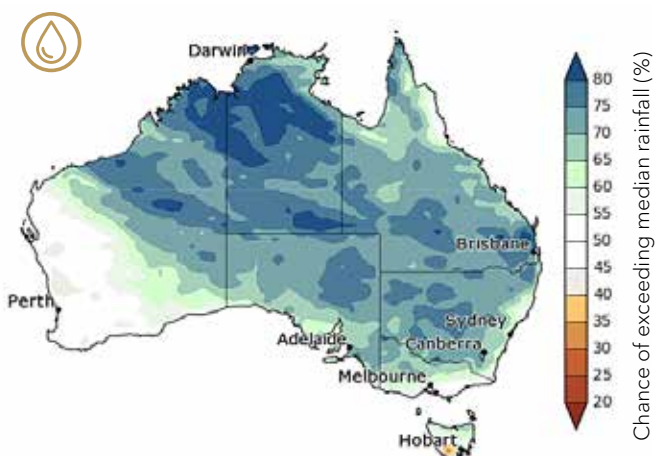
Contractor services book out quickly, particularly with labour shortages, so book early.

Analysis of **consignment reports** is most helpful when done **block by block**. If you are not recording **yield by block**, consider how you could implement this next season. Understanding which trees make most of your **profit** and which are barely keeping the lights on is a critical distinction.

Book a time with your **nutrition consultant** to discuss **leaf/soil analyses** and prepare next season's nutrition program.



BOM rainfall and temperature outlooks for June 2022



Further Information

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



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