



PLANT SAMPLING GUIDE FOR SAP TESTING

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HORTUS
Analytical Solutions

HORTUS PLANT SAMPLING

GUIDE

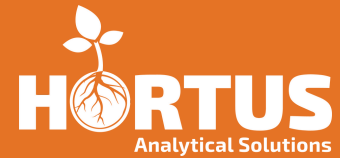


This guide is intended to help ensure that the correct plant part and number of leaves required for a sap analysis are being collected and sent to our laboratory for testing.

This will allow for faster, more accurate testing of your sample, which in turn leads to you receiving your recommendation in the shortest turnaround time.

If you require further information please do not hesitate to call us on (07) 4132 5000 to speak to one of our friendly, knowledgeable staff.

PICK YOUR SAP ANALYSIS



Sap testing can be performed in a few different ways – depending on what you want your results to mean. At the Hortus Analytical Laboratory, we can perform testing according to two different approaches:

1. Sap tests designed for use with QuickSoil tests
2. Sap tests designed for old vs new leaf comparisons

Sap & QuickSoil Analysis

Performed using newly expanded leaves. Combine with a QuickSoil sample to analyse what nutrients are being carried to new leaves along with what nutrients are available in the soil solution in the root zone.

Is designed to give you a snapshot of what nutrients are available in both the plant and root zone and what is being utilised by the plant at the point of sample collection.

This method of testing provides direct testing results of both plant & soil to enable you to assess if nutrients are in excess or deficient in either sample type.

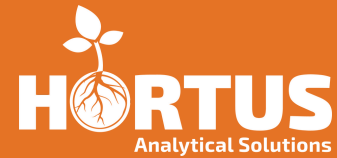
Old Leaf vs New Leaf Analysis

Samples of old leaves and new leaves are collected and a comparison is made between the nutrient levels of each type.

Plants will keep new leaves at optimum nutrition – they will sacrifice old growth for nutrients.

By looking at nutrients that are mobile in plants, you can determine if adequate nutrients are available for storage in old leaves, or if the plant is moving nutrients away from the older leaves (cannibalising itself) to give to the new growth – suggesting inadequate supply.

PLANT SAMPLING



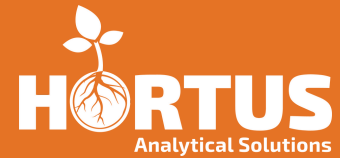
For Sap & QuickSoil Approach

- Select the correct leaf – consult this sampling guide.
- For young or crops with small leaves, a larger sample will be required.
- Select an average representative area in the field for monitoring.
- Select average representative plants – avoid diseased plants.
- Collect enough sample for the minimal amount of sap. Consult manual for leaf numbers.
- Do not mix varieties in the sample as there may be some variation.
- Sample from 8 am – 3 pm, but monitor at the same time each week – CONSISTENCY IS KEY
- Do not sample immediately after rain – note heat or cold stresses.
- Note fertiliser and irrigation times and application rates

For Old Leaf vs New Leaf Approach

- Select the correct leaf – consult this sampling guide
- For young or crops with small leaves, a larger sample will be required
- Select an average representative area in the field for monitoring
- Sample oldest healthy leaf and youngest fully developed leaf, separately
- Leaves must be free from disease
- Do not mix varieties in the sample as there may be some variation
- Sample before 9am for full leaf tension and consistency of results
- Only take samples from dry leaves, or dry with tissue prior to sending to laboratory
- Do not sample immediately after rain
- Note fertiliser, irrigation time, heat or cold stresses

HANDLING & TRANSPORT



- Use plastic bags.
- Collect dry samples.
- Keep cool and “dry” (don’t freeze or sit on dash in direct sun).
- Send via the fastest form of delivery to minimise time in transit.
- Apply “Keep cool and dry” stickers if available.
- Do not over pack- compression will cause deterioration. Send in a box (or ice box) if available
- If sending your sample by Australia Post (express post) send to:

**Locked Bag 3901,
Bundaberg, QLD, 4670 Australia**

- If sending your sample by courier send to:

**Unit 1/5 Scotland St,
Bundaberg East, QLD, 4670
Australia**

ANALYSIS REQUEST FORM



Please fill in all information on the Analysis Request Form (ARF). This can be done online by logging in to the AgPro website using your unique user ID (your email address and a password). Simply register online or contact our office to set up your online profile.

A detailed ARF gives us a better understanding of the growing conditions of your crop and lets us know if you are concerned about specific problems or symptoms and allows us to address these in our recommendations. It also ensures we generate the appropriate optimal level for your particular situation.

The ARF can be completed by logging in to your online account at <https://au.agpro.technology/Login> our preferred and easiest option when submitting your sample.

Alternatively, you can print off and complete a copy of our Chain of Custody form from our website and send this with your sample (data entry charges apply).

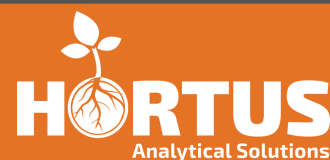


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SAMPLE COLLECTION

IS CRITICAL



Each crop holds a different amount of sap in it's leaves.

Once picked, leaves will begin to dry out and total sap volume will decrease.

Looking at the series of pictures below, you can see that Macadamia leaves contain very little sap - 300 leaves in the sample only contained 5mL of sap.

The more tests that you want on your crop, the more sap we need to do the testing. It is critical that we receive enough leaves to ensure that we can collect enough sap for all of the tests that you require.

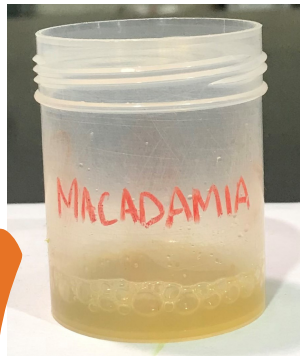
A Differential Sap Analysis Test can be performed using any of the below Sap Tests. When submitting your Sap samples please label each sample (e.g. Old Leaf)

| | | | |
|-------|-------------------|--|----------|
| SAP 1 | BASIC SAP | NO ₃ , S, P, K, Ca, Mg, Cu, Zn, Mn, Fe, B, Na, Mo | 2ML SAP |
| SAP 2 | COMPLETE SAP | NO ₃ , S, P, K, Ca, Mg, Cu, Zn, Mn, Fe, B, Na, Mo, Cl | 4ML SAP |
| SAP 3 | SUPER SAP | NO ₃ , S, P, K, Ca, Mg, Cu, Zn, Mn, Fe, B, Na, Mo, Cl, NH ₄ , Co, Se | 7ML SAP |
| SAP 4 | COMPREHENSIVE SAP | NO ₃ , S, P, K, Ca, Mg, Cu, Zn, Mn, Fe, B, Na, Mo, Cl, NH ₄ , Co, Se, pH, EC, Brix | 10ML SAP |

ANALYSIS REQUEST FORM



Final extracted sap



Original sample - 300 macadmia leaves

