

Soil, Leaf & Fruit Analysis



The Olive Centre Consulting Services

Why Analyse?

A soil analysis program will provide important and essential information on the soils nutritional status, which enables decisions of fertiliser and micronutrient applications to maximise the quantity and quality of crop yields.

A comprehensive measurement of available levels of macro and micronutrients such as nitrogen, calcium, magnesium, potassium, sodium, phosphorus, sulphur, iron, manganese, copper, zinc, boron, molybdenum and chloride in addition to pH, conductivity etc are available to assess the nutritional status of the soil and plant.

It is recommended that a comprehensive soil test regime be performed at least once every 2 years to determine your soils nutritional status. Leaf tests should be performed every year in January. If possible in one year take samples every month to establish a Nutrient usage pattern.

IMPORTANT NOTE: *The importance of plant and soil sampling should never be underestimated. The analysis and interpretation information you will receive is highly dependant on the sampling strategy used. The following information will assist you in collecting appropriate samples prior to submitting them for laboratory analysis.*

What you get...

Once the samples have been analysed by the lab, the results are provided to you in a simple, colour coded format stating: the amount of each nutrient tested, whether this amount is high or low, and whether the amount is desirable.

Using these results, you (in consultation with The Olive Centre or local agronomist) can decide what inputs will be necessary.

Further interpretation of the results, or other consulting services can be provided by our consultant Marcelo Berlanda (OliveTec).

For information about these and other consultation services on offer, please contact us on the below details or see our website.

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PH: 07 4696 9845 FAX: 07 4696 9914
Email: sales@theolivecentre.com.au



www.theolivecentre.com

“Helping you to achieve the maximum from your grove.”

Soil Sampling



Instructions

- Designing your sampling plan

The degree of non-uniformity of soil type present in each paddock will influence your sampling strategy (i.e. sample numbers and locations), so it is important to consider these aspects when establishing your soil-sampling plan.

As a general rule:

Paddocks of up to 10ha in area can be sampled as one unit, providing each field is uniform in terms of soil type, topography, land use, crop variety and fertiliser history.

(Larger paddocks (i.e. greater than 10ha) will generally be less uniform and as such should be subdivided and each part sampled separately.)

You will need a clean auger, hand trowel or spade (preferably chromium plated or of stainless steel) and a plastic bucket.

Individual soil samples should be taken along a carefully planned route across the paddock. The 'W-pattern' sampling plan (right) is adaptable to most shapes of field.

Identify a start position and move way from this point, avoiding all areas which are not representative of the paddock such as fences, hedges, tracks, dung/urine patches etc. We recommend at least 20 samples be taken at regular intervals along this sampling path. Around 20 samples are required even from small paddocks or areas.

At each of the 20 sampling points, remove the top 5cm (2") of soil and discard. Take a sample to a depth of 15cm (6") for arable, or 7.5cm (3") for grassland and place in a bucket. Thoroughly mix all samples with your trowel, avoiding spillage. Fill the provided Phosyn sample bag with soil from the bucket, and seal securely. Label the bag.

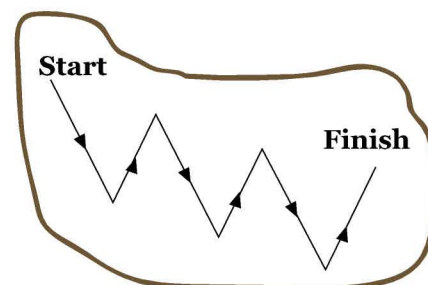
As a general guide, a $\frac{3}{4}$ filled bag will weigh about 500g, which is sufficient for a comprehensive soil test. Remember, that wholesale bulking of samples, especially of different soil types will not allow the identification of problems associated with more localised spots on the paddock. It is recommended that these areas be sampled separately.

For Soil Test - (Code - S4) - Total Soil tests :

PH (H₂O), PH (CaCl₂), EC, S, P, Na, K, Ca, Mg, Al, Cl, Cu, Zn, Mn, Fe, B, NH₄-N, NO₃-N, Organic Matter, Colour, Texture Est' Lime requirement, CEC, Ca/Mg Ratio, % Base Saturation

NOTE - Do not collect samples immediately after lime, gypsum, fertiliser (or other chemical) applications to the soil. Also avoid collection of roots and leaves when collecting soil samples.

NOTE - the sampling depths above are included only as a general guide and you may decide to sample at a deeper level as dictated by the crop root depth.



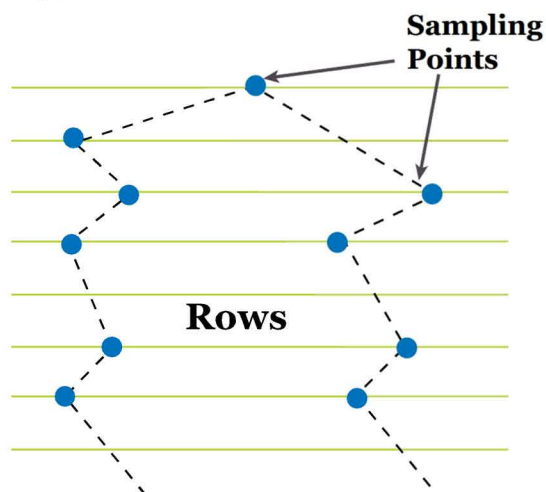
Leaf Analysis

Instructions

As a general rule you should collect the youngest fully expanded leaves available.

General sampling instructions

In designing your sampling plan try to select trees/ bushes etc of the same variety and rootstock along the sampling path. A typical random sampling pattern is shown below.



Exclude pollinators and diseased or otherwise abnormal trees & bushes. Exclude dusty or soil contaminated plants and do not sample fields within 3-5 days after being sprayed with pesticides or foliar nutrients.

IMPORTANT - Unless otherwise advised, please ensure that you send at least about 200g (about 2 handfuls) of fresh plant material for each sample requiring laboratory analysis.

Method:

FOR OLIVES: Collect youngest mature leaf at mid portion of the current seasons non-fruiting laterals (extension growth), taken at shoulder height.

Please state clearly on the analysis request form that the Olive/ Nectarine method of sampling has been used.

FOR Olive Leaf Test - (Code - P3) - Total Crop tests:

N, S, P, K, Ca, Mg, Cu, Zn, Mn, Fe, B, Na, Mo, Cl, NO₃-N

Total Crop is recommended for a comprehensive crop analysis (including grapevine petiole analysis).



Fruit Analysis

Instructions

As a general rule we require around the following quantities of these samples for laboratory analysis:

50 fruitlets or,
20 mature fruit
300g when whole fruit is used

Sampling time is very important. Send fruit as early as possible with a target weight of between 30-50g per fruit, though this will vary with variety.

Select 20 trees/bushes along the sampling path and take one fruit from each of the north, south, east and west sides to give 4 fruit per tree.

Mix the fruit thoroughly & take a random sub-sample of around 50.

Place these in a Phosyn sample, label the bag and submit these for chemical analysis.

Samples should be taken within a fortnight before harvest. Parts of the crop that are known to produce fruit of different storage quality should be sampled separately.

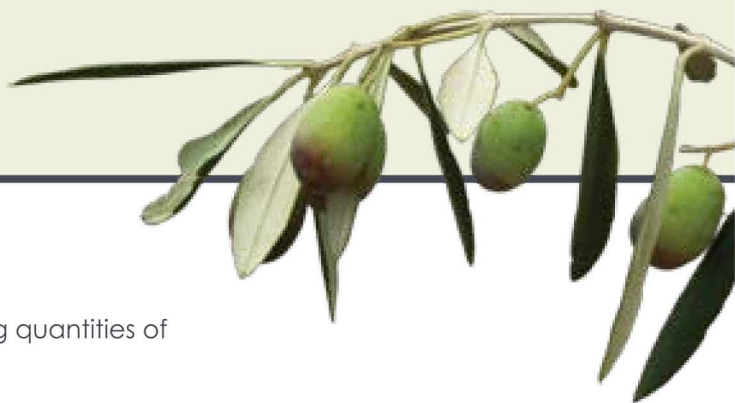
Select 20 trees/bushes along the sampling path and take one undamaged average-sized piece of fruit from each tree. If the first fruit is taken from the north side, take one from the next tree on the east, then from the south and so on.

Send all 20 fruit for chemical analysis.

For Fruit/Fruitlet Test - (Code - P7) - Fruit Tests:

N, S, P, K, Ca, Mg, Cu, Zn, Mn, B

Fruit is recommended for a comprehensive fruit analysis.



Sample Analysis Request Forms

How to fill out ..

When your samples are received into the laboratory, the details on the SAMPLE ANALYSIS REQUEST FORM (please refer to the example below) will be cross-checked with the details noted on your sample bags. This will ensure the required test is performed on each sample as requested and that the correct details relating to each sample will appear on your report.

The Phosyn Analytical SAMPLE ANALYSIS REQUEST FORM provides all the critical information relating to your sample(s).

In order to provide all the critical information, there are four (4) main sections on the SAMPLE ANALYSIS REQUEST FORM which must be completed in full:

- (1) "CLIENT DETAILS (GROWER)"
- (2) "SUBMITTED BY (DISTRIBUTOR/CONSULTANT)"
- (3) "ANALYTICAL REQUEST NUMBER" (e.g. B786432)
- (4) "SAMPLE DETAILS"

SAMPLE ANALYSIS REQUEST FORM

Please send all samples with their request forms to:

Yara Phosyn Ltd Tel: (07) 5588 8778
 P.O. Box 2584 Fax: (07) 5588 9095
 Burleigh Heads Email: phosyn@yara.com.au
 Queensland 4225 Website: www.yaraphosyn.com

ANALYTICAL REQUEST NUMBER **B 3**

CLIENT DETAILS (GROWER)

Name: _____
 Address: _____
 Date: _____
 Phone: _____
 Fax: _____
 Email: _____

SUBMITTED BY (DISTRIBUTOR/CONSULTANT etc.)

Name: _____
 Address: _____
 Date: _____
 Phone: _____
 Fax: _____
 Email: _____

RESULTS TO: (please tick ✓)

	Client	Submitter	Other
Fax	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Email	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

CHARGE TO: Submitter
 Other: _____

Your Purchase Order No. _____
 Authorised Signature: _____

SAMPLE DETAILS (PLEASE ALSO COMPLETE RED IN THE COLUMNS WHEN SENDING PHOTO PICTURE SAMPLES)

LAB SAMPLE REF <small>Other Use Only</small>	CLIENT SAMPLE REF	FARM/BLOCK/BED <small>(at GPS Ref if available)</small>	SAMPLE TYPE <small>(soil, fruit, twigs, other, petiole etc)</small>	CROP DETAILS <small>*Please Specify</small>	GROWTH STAGE <small>*King, Golden Sun</small>	AREA <small>(Ha)</small>	TESTS REQUIRED <small>(See back of form cover)</small>
EXAMPLE	Sample 1	North Parkblock	Leaf	Canola	Non-pink mature leaf	50	P2
A							
B							
C							
D							
E							
F							

Please mark sample bags with the ANALYTICAL REQUEST NUMBER (top right) and call it A, B, C, as appropriate.
IMPORTANT - ENSURE THAT THIS WHITE COPY IS PLACED WITH YOUR SAMPLES.

Some of the information provided on your SAMPLE ANALYSIS REQUEST FORM must also be noted on the allocated areas on the Phosyn Analytical sample bags, specifically:

- (1) Client Name;
- (2) Analytical Request Number
- (3) Lab Sample Reference; and,
- (4) Client Sample Ref.

Send the top (white) completed SAMPLE ANALYSIS REQUEST FORM with your samples to Phosyn Analytical. Please retain the carbon copies (ie. Blue & Pink) for your records. After the analysis is completed, The Olive Centre will forward the report complete with analysis interpretations and recommendations based on the information you have provided.



Additional Notes

The Importance of careful sampling.

The reliability of the results and recommendations of analysis depends ultimately on the accuracy of the very first step, i.e. sampling.

Sampling can be considered in terms of three simple stages: -

1. Taking a representative sample of soil or leaves.
2. Supplying all the necessary field and background information for your samples on the Analysis request forms (particularly for problem areas).
3. Correct packing and immediate despatch to the laboratory.

Do's & Don'ts

DO NOT sample immediately after lime or fertiliser application.

The best time for soil analysis is after harvesting of the previous crop.

DO NOT allow soil contamination of leaves & shoots when sampling.

DO NOT despatch fresh plant material so that it will be in transit during a weekend or public holiday.

DO clean tools and equipment before sampling a new area.

DO provide the maximum amount of background information on problem fields.

DO make sure samples are clearly labelled.

Star Track Express courier satchels (pre-paid)

Please ensure that samples are completely sealed in their individual bags prior to despatch in the Express Courier satchel. For larger scale sampling ie greater than 10 samples, please contact us to arrange courier collection or other delivery options.

Phosyn sample bags

Soil and plant sample bags are provided for your use and they are designed to hold the correct amount required for laboratory analysis. Carefully complete the details on the bag during the collection of samples.

Analysis forms (must be sent with all samples)

These enable all customer and sample details to be sent with the sample to enable the laboratory to log your request. Carefully complete the details on the form during the collection of samples and remember to send the top WHITE copy with your samples. For larger scale sampling (i.e. more than 10 samples), please contact The Olive Centre prior to sampling for a customised request form.

