


**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.**

- Phosyn sample bags are provided for your use with the sample to enable the laboratory to log your request into our system. Carefully complete the details on the form during the collection of samples and remember to send the top WHITE copy with your the collection of samples.
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THESE ENABLE ALL CUSTOMER AND SAMPLE DETAILS TO BE SENT WITH THE SAMPLE TO ENABLE THE LABORATORY TO LOG YOUR REQUEST INTO OUR SYSTEM. CAREFULLY COMPLETE THE DETAILS ON THE FORM DURING THE COLLECTION OF SAMPLES AND REMEMBER TO SEND THE TOP WHITE COPY WITH YOUR THE COLLECTION OF SAMPLES.

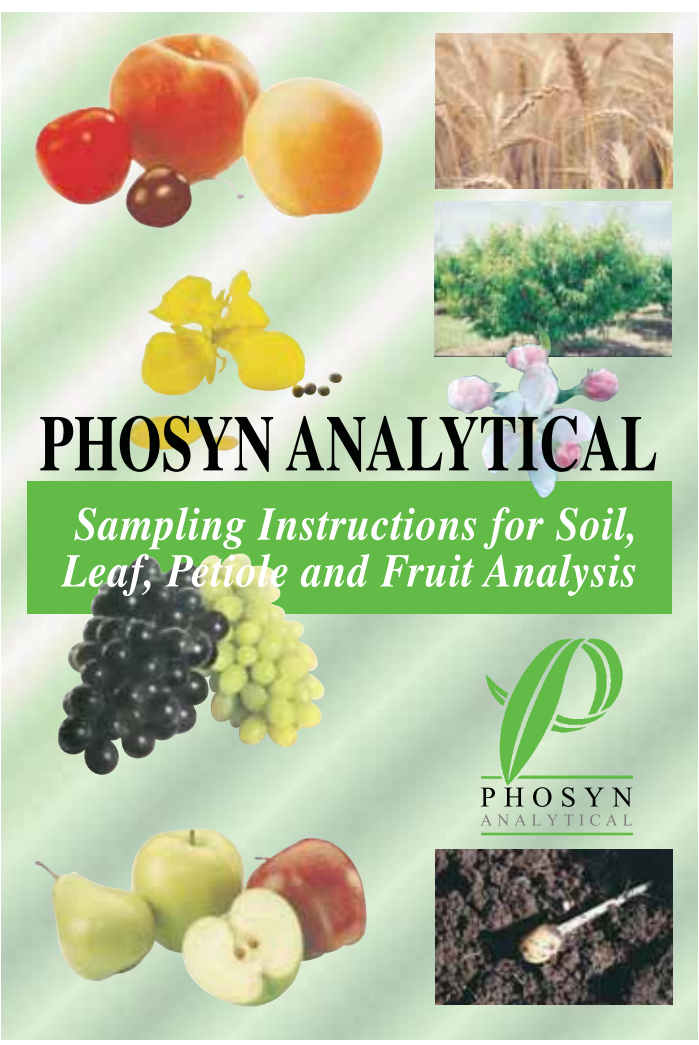
**SAMPLING INSTRUCTIONS FOR SOIL, LEAF, PETIOLE AND FRUIT ANALYSIS**



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**PHOSYN ANALYTICAL**  
*Sampling Instructions for Soil, Leaf, Petiole and Fruit Analysis*

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- **DO NOT** allow soil contamination of plant parts 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 in a new area.
  - **DO** provide the maximum amount of background information of problems with your soil or crop.
  - Above all, **DO** make sure samples are clearly labelled.
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**Why Analysis?**  
 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, phosphorous, sulphur, iron, manganese, copper, zinc, boron and chloride in addition to pH, conductivity etc are available to assess the nutritional status of the soil. It is recommended that a comprehensive soil test regime be performed at least once every 3-4 years to determine your soils nutritional status.

**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.*

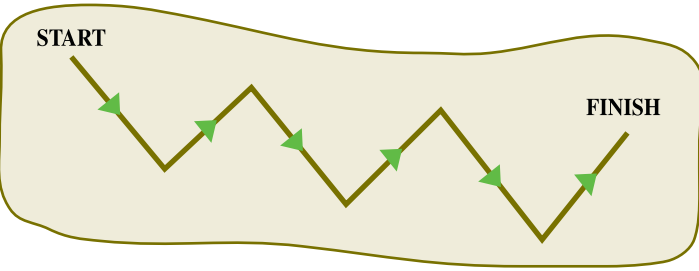
As a general rule:  
 ● Paddocks of up to 10ha in area can be sampled as one unit, providing each field is uniform in terms of soil type, topography, land use, crop variety and fertiliser history.

Identify a start position and move away 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. Please do not exceed the fill line on the sampling bag. 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.

**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.

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



**CROP & PASTURE TISSUE – SAMPLING INSTRUCTIONS**

**PASTURE SAMPLES**      **CROP SAMPLES**

**General sampling instructions**

- Design your sampling plan similar to the W-sampling plan as detailed in the previous section and try to ensure that samples are representative of what your animals are consuming.
- Exclude dusty or soil contaminated plants and do not sample fields within 3-5 days after being sprayed with pesticides or foliar nutrients.

*Given the diversity of plant types and varieties, it is not intended to outline a sampling guide for every specific crop but a sampling guide is detailed overleaf which provides advice for a broad range of crop types. If your crop is not listed, please contact your local distributor or Phosyn representative for more specific sampling instructions and advice. However, as a general rule you should collect the youngest fully expanded leaves available.*

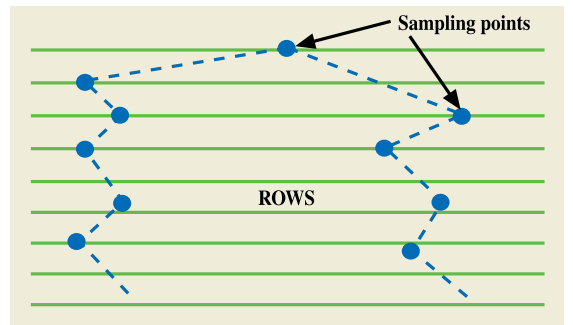
- Using a pair of clean rust-free shears, take around 15 to 20 small handfuls of grass (about 5cm from the ground) from sites throughout the sampling area and combine in the Phosyn sample bag provided. Please avoid contaminating the sample with soil, dirt or chemical residue (drench etc) as this can lead to erroneous results.

**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.

**Note** – The optimum sampling time for pasture samples is generally during the active growing cycle i.e. during the spring or autumn flush.

- Exclude pollinators and diseased or otherwise abnormal trees and 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 200 GRAMS (APPROX. TWO HANDFULS) OF FRESH PLANT MATERIAL FOR EACH SAMPLE REQUIRING LABORATORY ANALYSIS.**



**FRUIT & FRUITLET ANALYSIS**

As a general rule we require approx. the following quantities of these samples for laboratory analysis:  
 ● 30-50 fruitlets or,  
 ● 15-20 mature fruit  
 ● 300g when whole fruit is used (strawberry etc)

random sub-sample of around 30-50. Place these in a Phosyn sample bag, label the bag and submit these for nutrient analysis.

**Fruitlet Samples**

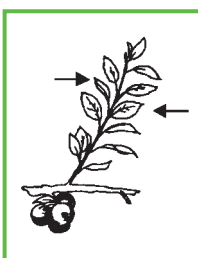
Sampling time is very important. Send fruitlets as early as possible with a target weight of between 30-50g per fruitlet, though this will vary with variety. Select 20 trees/ bushes along the sampling path and take one fruitlet from each of the north, south, east and west sides to give 4 fruitlets per tree. Mix the fruitlets thoroughly and take a

**Fruit Samples**

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 15-20 fruit for chemical analysis.

## FRUITS, VINES AND NUT CROPS

**Apple** – Collect mid-shoot leaves on current season's extension growth from late January to mid February (i.e. mid summer).



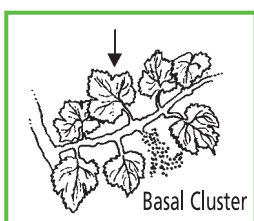
**Banana** – Select the third youngest fully emerged leaf from medium-sized suckers that can be reached from the ground. Take sample strips of lamina from at least 10 plants per block. Collect 20cm wide strips of leaf blade tissue at about half way along the leaf on each side of the midrib.

**Cherry** – Collect youngest mature leaf from the mid section of current season's extension growth.

**Citrus** – Collect 5 to 7 month old spring flush leaves from non-fruiting shoots in February.

**Coffee** – Sample 4th pair of leaves from tip of actively growing fruit branches.

**Grapevine** – Either the petiole (stem of the leaf) or the leaf blade opposite the bunch at the base of the shoot can be sampled, depending on the time of the year and your preference.



**Leaf petiole** – Collect leaf petioles from opposite the basal cluster from exposed shoots on the outside of the vine. Petioles should be separated from the leaf blade immediately after sampling.

**Leaf** – Collect leaf blades only and remove petioles immediately. Sampling again should be from opposite the basal cluster from exposed shoots on the outside of the vine.

**Note: Samples can be taken at pre-flowering, flowering and veraison.**

**Kiwifruit** – Collect the first leaf above the fruit towards the growing point in February in the mid-summer growth stage.

**Macadamia** – Select mature leaf from the second whorl of current seasons growth, avoiding terminals carrying new flushes.

**Mango** – Collect the most recently mature leaf in early spring, just prior to flowering.

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

**Olives** – as for Nectarine.

**Passionfruit** – Collect the youngest fully expanded leaf from well-developed actively growing laterals.

**Peach** – as for Nectarine.

**Persimmon** – Collect the youngest mature leaf from non-fruiting shoots. Sample during late Feb to early March.

## VEGETABLE CROPS

**Brassica** – As a general rule, samples should be collected at mid-growth stage or when the plant is starting to head. For cabbage & cauliflower, sample the youngest mature wrapper leaf from head maturity through to early harvest; For brussel sprout, collect upper leaf at mid-growth stage when the plants are beginning to head; For broccoli, collect youngest mature leaf at mid-growth stage when the curd is starting to form.

**Cucurbits (Cucumber, Rockmelon, Pumpkin, Zucchini, Marrow, Squash etc)**– Collect youngest fully mature leaf with petiole at early flowering.

**Garlic** – Sample youngest mature leaf (without the white) at the bulbing stage.

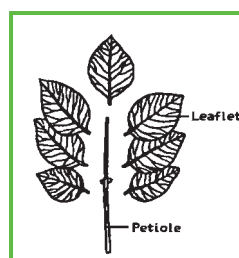
**Legumes (Peas, Beans)** – Collect the youngest fully expanded leaf (minus petiole) at the early vegetative growth stage prior to flowering. (i.e. 6-8 weeks from seeding).

**Lettuce** – Collect the wrapper leaf when the head is approximately half its final size.

**Onion** – Collect youngest mature leaf at the mid-growth stage or 3 - 4 leaf stage.

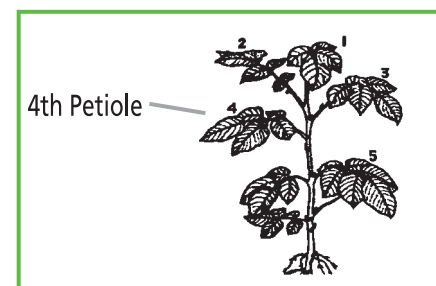
**Potato** – In order to monitor the availability of major nutrients i.e.  $\text{NO}_3$  – N, P, K during the growing season, it is recommended that petiole samples are taken at regular intervals from king tuber length 10mm - 150mm.

**Critical Note: This dimension relates to the tuber length i.e. the distance**



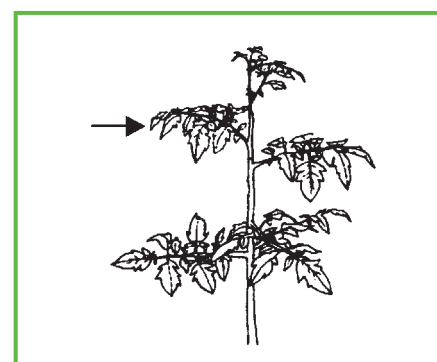
**between the furthest 2 points on the tuber.** Trace element analysis can be carried out at any plant stage, however, it is generally recommended from tuber initiation through to early bulking stage (refer to individual trace element recommendations for optimum application timings).

To collect a petiole sample, select the 4th petiole from the



growing point and immediately strip off the attached leaflets. Each individual sample should be made up of at least 40 individual petioles.

**Tomato** – Collect the youngest mature leaf including the petiole either when the first fruit is mature or at peak harvest.



## TEMPERATE AND TROPICAL CROPS

**Cereals (Canola, Wheat, Sorghum etc)** –

Sampling can be carried out at any growth

stage, but generally the 4-5 leaf stage is recommended, in order that any desired nutritional application can be made at the optimum timing. Sampling of either whole plant, or youngest mature blades can be made,

however for the majority of trace element analysis, i.e. Ca, Mg, Cu, Zn; analysis of youngest mature blades is the more accurate method.



**Please state clearly on the Analysis Request form which method of sampling has been used.**

**Canola** - Youngest mature leaf should preferably be collected at the 4-6 leaf stage and 6-9 leaf stage.

**Note:** If Mo deficiency is suspected (eg historical reasons etc) then it is advised that samples are collected at the 4-6 leaf stage.

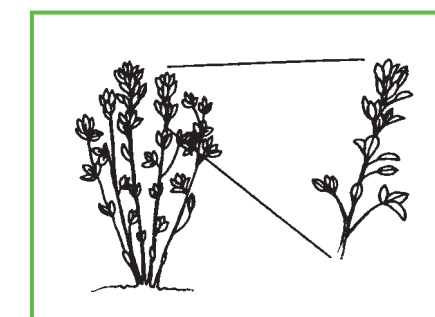
**Cotton** – Sampling at three main growth stages is recommended; namely at the 4-6 leaf stage, at squaring and at flowering.

At each stage, collect two separate samples as follows:

**Leaf** - collect the youngest fully unfolded leaf (100 leaves per sample).

**Petiole** – Detach petioles from the leaf immediately after sampling (200 petioles per sample).

**Pasture (Lucerne/Alfalfa)** – Sample at vegetative growth stages. Collect plant tops from the top 15cm of the plant.



**Lupin** – Collect youngest mature blade during the vegetative growth stage prior to flowering.

**Soy Bean** – Collect youngest mature leaf at the early vegetative growth stage.

**Sugarcane** – A section around 20cm long of the TVD (top visible dewlap – this is approximately the third leaf from the shoot apex) should be collected during the boom phase of growth i.e. when stalk elongation is around 2cm per day.

**Sunflower** – Collect youngest open leaf at early vegetative growth stage (approximately 6 weeks from seeding).