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Sampling Instructions for Soil, Leaf. Petiole and Fruit Analysis



SAMPLING INSTRUCTIONS FOR SOIL, LEAF, PETIOLE AND FRUIT ANALYSIS

ГАВОВАТОВУ SAMPLE PACKAGING AVAILABLE FROM THE

.salqmas top WHITE copy with your and remember to send the the collection of samples details on the form during Carefully complete the request into our system. the laboratory to log your with the sample to enable and sample details to be sent These enable all customer • Analysis Request booklets

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

the collection of samples.

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

previous crop. after harvesting of the best time for soil analysis is tertiliser application. The immediately after lime or • Iqms TON OU •

when sampling. contamination of plant parts lios wolls TON OU

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

a new area. equipment before sampling bns sloot nsolo OU •

your soil or crop. intormation of problems with amount of background DO brovide the maximum

samples are clearly labelled. Above all, DO make sure

> accuracy of the very first step, depends ultimately on the recommendations of analysis I he reliability of the results and

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sample of soil or plant parts. Iaking a representative

problem areas). torms (particularly tor on the Analysis Request information for your samples field and background Supplying all the necessary

Packaging Available). laboratory. (See Sample immediate despatch to the • Cottect packing and

type present in each paddock will influence your sampling strategy (i.e. sample numbers and locations), so it is important to consider these aspects

Designing your sampling plan

when establishing your soil-sampling

• 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

• 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

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.

START

available levels of macro and

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 soil analysis program will

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.

At each of the 20 sampling

sampled separately.



← FOLD OUT TO DISPLAY SAMPLING INSTRUCTIONS

CAREFUL SAMPLING THE IMPORTANCE OF DO'S AND DON'TS

.guilqmas .9.1 The degree of non-uniformity of soil

plan.

history.

bucket.

As a general rule:

micronutrients such as nitrogen, SOIL SAMPLING INSTRUCTIONS

A comprehensive measurement of

Why Analysis?

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

points, take a sample to a depth of 10cm for pastures and most agricultural crops, 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

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



FINISH

CROP & PASTURE TISSUE – SAMPLING INSTRUCTIONS

PASTURE 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.

• 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.

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

CROP SAMPLES

Given the diversity of plant types and varieties, it is not itended to outline a samplin guide for every specific crop but a sampling guide is deta overleaf which provides advice for a broad range of crop type If you crop is not listed, pleas ontact your local distributor Phosyn representative for most provide the second s general rule you should collec 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 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 HAND FULLS) OF FRESH PLANT MATERIAL FOR EACH SAMPLE **REOUIRING 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)

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

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

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



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. NO₃ – 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.



Cereals

(Canola Wheat, Sorghum etc) Sampling be can carried out at any growth mature blades can be made,

however for the majority of trace element analysis, i.e. Ca, Mg, Cu, Zn: analysis of youngest mature

method.

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 recommended; namely at the at flowering.

TEMPERATE AND TROPICAL CROPS



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



blades is the more accurate

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

main growth stages is 4-6 leaf stage, at squaring and 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).