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Technical Note

Cereal Tissue Sampling Protocol

1. Collection of samples – Timing and growth stages

Timing is extremely important as interpretation guidelines are established at specific growth stages for cereal crops. Correct timing is also especially important as some nutrient levels can change fairly rapidly particularly through the early crop emergence stages through leaf expansion etc and any significant differences in time of sampling can lead to variation in the interpretations. If possible avoid sampling after fungicide or nutrient spray applications, as this will contaminate samples.

Phosyn Analytical has specific analytical programs to assist in the nutritional management of the crop through the analysis of plant tissue at key growth stages.

To both manage and monitor the nutritional status of the crop, we recommend that you develop a sampling plan, which features up to 4 individual samplings per block per season. This is necessary to enable the monitoring of the crops nutritional status throughout the season.

As a general rule, we recommend the collection of plant tissue at the following growth stages:

Growth Stage	Approx Zadoks scale	Plant part sampled
4-5 leaf stage	Z14	Youngest mature leaf or whole plant
Mid-Tillering	Z26	Youngest mature leaf
Jointing	Z32	Youngest mature leaf
Early Boot	Z40	Youngest mature leaf

2. Collecting the sample

Sampling can be carried out at any growth stage, but generally the 4-5-leaf stage is recommended as the optimal growth stage in order to check for any nutritional imbalances. Analysis at this 4-5 leaf stage provides an excellent opportunity for the application of nutritional products to correct for any nutritional deficiencies.

NOTE – At the critical 4-5 leaf stage, you will note for practicality of sample collection that we have provided an option for the collection of either whole plant or youngest mature leaf. We have interpretational guidelines for both of these plant parts we have found that for the majority of trace elements, such as copper and Zinc etc, the 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.

- 2.1 Each sample should be taken from a uniform section of the paddock of the same soil type.
- 2.2 At each of the growth stages specified in the previous table, collect the youngest mature leaf or whole plant as directed.

IMPORTANT - When sampling plant tissue, please collect at least 150grams fresh weight (about two handfuls) for analysis.

Complete the details on the analysis request form and please remember to include:

- (a) The Grower details in the Client details field;
- (b) The Distributor details in the Submitted field;
- (c) Current Growth Stage (in the Growth stage column); and
- (d) The contact details (preferably email address) to where we need to send the results.

Please note that the service code for this test is 'P3'.

This should be written in the 'Tests Required' column.

An example of a completed ***Phosyn Analytical*** request form is shown below:

LAB SAMPLE REF Office use only	CLIENT SAMPLE REF	PADDOCK REF (& GPS Ref if available)	SAMPLE TYPE (soil, leaf, fruit, fruitlet, tuber, petiole etc)	CROP DETAILS	GROWTH STAGE	AREA (Ha)	TESTS REQUIRED <i>(See inside of front cover)</i>
EXAMPLE	BLOCK 33	PADDOCK 1	LEAF	WHEAT	4/5 LEAF STAGE	50	P3

For repeat samplings of your paddock throughout the program, please consistently name the 'Client Sample Ref' & 'Paddock Ref' with the same name for each sample from the same paddock. This will enable us to compare data throughout the season should we need to discuss the crop with you.

3. Care of Samples – Collection and despatch

Samples can be contaminated by some fungicides and nutrient sprays, which may give erroneous laboratory results. Wash hands and preferably use the white **Phosyn Analytical** paper bags provided. Avoid the use of plastic bags for plant tissue samples because of moisture condensation and possible breakdown of the samples. Wherever possible, please collect and despatch samples by the first half of the week to ensure that the samples arrive at the laboratory before the weekend. Always mail samples on the same day as they are taken from the paddock.

4. Sample Information

Carefully complete the **Phosyn Analytical Analysis request form** and sample details on the Phosyn paper sample bag. Please remember to indicate the growth stage on the form (see section 2 above) and include the top (white) request form with the samples when mailing to the laboratory for analysis. Please retain the carbon copy for your own information. After analysis is complete, **Phosyn Analytical** will forward the analysis results to you in a report complete with analysis interpretations and recommendations.

For further information contact Phosyn Analytical or your local agronomist/consultant.

Contact details:

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