



CROP NUTRITION MONITORING *NUTRIENT UPTAKE ANALYSIS*

or

TISSUE ANALYSIS

Sampling

Both methods require the correct plant part to be sampled. The crop development stage also has to be identified for both. NU-test® samples should be taken at full turgor. This limits sampling to the morning hours in most cases, or selecting a sampling time that can be consistent throughout the sampling period. After sampling, samples must be kept cool and protected against evaporation. NU-test® samples must arrive in the laboratory within 24-36 hours.

Turnaround time for sample results

NU-test® analyses take less preparation work in the laboratory than tissue tests. Samples have to be processed fresh on arrival. Therefore NU-test® is faster.

References for desirable nutrient levels

Most worldwide references are for tissue analysis. However, some of the references are quite old and will not relate to the current yield levels, varieties and rootstocks. By now a wide range of crop and environment specific NU-test® references exists for Australia and South Africa.

Interpretation

In spite of the amount of available references for tissue analysis, the interpretation of sap analysis is less likely to be incorrect. For a crop that does not follow 'normal' development, references for tissue analysis can be directly misleading. For iron most scientists agree that tissue analysis often shows an inverse relationship to a visible deficiency, whereas nutrient uptake analysis has a positive correlation. Nutrient uptake ratios give an insight into uptake conditions in the root zone at the time of sampling.

Yield and quality

As nutrient uptake test shows the current nutrient status of a crop the odds increase that a treatment has predictable, positive effect on the yield and quality. The effect of a fertiliser application can be easily seen in a subsequent NU-test® result. For growers this is the most important point.

Conclusion

For scientists wanting to calculate total nutrient uptake only tissue analysis can provide the answer. If the research objective is root-uptake, ion antagonism or another physiologically based question, nutrient uptake testing gives a more valuable result. For long cultures with little maintenance, such as forestry, short time variations are of less interest and tissue analysis is the best choice. For agronomists, growers and advisors working with intensely managed crops nutrient uptake analysis is the best tool.