



FACT SHEET

Grape Tissue Testing

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Deficiencies of various nutrients produce characteristic visual symptoms in grapes. Diagnosis of visual nutritional deficiencies can be difficult, especially if more than one element is deficient. Grape tissue analysis allows for a more accurate diagnosis of such problems.

There is some discrepancy among grape growing regions as to what is the most appropriate tissue to be used for testing. Some areas use petioles as the preferred sample, others use the leaves only and still others use both the leaf and petiole together. In Nova Scotia we have chosen the latter course and samples should be collected from opposite the basal flower cluster during the flowering period.

Ideally, samples should be collected on an annual basis and paired comparisons are encouraged - one from normal and one from abnormal conditions.

Procedure for Sampling Vineyards for Grape Tissue Analysis

Results from tissue analysis will only be as good as the sample. It is important that the following procedure be followed closely to ensure a representative sample and good results are obtained.

When to Sample

Anytime during the bloom period, or at veraison.

Fee Schedule per Sample

The Nova Scotia Department of Agriculture and Fisheries lab, located in the Harlow Institute at 176 College Road in Bible Hill, NS provides a foliar analysis service. **For registered farms the cost is \$10.00/sample + HST.** The cost doubles if you do not have a farm registration number.

How to Sample

1. Sample only vines of the same variety and same age.
2. **Location on the vine: Pick leaf + petiole from opposite the first flower cluster toward the base of a new shoot.**
3. Take only one sample from each plant and do not separate leaf + petiole.
4. Size of sample: A random sample of 40-50 leaves + petioles from each variety/site. Use an X pattern whenever possible for sampling each variety and avoid outside rows, vines that have been sprayed with fertilizer, and vines covered with soil dust.
5. Sample preparation: Dry sample and place in identified plastic bags addressed to Analytical Services, Quality Evaluation Division, Nova Scotia Department of Agriculture and Fisheries, P.O. Box 550, Truro, N.S. B2N 5E3

Grape Foliar Nutrient Levels

Nutrient	Possible deficiency below	Standard range	Possible excess above
<u>% Dry Weight (DW)</u>			
Nitrogen (N)	1.50	2.00 - 4.00	4.00
Phosphorus (P)	0.15	0.20 - 0.40	0.60
Potassium (K)	1.00	1.20 - 2.00	2.50
Calcium (Ca)	1.00	1.25 - 2.25	3.00
Magnesium (Mg)	0.15	0.20 - 0.50	0.80
<u>ppm</u>			
Boron (B)	15.00	20 - 40	60.00
Iron (Fe)	50.00	60 - 110	200.00
Manganese (Mn)	150.00	150 - 500	700.00
Copper (Cu)	5.00	5 - 20	50.00
Zinc (Zn)	15.00	20 - 50	80.00

For more information contact:

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***This factsheet is updated from an original article, Nova Scotia Department of Agriculture and Fisheries Information Archives*