Fruit Crop Tissue Sampling Guide

Taking plant tissue samples correctly is the best way to make sure Laboratory Services results will be accurate. Different crops require different sampling times and plant parts to sample. Table 1 shows which growth stage and plant part to sample for fruit crops.

NOTE
It is important to wash soil or debris off when tissue sampling. Wash leaves with water and dry them before placing in paper bags to send to lab.

Table 1.Growth stages and plant parts for fruit crop samples.

CROP	CROP GROWTH STAGE	PLANT PART TO SAMPLE
Low Bush Blueberries	Sprout year - when the crop tips die back (early - mid July)	Strip all the leaves from 90 stems (3 stems from 30 clones) and cut at soil level. Throw away the stems. Do not take the top leaves or the bottom leaves of each stem.
High Bush Blueberries	Before and during harvest	100 leaves from the middle of the current seasons shoots
Strawberries	Fruiting strawberries after renovation (late July- early August) OR Non-fruiting plants in early August	50 fully expanded, recently mature leaves. No petioles (leaf stem)
Raspberries	Late June - early July	Youngest fully expanded leaves on each of 50 random fruiting canes.
Apple trees	End of July - mid August (Once terminal bud has been set)	Healthy leaves near middle of the current seasons growth (10 leaves from ten trees of same cultivar)
Grapes — Spring	Spring, during full bloom (Mid-late June) when two thirds of the flower caps have fallen off.	Petioles (leaf stem) opposite flower clusters, 1 petiole per shoot. Discard the leaves.
Grapes— Veraison	Mid July - mid-August when grapes begin to soften and colour	Petioles from the most recently matured leaves, 5-7 leaves from the shoot tip. Sample each variety separately. Vines should be the same age. Discard the leaves.
Cranberries	Late summer (Aug 15 - Sept 15)	Leaves above berries on the current seasons fruit- bearing uprights or from the upper 5 cm of growth on non-fruiting uprights. Need 200 uprights in total throughout the bed. Do not include berries.

NOTE
When sampling grapes and blueberries, it is recommended to ask for sulfur analysis in additiion to the Plant Tissue Analysis—T1 (Standard Package)

Table 2. Fruit crop sufficiency table

CROP*	N %	P %	K %	Ca %	Mg %	B ppm	Zn ppm	Cu ppm	Mn ppm	Fe ppm
Low Bush Blueberries	1.6-2.0	0.12-0.22	0.4-0.9	0.27-0.52	0.13-0.25	24-60	25-50	7-14	750-1490	50-100
High Bush Blueberries	1.5-2.5	0.1-0.4	0.3-0.8	0.2-0.7	0.1-0.25	20-70	10-50	5-20	50-350	40-150
Strawberries	2.0-3.0	0.2-0.5	1.5-2.5	0.5-1.5	0.25-0.5	20-60	15-100	--	20-200	25-200
Raspberries	2.0-3.5	0.2-0.5	1.0-2.0	0.8-2.5	0.25-0.5	20-60	15-100	5-20	20-200	25-200
Mature Apple & Pear trees	1.9-2.4	0.15-0.26	1.2-1.6	1.0-1.6	0.2-0.28	20-40	15-40	4-50	25-200	50-400
Peach	3.0-4.0	0.15-0.30	1.3-1.8	1.0-2.0	0.35-.50	20-40	15-40	--	25-200	50-400
Plum & Cherry	2.4-3.4	0.15-0.30	1.3-1.8	1.0-2.0	0.35-0.50	20-40	15-40	--	25-200	50-400
Grapes-Spring	1.6-2.5	0.16-0.60	1.5-4.0	0.4-1.5	0.2-0.4	25-50	20-100	5-10	20-150	40-180
Grapes-Veraison	0.9-1.3	0.13-0.4	1.5-2.5	1.2-1.8	0.26-0.45	25-50	30-50	5-15	30-150	30-100
Cranberries	0.9-1.10	0.10-0.20	0.40-0.75	0.30-0.80	0.15-0.25	15-60	15-30	4-10	› 10	› 20

Lowbush Blueberries; Trevett Standards 1972, Highbush Blueberries; AgraPoint, Nova Scotia, 2007, Strawberries and Raspberries; Ontario Ministry of Agriculture,2003 Apples; D. Webster, AAFC Kentville 1980's Stone Fruit; modified by AgraPoint from Temperate Zone Pomology by Westwood, Grapes; University of Minnesota, Cranberries; Cranberry Tissue Testing for Productivity Beds in North America, J Davenport

There are a number of Crop Sufficiency Tables that are available from various jurisdictions. Most crop sufficiency ranges are similar. If you use a different Sufficiency Table, be sure to sample at their specific growth stage.

Blueberry plant – include leaves

Strawberry plant – recently expanded mature leaves

Apple branch – leaves from middle and end of branch

Cranberries – leaves above berries on the current seasons fruit-bearing uprights

Grapes – petioles from the most recently matured leaves with 5 to 7 leaves from the shoot tip

LAB CONTACT INFORMATION

For more information contact Lab Services at
labs@perennia.ca
www.perennia.ca/labservices