THE TENDER FRUIT GRAPE VINE

A Newsletter for Commercial Fruit Growers

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Fruit Tree Leaf Analysis

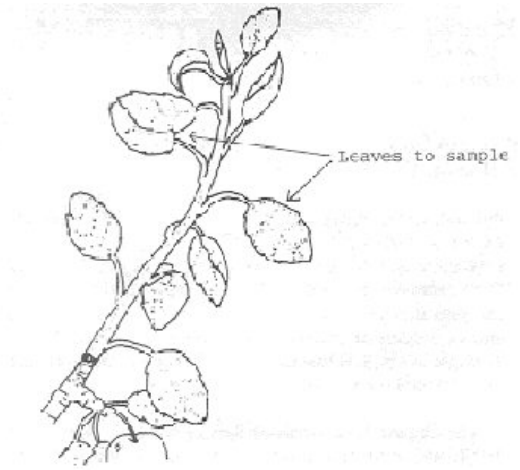
Peter Zwart, Plant Nutrition (Hort.),OMAFRA

The last 2 weeks of July is the time to take leaf samples from your fruit trees. Foliar sampling is generally the most reliable tool for assessing the nutrient status of orchards. It gives you an idea of actual nutrient uptake and can reveal deficiencies that might not have any other symptoms. It's not too late to correct deficiencies for many nutrients in fruit trees with foliar sprays. Leaf sampling also gives you the luxury of confidently doing nothing if all is well.
If nutrient levels in an orchard are known to be stable and fertility management practices are unchanged, sampling every two to three years is sufficient. However, if there are known deficiencies or nutrient management practices are changed, sampling should be done every year until foliar nutrient levels are stable and any deficiencies are corrected.

The samples are taken from shoulder-height, mid-shoot leaves of this year's growth that are fully mature as shown in the picture.

Avoid damaged, abnormal and spur leaves as well as those that are not fully expanded. Approximately 10 leaves from all sides of a tree can be taken from 10 trees to give a total sample of 100 leaves. If your orchard is variable you can break it up into logical management units to sample separately if practical. Otherwise, you could take fewer leaves from more trees to get your 100 leaves. Different varieties have different critical nutrient levels and should be sampled separately. Try to avoid collecting leaves from trees at the outer edges of the orchard. Put the leaves into a labeled paper bag to keep them clean and bring them to an accredited lab. Standard analysis includes N, P, K, Ca, and Mg. If micronutrient excesses or deficiencies are suspected, these can also be analysed at an extra cost. A list of labs with prices can be found on page 280 of Publication 360 and online at
http://www.omafra.gov.on.ca/english/crops/resource/leaf.htm.

One of the more common nutrition problems found in Ontario orchards is nitrogen level, excesses being more common than deficiencies. Another common one is K excesses or deficiencies. Excess K can lead to Mg deficiency. Zinc, Manganese, and Boron deficiencies are found in isolated cases. Any of these problems can be found by leaf analysis, and most can be corrected in-season with foliar sprays. The cost of analysis is offset many times over by savings in fertilizer costs or increases in yield and/or quality.



Editors note - **Grape samples** should be collected by **September 1st** and sent to the lab of your choice from the list of accredited labs. With grapes, only the stems (petioles) of the leaves are selected from mature leaves or bearing grapes. Do not collect young or over-mature leaves. Collect 100 stems for each sample. A good random sample usually requires sampling several rows of grapes in the block.

Samples should be placed in paper bags marked with sample number, name, address, variety and age of tree or grape vine.

Part 4: Improving Weed Management in Young Trees (Late Summer/Fall)

Leslie Huffman, Weed Management Specialist (Horticultural Crops), OMAFRA

In the last 3 issues, we have explored 8 different tactics to manage weeds in the first orchard year. By late summer, we often see weed escapes and some problem areas that need attention. Here are 3 more suggestions to help reduce and manage weeds in young trees:

- **Control weed escapes as needed:** Where residual herbicides were applied, a 2nd application is usually needed after 8 to 12 weeks. Where no residual herbicides are used e.g. using Gramoxone, flaming or tillage, weed escapes will need to be controlled every 2 to 4 weeks. Avoid tree trunks with these treatments, especially if the bark is green. Plastic tree guards can help avoid drift problems but don't give 100% safety. Using glyphosate is not recommended on first year trees as it can be absorbed through the bark. Gramoxone can also damage green bark trees, especially stone fruits. Grass herbicides like Poast or Venture can be safely applied on tree trunks, and Basagran + Assist or Lontrel are registered on first year trees in Canada for broadleaf weeds.
- **Spot treat perennial weeds:** Investing in spot treatment equipment like a hand sprayer, wick wiper, hand flamer and/or herbicide dripper/selector may be the best use of your money. Be sure to also invest some time in walking and treating patches of weeds. For directed glyphosate treatments, wait for the most sensitive stage of the weed and apply the high rates listed on the label for perennial weeds.
- **Fall orchard cleanup:** Annual fall applications of 2,4-D at a postharvest timing will reduce many broadleaf weeds, and are safe in the fall of planting year. Spot applications of glyphosate on quackgrass are very effective in the fall – but care is needed to avoid tree trunks.

It's been a busy year, establishing a new orchard, and weeds have likely given you a challenge every month along the way. Remember that your goal is improved tree growth, which will result in earlier yields and better fruit size. These last final touch-up steps will set your orchard up for reduced weed problems next spring and in the following years.

Whiney about Viney Weeds?

Leslie Huffman, Weed Management Specialist (Horticultural Crops), OMAFRA

It's that time of year – when viney weeds start creeping up and over anything they can get a hold on –trees, windbreaks, trellises, corn stalks and crops in general.

To help identify which viney weed is climbing over your plants or trees, first look to see if the stem is woody or herbaceous (but be careful – it may be poisonous!)

If you have a woody vine, here are 3 likely candidates**:**

Weed	**Plant habit**	**How to identify**
Poison ivy 	Perennial, woody vine Spread by seed or rhizome 2 forms: ground-hugging or climbing All parts poisonous Noxious weed	"Leaves of three, let it be" Stalk on middle leaf Oak-like leaves with much variability, smooth margins Dry, white fruit Red leaves in fall
Virginia creeper (5-leaf ivy) 	Perennial, woody vine Spread by seed Climbing woody vine Poisonous berries Common garden plant	Usually five leaflets, but sometimes 3 or 4 Toothed margin No leaf stalks Soft, blue fruit Red leaves in fall
Wild grape 	Perennial, woody vine Spread by seed (birds)	Single leaves, typical grape shape Tendrils Dark fruit in bunches

Control of these woody vines is a challenge, depending on where they are climbing. Cutting the vines at ground level and treating the fresh cut with glyphosate or 2,4-D + oil is a good start. Avoid herbicide contact with desirable plants.

If the stems are herbaceous, here are 4 candidates:

Weed	Plant habit	How to identify
Field bindweed 	Perennial, herbaceous vine Spread by seed or extensive roots Grows in patches Common in fields, lawns and roadsides	Small arrowhead-shaped leaves Extensive roots Trumpet flowers, 1” Bracts on flower stem, but not touching flower No sheath at node
Wild buckwheat 	Annual, twining stem Grows over plants, trees, vines Spread by seed (birds) Large seed production Common in cultivated fields	Arrowhead-shaped leaves, larger than field bindweed; Sheath (ocrea) at node Taproot Small, green flowers
Hedge bindweed 	Perennial Trailing or twining stems Spread by seeds or rhizomes Usually on field borders or natural areas	Extensive root system Arrowhead-shaped leaves, up to 6” long; Trumpet flowers up to 3” 2 large bracts at base of flowers
Ground ivy (creeping Charlie) 	Perennial Spread by seed or creeping stems Thickly covers low plants Common in lawns (survives mowing) Problem in perennial crops	Square stem Opposite leaves Blue/purple flowers Mint-like odour Round leaves may be confused with mallow (which is not creeping)

Wild buckwheat is the only annual weed, easily identified by its small taproot and inconspicuous flowers. It can be controlled by cultivation and most soil-applied herbicides (unless it is germinating late).

Field and hedge bindweed are more difficult to control. A systemic herbicide like glyphosate can be used at the higher rates, and is most effective when weeds are in full flower and actively growing (which doesn’t always happen in hot, dry summers). Repeat treatments over several years are required.

Ground ivy (creeping Charlie) can also be controlled with spot applications of the higher rates of systemic herbicides like glyphosate or amitrole. In turf, it is very difficult to control. Tank-mixes of 2,4-D/mecoprop/dicamba can be applied in early June or September and repeat treatments are required.