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Citrus Leaf Nutrient Analysis: leaf sampling guide

February 2016 Primefact 1449 first edition
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Sampling the correct leaf for analysis is important. Sampling the incorrect leaves provide a misleading indication of the orchards nutritional status and fertiliser recommendations will be inappropriate.

Leaf analysis interpretation charts were developed in USA in the early 1960's to 80's. The interpretation chart was developed sampling numerous orchards of known health and cropping performance. Results from the higher productive orchards were used to develop the optimum leaf nutrient standards currently used in leaf analysis interpretation charts.

The leaves picked to develop this standard were 4 to 7 month old fully expanded leaves from non-fruiting terminals. The leaves from the middle part of the flush are selected and for simplification these are often described as the 3rd and 4th leaf of these shoots. These leaves are picked late summer to early autumn or from late February to mid-March in Australia. Leaf analysis guides from USA continue to advise leaf samples to be taken in this period. Four to seven month old fully expanded leaves would have emerged from spring flush in the August to September period.

Identifying the correct leaf can be confusing. By late autumn numerous flushes are on the tree. It is important to pick the spring flush only as picking leaves from other flushes will provide an incorrect data set for interpretation.

The correct leaf to pick is from spring flush shoots. These leaves are of medium size, are narrower and have a pointed appearance compared to leaves from other growth flushes. The narrow and pointed appearance is the easiest way to identify spring flush shoots. These leaves grow during mild/cool spring conditions and thus do not grow as broad and as large as the summer flush leaves.

Figure 1: Spring flush shoots taken in February. Notice the pointed shapes of the leaves. Leaves from the middle part of the flush are sampled (i.e. 3rd and 4th leaf – red arrow)

Figure 2: WRONG LEAF - This is a recent young expanding flush. Notice the light colour and glossy appearance of the leaves.

Figure 3: WRONG LEAF - This is a summer flush. Summer flushes emerge during warm to hot conditions where leaf expansion is rapid. This results in a large oval/round shaped leaf.

Figure 4: WRONG LEAF - This is a late spring/early summer flush. These leaves are confusing because they are in the transitionary period between a spring and a summer flush. These leaves are often confused for a spring flush because they seem to be the correct colour.

Figure 5: CORRECT LEAVES - This is typical of a spring flush. Notice the medium sized leaf and the narrow and pointed appearance. It is the narrow and pointed appearance that is the major determining factor in identifying spring flush shoots.

Sampling tips

To get an idea of the shape of a spring flush leaf look at the leaf directly behind a fruit. This leaf is a spring flush leaf however it is usually smaller in size than non-fruiting spring flush shoots.

A way to train yourself to pick spring flush is tag spring shoots with flagging tape in early October. In February you can use these tagged shoots as a reference.

Figure 6: Tagging shoots in spring can help you identify spring flush when sampling leaves in autumn

When sampling leaves for leaf analysis stand back at least 1.5m from the tree and scan the tree looking for shoots with leaves of pointed appearance. Scan for shoots that are within the tree because sometimes spring flush shoots can be covered by the more recent summer flush. Do not procrastinate in trying to find a suitable flush on just one tree, if you are unable to spot such a shoot keep on moving to the next tree. Sampling leaves for the first time can initially be a slow frustrating process, but within a short period of

practice you should be able to quickly spot out the spring flush within seconds from scanning a few trees.

More information

A video on leaf sampling and leaf selection is available on the NSW DPI Citrus Nutrition web page.

For updates go to
www.dpi.nsw.gov.au/factsheets

ISSN 1832 6668

RM8: INT16/12924