



Sampling Notes

To ensure maximum yields of quality nectarines, plant nutrients must be maintained at optimum levels. The nutritional status of nectarines is monitored using soil tests and plant analysis. Annual monitoring or crop logging is important to help sustain optimum levels and avoid nutritional disorders. If disorders do occur, rapid diagnosis is necessary to assist correction.

Leaf

Sampling Time: January and February.

Plant Part: Youngest mature leaf (blade & petiole).

Collect From: Mid portion of the current season's non-fruiting laterals (extension growth), taken at shoulder height.



Quantity per Sample: 4 representative leaves from the periphery of each of 25 trees.

Recommended Tests: Basic Plant (BP).

Comments: To help diagnose an obvious problem, leaves showing the first signs of the distinctive symptoms should be collected as soon as abnormalities appear. If sampling outside the normal sampling time it is useful to take a second sample of similar, healthy leaves from nearby unaffected trees for analysis as a comparative standard.

Soil

Sampling Time: Prior to crop establishment and annually at any time of the year, although autumn to early winter is recommended.

Core Depth: 15cm.

Collect From: From the drip zone of the trees.

Quantity per Sample: 12 - 20 cores from under trees selected at random from throughout the block.

Recommended Tests: Basic Soil (BS).

Comments: Separate samples should be taken from blocks that differ in age, cultivar types, tree performance, soil types, topography and fertiliser history.

Where fertiliser has been broadcast, sample from the drip zone of the trees. Where fertiliser has been banded, samples should only be taken from areas under the drip zone which have previously received fertiliser.

If the orchard has herbicide treated strips, then it is best if these are sampled separately from the grassed areas between rows. Quite different nutrient levels may exist between these two areas.

When sampling prior to orchard establishment, a 15 - 40 cm depth sample should also be taken, primarily to check the sub-soil pH.

Interpretation

Interpretation of the laboratory's results is possible by comparison with normal levels expected for the crop in question. The interpretation given is based on the best information available and relate specifically to the sampling instructions given.

Leaf			Soil		
Analyte	Unit	Range	Analyte	Unit	Range
Nitrogen	%	3.0 - 3.5	pH	pH	6.0 - 6.5
Phosphorus	%	0.14 - 0.25	Olsen Phosphorus	mg/L	15 - 35
Potassium	%	2.0 - 3.0	Potassium	me/100	0.50 - 1.0
Sulphur	%	0.20 - 0.40	Calcium	me/100	6.0 - 12
Calcium	%	1.8 - 2.7	Magnesium	me/100	1.0 - 3.0
Magnesium	%	0.30 - 0.80	Sodium	me/100	0.0 - 0.50
Sodium	%	0.0 - 0.10	CEC	me/100	12 - 25
Iron	mg/kg	60 - 250	Volume Weight	g/mL	0.60 - 1.0
Manganese	mg/kg	40 - 160			
Zinc	mg/kg	20 - 50			
Copper	mg/kg	5.0 - 16			
Boron	mg/kg	20 - 60			

Comments

Fruit quality may be improved if nitrogen is kept at the lower end of the normal range.

Boron deficiency for most stonefruit is more obvious in fruit than foliage, with nectarines being less susceptible than most other stonefruit. Symptoms include small and abnormal fruit with internal necrotic patches.

Conversely, nectarines are more sensitive to boron toxicity than other stonefruit. Except for old and non-fruiting trees, this crop has the ability to translocate boron from the leaves to the fruit and bark, so that leaf boron levels remain normal and the classic boron toxicity symptoms of marginally yellowed or burned leaves are consequently not observed. In extreme cases there is thickening of leaves, corkiness along the midribs and petioles, enlarged nodes, bark necrosis and death of the shoot tips. Boron toxicity problems can arise in newly planted areas that were previously in apples and where boron had been applied.

Stonefruit will grow best within a soil pH range of 6.0 - 6.7. At lower pH, root growth and tree health are adversely affected by aluminium and manganese toxicity. At higher pH, trace element deficiencies can be induced.

It has been suggested that the soil potassium level should be 3-4% of the CEC. Calcium should occupy 70-80% of the CEC sites and magnesium, 10-15%.

Like all stonefruit, nectarines prefer well draining soils.

References

- Leece, D.R. 1976. Journal of the Australian Institute of Agricultural Science, March, pp 3-19.
 Fertiliser recommendation for horticultural crops. HortResearch HortNET, 1997.
 Blackmore, L.C; Searle, P.L and Daly, B.K. 1987. Methods for chemical analysis of soils. NZ Soil Bureau Scientific Report 80. NZ Soil Bureau, DSIR.
 Reuter, D. J. and Robinson, J. B. (Eds) 1997. Plant analysis. An interpretation manual. Second edition.

Disclaimer

Normal Range levels quoted relate specifically to the sampling procedure given. The Normal Range levels and Comments provided are the most up to date levels available, but may be altered without notification. Such alterations are implemented immediately in the laboratory histogram reports. It is recommended that a consultant or crop specialist be involved with interpretations and recommendations.