Hill Laboratories
BETTER TESTING BETTER RESULTS

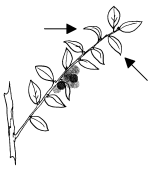
Crop Guide
Blueberry

KB Item: 3435v2

Sampling Notes

The nutritional status of blueberries is monitored using soil tests and plant analysis. Annual monitoring 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:	From three weeks prior to and during the first week in which 35% of the crop is harvested.
Plant Part	Youngest mature leaf (blade & petiole).
Collect From:	Current season's fruiting shoots.
Quantity per Sample:	5 representative leaves from each of 10 plants.
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 plants 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 root zone of the bushes.
Quantity per Sample:	12 - 20 cores.
Recommended Tests:	Basic Soil (BS), Sulphate S (SO4), Available Nitrogen (AN).
Comments:	Soil samples are usually collected for analysis prior to planting the crop. If trickle irrigation is used, the wetted zones of the soil should be sampled separately, as minerals in the water may produce abnormal test levels. If trying to diagnose a problem with crop growth and yield, samples should be collected from the rooting zones of the worst affected plants. In these circumstances, a second sample taken for comparative purposes from the rooting zones of normal plants may be useful.

CROP GUIDE BLUEBERRY

Interpretation

Interpertation 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

Analyte	Unit	Range
Nitrogen	%	1.8 - 2.1
Phosphorus	%	0.12 - 0.40
Potassium	%	0.35 - 0.65
Sulphur	%	0.13 - 0.20
Calcium	%	0.40 - 0.80
Magnesium	%	0.12 - 0.25
Sodium	%	0.0 - 0.050
Iron	mg/kg	60 - 200
Manganese	mg/kg	50 - 350
Zinc	mg/kg	8.0 - 30
Copper	mg/kg	5.0 - 20
Boron	mg/kg	30 - 70

Soil

Analyte	Unit	Range
pH	pH	4.0 - 5.0
Olsen Phosphorus	mg/L	15 - 25
Potassium	me/100	0.50 - 0.80
Calcium	me/100	3.0 - 10
Magnesium	me/100	0.80 - 3.0
Sodium	me/100	0.0 - 0.50
CEC	me/100	12 - 30
Volume Weight	g/mL	0.60 - 1.0
Sulphate Sulphur	mg/kg	20 - 50
Available Nitrogen	kg/ha	100 - 150

Comments

Possibly the most important soil test for blueberries is the pH. The optimum pH range is 4.0 - 5.0, although higher and lower pH soils can support growth. The low pH requirement is in part due to blueberries being inefficient utilisers of iron. At the low pH, a greater amount of iron is plant available for it to draw on. Furthermore, at this pH, nitrogen is present as ammonium rather than nitrate. Blueberries prefer the ammonium form.

Consequently, the most common deficiencies encountered are those of nitrogen and iron.

Nitrogen deficiency shows as a gradual reddening of the whole leaf. Young shoots from the base of the plant tend to be pink at first and then pale green.

Young leaves show symptoms of iron deficiency as interveinal chlorosis. The symptoms are easily confused with those of manganese deficiency, which can be differentiated by the wider band of green tissue around the veins.

Boron and zinc deficiencies have also been reported in New Zealand. Boron deficiency causes small, distorted and blueish-green shoot tip leaves. In more severe cases, shoot dieback becomes quite prominent.

References

Doughty, C. Horticulturist, Washington State University. Pers Comm.

Ballinger, W.E.and Goldstone, E.F. 1967. North Carolina, Agric. Expt. Tech. Bulletin, No. 178.

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.

Disclaimer