AgVista

Water – Substrate Monitoring BLUEBERRY

Water / Substrate Parameters for Blueberry				
	Ideal	**High (Low)**	**Likely Negative**	**Remedy**
EC (dS/M) Drip	0.2-0.4 (water) 0.4-1.0 (solution)	0.7-1.0 Water 1-1.3 (solution)	1.0-1.5 >1.5 (solution)	Reduce Fertiliser injection. RO
EC (dS/M) Drain	1.5-2.5	>2.5	>3	Increase Water flush. Flush with no fert, more frequent shifts, higher drain %
pH Drip (solution)	4.5-5.5	5.5 - 6.6	>6.6	Acidify water feed
pH Drain	3-4	<2.5 or >5.8	<2 or >6.5	Add Ammonium or KOH
Bicarbonate (HCO3) (ppm)	<40	90	>120	Acidify water
Boron (B) (ppm)	<1.0	1.2-1.6	>2.0	Alternate water
TDS (total disolved Solids) ppm	<250	250-300	>350	More fresh water
Sodium (Na) (ppm)	<30	>46	>100 *	Alternate water, Use gypsum.
SAR (sodium Abs Ratio)	1 or below Hydro can tolerate - <3.0	6-8 **	>8	Alternate water Use Gypsum. Watch K nutrition
Manganese (Mn) ppm	<0.5	0.5-1.0	1.0-2.0	Increase pH. Aerate water. Cation exchange Resin
Iron (Fe) ppm	0.2-0.3	0.4-0.5	>0.5	Aerate water / tower. Cation exchange resin
Calcium (Ca) ppm	40-80	120-150	>150	Acidify water
Magnesium (Mg)	8-16	25-30	>50	Acidify water
Chloride (Cl)	<70	70-120	>120	Alternate water – RO -reduce ec of feed
Nitrate N (NO3)	<70	70-120 ***	>120	RO – alternate water. Reduce feed NO3
Ammonium – N (NH4)	5-10	10-15	>15	Reduce feed mix NH4

Drain EC / pH is a reflection of both feed / Drip EC / pH and the relative transpiration of the plant.

A healthy growing plant with a high water demand will cause pH to drop and EC to rise in drain water.

* Sodium >100 may be tolerated where all other water conditions are ideal and high drain % are possible

** SAR may be managed with drainage and cation nutrition.

***Nitrate and chloride should be added together as the cumulative EC from both are equally as damaging.

Ref: Retemales, Wilk & Ireland, Strik, Spectrum analytical, Voogt, Smith etal, Doyle pers. Comms