



Knowledge grows



Yara Analytical Services  
Technical Bulletin

# Water Quality Parameters and Guidelines

Element	*Drinking Quality Guideline	Notes relating to irrigation guidelines	Irrigation Guidelines (max)
Calcium - Ca (mg/l)	250	Generally good if high to offset Na potential problems	400
Magnesium - Mg (mg/l)	50	Again counteracts negative Na effects.	250
Manganese - Mn (mg/l)	0.05	Usually only traces found	1 - 10
Boron - B (mg/l)	2	Fruit and nut trees generally bean, cereal, potato, roots, most vegetables, beet, palms	1 - sensitive crops 2 - 4 semi tolerant 2 - 8 tolerant
Copper - Cu (mg/l)	3		1
Molybdenum - Mo (mg/l)			0.01
Aluminium - Al (mg/l)	0.2		
Lead - Pb (mg/l)	0.05		
Fluoride - F (mg/l)	1.5		
Iron - Fe (mg/l)	0.2	In high pH will colour water red	5
Zinc - Zn (mg/l)	5		2 - 4
Sulphur - S (mg/l)	83.3		150
Phosphorus - P (mg/l)	2.2		
Potassium - K (mg/l)	12	No real guide but in desert every 5 ppm like a bag of SOP in typical wheat season	
Nitrate - NO <sub>3</sub> (mg/l)	11.3	High levels will cause over vigorous crops	8.5
Ammonia - NH <sub>4</sub> (mg/l)	0.5		30
Nitrite - NO <sub>2</sub> (mg/l)	0.1		
Sodium - Na (mg/l)	150		See EC and SAR
Chloride - Cl (mg/l)	400	General guide. Fruit trees more sensitive than beans. cereals, vegetables, root, beet etc more tolerant	350 ppm > 500 ppm may scorch
Bicarbonate - HCO <sub>3</sub> (mg/l)		Precipitates out Cal and may increase risk of high SAR	520
Electrical Conductivity (mmhos/cm)	1.5	<0.25 Low, <0.75 Med, <2.25 High, <2.25 Very High	1
Electrical Conductivity (µS/cm)	1500	<250 Low, <750 Med, <2250 High, >2250 Very High Same sort of tolerance as Cl and B. Med OK for most, at high fruit suffers, Tolerant may cope with 4-6 mmhos/cm. Sandy soil structure can collapse	1
Sodium Adsorption Ratio - SAR		Leads to poor soil permeability and high pH build up	10
pH	5.5- 9.5		
Total Alkalinity - T Alk (mg/l)	30 min		
Total Hardness - T Hard (mg/l)	60 min		
Biochemical Oxygen Demand - BOD (mg/l)	5		
Turbidity	4		
Coliforms	0 or non found		
E Coli	0 or non found		
Total Viable Count @ 22°C - TVC @ 22°C	0 or non found		
Total Viable Count @ 37°C - TVC @ 37°C	0 or non found		

\*Drinking water guidelines come from the Water Supply (Water Quality) Regulations 1989 and represent Maximum Admissible Concentration or in the case of pH an Optimum Range.

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