Table 2 LABORATORY DETERMINATIONS NEEDED TO EVALUATE COMMON IRRIGATION WATER QUALITY PROBLEMS

Water parameter	Symbol	Unit[1]	Usual range in irrigation water
SALINITY			
Salt Content			
Electrical Conductivity	EC_w	dS/m	0 - 3 dS/m
(or)	3 dS/m. ≡ 3,000 µS/cm.		
Total Dissolved Solids	TDS	mg/l	0 - 2000 mg/l
Cations and Anions			
Calcium	Ca^{++}	me/l	0 - 20 me/l
Magnesium	Mg^{++}	me/l	0 - 5 me/l
Sodium	Na^{+}	me/l	0 - 40 me/l
Carbonate	CO_3^{--}	me/l	0 - .1 me/l
Bicarbonate	HCO_3^{-}	me/l	0 - 10 me/l
Chloride	Cl^{-}	me/l	0 - 30 me/l
Sulphate	SO_4^{--}	me/l	0 - 20 me/l
NUTRIENTS[2]			
Nitrate-Nitrogen	NO_3-N	mg/l	0 - 10 mg/l
Ammonium-Nitrogen	NH_4-N	mg/l	0 - 5 mg/l
Phosphate-Phosphorus	PO_4-P	mg/l	0 - 2 mg/l
Potassium	K^{+}	mg/l	0 - 2 mg/l
MISCELLANEOUS			
Boron	B	mg/l	0 - 2 mg/l
Acid/Basicity	pH	1-14	6.0 - 8.5
Sodium Adsorption Ratio[3]	SAR	(me/l)[1,2]	0 - 15

[1] dS/m = deciSiemen/metre in S.I. units (equivalent to 1 mmho/cm = 1 millimmho/centimetre)

mg/l = milligram per litre ≃ parts per million (ppm).

me/l = milliequivalent per litre (mg/l ÷ equivalent weight = me/l); in SI units, 1 me/l = 1 millimol/litre adjusted for electron charge.

[2] NO_3-N means the laboratory will analyse for NO_3 but will report the NO_3 in terms of chemically equivalent nitrogen. Similarly, for NH_4-N, the laboratory will analyse for NH_4 but report in terms of chemically equivalent elemental nitrogen. The total nitrogen available to the plant will be the sum of the equivalent elemental nitrogen. The same reporting method is used for phosphorus.

[3] SAR is calculated from the Na, Ca and Mg reported in me/l (see Figure 1).