

Critical values reported in the literature

No	Element	Exchangeable elements		
		Critical level	Extraction Method	References
1	K (mg/kg)	< 60 low	1M NH ₄ -acetate	Doberman and Fairhust, 2000
		60-175 medium		
		> 175 high		
2	Mg (mg/kg)	< 240 low		Doberman and Fairhust, 2000
		240 - 730 medium		
		> 730 high		
3	Mo (mg/kg)	0.2-0.5	1M NH ₄ -acetate	Nayyar et al., 2008
4	P (mg/kg)	< 5 low	Olsen P	Doberman and Fairhust, 2000
		5 - 10 medium		
		> 10 high		
5	Cu (mg/kg)	0.2 – 0.3*	DTPA + CaCl ₂ extraction pH 7.3	Doberman and Fairhust, 2000
6	Zn (mg/kg)	0.6 -0.8*	1N 1M NH ₄ -acetate pH 4.8	Doberman and Fairhust, 2000
		0.8*	DTPA method	
		0.1*	0.05N HCl	
		1.5*	EDTA methods	
		2*	0.1N HCl	
7	Fe(mg/kg)	<4.0 - 5.0*	TPA+ CaCl ₂ , pH=7.3	Doberman and Fairhust, 2000
8	Mn (mg/kg)	1*	TPA+ CaCl ₂ , pH=7.3	Doberman and Fairhust, 2000
		12	1N NH ₄ -acetate 0.2% hydroquinone, pH=7	Doberman and Fairhust, 2000
		15-20	0.1N H ₃ PO ₄ 3N NH ₄ H ₂ PO ₄	Doberman and Fairhust, 2000
9	Na	NA		
10	As	NA		
11	Cd	NA		
12	Pb	NA		
13	Al (µg/kg)	NA		
14	Co (µg/kg)	NA		
15	pH	< 5.5	1:5 soil:water extracts	Bandara, 2005 Rosemary et al., 2017
		5.5 - 6.5		
		> 6.5		
16	EC (dS/m)	<0.15 very low salinity	1:5 soil: water extracts	Dharmakeerthi <i>et al.</i> , 2007
		0.15 - 0.4 low salinity		
		0.4 - 0.8 medium salinity		
		0.8 - 2.0 high saliniyu		
		> 2 very high salinity		

(NA= not available); *values for the occurrence of deficiency



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Dharmakeerthi, R. S., Indraratne, S. P. & Kumaragamage, D. (2007). Manual of soil sampling and analysis. Special publication no. 10, Soil Science Society of Sri Lanka

Dobermann A., Fairhurst T. (2000). Rice Nutrient disorders and nutrient management 1st edition, pp. 203. Potash and Phosphate Institute (PPI) and International Rice Research Institute (IRRI).

Nayyar, V. K., Arora, C. L., & Katak, P. K. (2008). Management of soil micronutrient deficiencies in the rice-wheat cropping system. *Journal of Crop Production*, 4(1), 87–131.

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