LOAMY SAND OVER POORLY STRUCTURED CLAY

General Description: *Thin to medium thickness loamy sand to light sandy loam over a reddish poorly structured clay, calcareous with depth*

Landform: Gently undulating dunefield.

Substrate: Sandy light clay (clayey phase of Tertiary Parilla Sand Formation).

Vegetation: -

Type Site: Site No.: MM152

1:50 000 sheet:	6927-3 (Jabuk)	Hundred:	Price
Annual rainfall:	400 mm	Sampling date:	04/04/02
Landform:	Depression in swale of dunefield		
Surface:	Soft with very few ironstone fragments		

Soil Description:

Depth (cm)	*Description*
0-9	Dark brown loose light sandy loam. Sharp to:
9-10	Yellowish red loose loamy sand. Sharp to:
10-28	Yellowish red hard medium clay with coarse prismatic structure breaking to subangular blocky. Abrupt to:
28-43	Brown hard light clay with subangular blocky structure and many fine carbonate segregations. Clear to:
43-65	Yellowish red massive fine sandy light clay with olive yellow mottles and many fine carbonate segregations. Gradual to:
65-105	Reddish yellow massive sandy light clay with brownish yellow mottles and many fine carbonate segregations. Diffuse to:
105-150	Olive yellow massive sandy light clay with light grey mottles and a few fine carbonate segregations.

Classification: Sodic, Calcic, Red Chromosol; medium, non-gravelly, sandy /clayey, moderate

Summary of Properties

Drainage: Imperfectly drained. The clayey subsoil is only slowly permeable, and the landscape setting is low-lying, so water is likely to perch on the subsoil clay for several weeks following heavy or prolonged rainfall.

Fertility: Inherent fertility of the sandy topsoil is moderately low to low. The clayey subsoil has moderate to high inherent fertility. Sulphur and copper levels are marginal, but the data indicates that concentrations of other tested nutrient elements are satisfactory.

pH: Acidic to neutral at the surface, strongly alkaline in the lower subsoil.

Rooting depth: Few roots below 43 cm in the pit.

Barriers to root growth:

Physical: The coarsely structured and slightly dispersive upper subsoil is a barrier to roots.

Chemical: High pH and low nutrient status, especially in the lower subsoil limit root growth.

Water holding capacity:

Topsoil:	Approx. 110 mm/m over 0.1m	= 11.0 mm
Subsoil:	Approx. 180 mm/m over 0.33m	= 59.4 mm
Total	Approx. 70 mm (moderately low to moderate) in effective root zone.	

Seedling emergence: Good.

Workability: Good.

Erosion potential:

Water: Low.

Wind: Moderate. The loose sandy surface is susceptible to wind erosion when bare.

Laboratory Data

Depth cm	pH H_2O	pH $CaC1_2$	CO_3 %	EC1:5 dS/m	ECe dS/m	Org.C %	Avail. P mg/kg	Avail. K mg/kg	SO_4-S mg/kg	Boron mg/kg	Trace Elements mg/kg (DTPA)				CEC cmol (+)/kg	Exchangeable Cations cmol(+)/kg				ESP
											Cu	Fe	Mn	Zn		Ca	Mg	Na	K	
Paddock	6.3	5.9	0.1	0.08	0.97	1.13	30	270	4.8	1.1	0.28	73	4.91	1.44	6.81	5.00	0.96	0.18	0.67	2.6
0-9	7.9	6.7	0.1	0.10	0.57	1.64	41	310	5.2	1.1	0.31	58	4.38	5.25	7.86	5.81	1.15	0.13	0.77	1.7
9-10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10-28	7.8	7.1	0.2	0.10	0.47	0.32	4	190	2.6	1.2	0.09	15	0.77	0.13	12.1	7.87	3.45	0.33	0.45	2.7
28-43	8.6	7.9	6.7	0.13	0.57	0.21	3	106	2.2	1.5	0.04	9.8	0.66	0.12	15.7	11.2	3.96	0.31	0.24	2.0
43-65	8.9	8.1	7.7	0.11	0.50	0.10	2	68	3.9	1.3	0.04	4.3	0.69	0.08	11.8	8.36	2.97	0.28	0.14	2.4
65-105	9.4	8.4	6.8	0.17	1.02	0.06	2	108	6.9	2.0	0.08	3.6	0.52	0.37	11.6	6.73	3.51	1.12	0.27	9.6
105-150	9.6	8.6	1.8	0.23	1.19	0.01	2	131	7.9	2.9	0.09	3.8	0.33	0.27	10.2	4.81	3.44	1.60	0.32	15.7

Note: Paddock sample bulked from cores (0-10 cm) taken around the pit.

CEC (cation exchange capacity) is a measure of the soil's capacity to store and release major nutrient elements.

ESP (exchangeable sodium percentage) is derived by dividing the exchangeable sodium value by the CEC.