

FINE SANDY LOAM OVER BROWN CLAY

General Description: *Brown sandy loam, bleached in lower part, with ironstone gravel, over brown mottled weakly prismatic heavy clay*

Landform: Gently undulating plain

Substrate: Pliocene clay - Parilla Sand Formation equivalent.

Vegetation: -



Type Site: Site No.: SE089

1:50,000 sheet: 7024-2 (Hynam)

Hundred: Grey

Annual rainfall: 550 mm

Sampling date: 14/10/04

Landform: Level plain

Surface: Firm with no stones

Soil Description:

Depth (cm)	Description
0-30	Dark brown massive fine sandy loam with a few medium size sandstone fragments. Many roots. Abrupt change to:
30-38	Brown massive light fine sandy loam with 55%, 6-20 mm size ironstone gravels. Many roots. Clear change to:
38-50	Pale brown (bleached) massive light fine sandy loam with 10% fine ironstone grit size gravel. Few roots. Sharp break to:
50-60	Greyish brown and weak red mottled massive heavy clay. Sharp change to:
60-90	Yellowish brown and yellowish red mottled heavy clay with weak prismatic structure (100-200 mm breaking to 20-50 mm). Dark staining on ped faces. Few ironstone concretions. Clear change to:
90-150	Yellowish brown massive heavy clay. Few veins of soft carbonate.



Classification: Bleached-Ferric, Hypocalcic, Brown Chromosol; thick, non-gravelly, loamy/clayey, very deep

Summary of Properties

Drainage: Imperfectly drained. Impeded drainage at the top of the clayey subsoil results in seasonal perched watertable for periods of up to several weeks following heavy or prolonged rainfall.

Fertility: Inherent fertility is low in the sandy loam surface layers, but is moderate in the clayey subsoil. Phosphorus levels are adequate for broad-acre uses, but potassium levels are low. Copper concentrations are low. The ironstone gravel causes phosphate fixation.

pH: Slightly acidic in the surface grading to moderately alkaline below 60cm.

Rooting depth: 50 cm in pit.

Barriers to root growth:

Physical: Dense massive clay restricts roots below 60 cm.

Chemical: There are no apparent chemical barriers to root growth.

Water holding capacity: Approx. 70 mm in top 50 cm.

Seedling emergence: Satisfactory provided that surface condition remains soft.

Workability: Perched watertable creates boggy subsurface conditions in wet winters.

Erosion Potential

Water: Low

Wind: Low

Laboratory Data

Depth cm	pH H ₂ O	pH CaCl ₂	CO ₃ %	EC 1:5 dS/m	ECe dS/m	Org.C %	Avail. P mg/kg	Avail. K mg/kg	Cl mg/kg	SO ₄ -S mg/kg	Boron mg/kg	Trace Elements mg/kg (EDTA)				Sum cations cmol (+)/kg	Exchangeable Cations cmol(+)/kg				Est. ESP
												Cu	Fe	Zn	Mn		Ca	Mg	Na	K	
0-30	6.8	5.8	0.4	0.04	0.31	1.0	40	60	7	8.2	0.5	0.7	159	13.0	23.1	4.8	4.2	0.4	0.1	0.1	1.3
30-38	7.1	6.4	0.3	0.03	0.14	0.4	28	52	3	2.1	0.3	0.6	140	4.4	7.6	2.9	2.5	0.3	0.0	0.1	1.0
38-50	7.2	6.7	0.4	0.05	0.12	0.3	25	120	3	2.0	0.4	0.3	139	1.7	1.0	5.9	4.6	1.0	0.1	0.2	0.9
50-60	7.2	6.6	0.5	0.07	0.15	0.5	6	334	7	3.0	1.3	0.5	55	0.4	2.9	19.9	13.4	5.5	0.2	0.8	1.0
60-90	7.8	7.2	1.5	0.11	0.14	0.2	5	364	5	5.8	2.0	0.4	29	0.3	20.8	21.5	13.8	6.5	0.3	0.9	1.4
90-150	8.3	7.7	11.8	0.17	0.29	0.4	4	300	8	6.0	3.5	0.3	15	0.3	2.8	21.4	13.3	6.9	0.5	0.7	2.3

Note: Sum of cations, in a neutral to alkaline soil, approximates the CEC (cation exchange capacity), 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, in this case estimated by the sum of cations.