

SAND OVER FRIABLE SANDY CLAY LOAM

General Description: *Thick sandy surface soil with a bleached subsurface layer over a friable brown sandy clay loam, usually calcareous with depth, sometimes with a calcrete pan*

Landform: Rises associated with sandhill-swale land or relict coastal dunes.

Substrate: Tertiary sands or calcarenite

Vegetation:



Type Site: Site No.: SE032

1:50,000 sheet: 6825-4 (Santo)

Hundred: Santo

Annual rainfall: 500 mm

Sampling date: 24/03/95

Landform: Lower slope of undulating rise on a relict coastal dune, 6% slope

Surface: Soft with no stone

Soil Description:

Depth (cm)	Description
0-10	Dark greyish brown soft loamy sand. Clear to:
10-20	Dark greyish brown and pale brown speckled soft light loamy sand. Abrupt to:
20-33	Very pale brown (bleached) soft sand. Sharp to:
33-60	Very pale brown soft sand with orange clay infilled biopores. Sharp to:
60-80	Brown and orange friable sandy clay loam with weak prismatic structure. Clear to:
80-94	Brown and yellow friable massive clayey sand. Sharp to:
94-100	Hard calcrete pan. Abrupt to:
100-180	Pink very highly calcareous clayey sand. Diffuse to:
180-240	Reddish yellow very highly calcareous clayey sand.



Classification: Eutrophic, Petrocalcic, Brown Sodosol; thick, non-gravelly, sandy / clay loamy, moderate

Summary of Properties

Drainage	Well drained. The soil is never likely to be saturated for more than a day.
Fertility	Natural fertility is moderately low, as indicated by the CEC values. This is due to the low clay content. Organic matter essential for nutrient retention capacity at the surface. Data indicate that phosphorus is low and potassium, boron and sulphur are marginal.
pH	Neutral at the surface, strongly alkaline with depth.
Rooting depth	94 cm in pit. Very few roots penetrate the calcrete.
Barriers to root growth	
Physical:	Sheet calcrete
Chemical:	High pH below 80 cm, generally low fertility levels.
Water holding capacity	Approximately 80 mm in root zone.
Seedling emergence	Good to fair, due to water repellence.
Workability	Good.
Erosion Potential	
Water:	Low.
Wind:	Moderate due to sandy water repellent surface.

Laboratory Data

Depth cm	pH H ₂ O	pH CaCl 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	6.9	6.5	0	0.12	0.93	1.4	12	109	10	0.5	-	-	-	-	5.1	5.31	1.11	0.19	0.23	3.7
0-10	6.3	5.5	0	0.07	0.75	1.6	10	56	8	0.5	-	-	-	-	4.5	4.14	1.00	0.14	0.15	3.1
10-20	6.3	5.3	0	0.04	0.43	1.4	10	70	7	0.4	-	-	-	-	3.9	3.37	0.89	0.13	0.17	3.3
20-33	7.5	6.9	0	0.04	0.38	0.2	<4	49	4	0.2	-	-	-	-	2.1	1.40	0.52	0.09	0.10	4.3
33-60	8.1	7.2	0	0.02	0.25	0.1	<4	29	3	0.3	-	-	-	-	1.8	1.23	0.43	0.10	0.09	5.6
60-80	8.1	7.1	0	0.19	1.78	0.4	<4	188	15	1.8	-	-	-	-	9.8	4.73	3.22	0.92	0.55	9.4
80-94	9.3	8.0	0	0.25	2.36	0.2	<4	177	37	1.8	-	-	-	-	7.5	3.21	2.09	1.84	0.46	24.5
94-100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
100-180	9.9	8.6	24.5	0.25	1.72	0.3	<4	100	38	1.0	-	-	-	-	3.3	2.01	1.47	1.02	0.31	30.9
180-240	10.0	8.6	7.0	0.29	2.07	<0.1	<4	73	32	1.3	-	-	-	-	3.3	1.60	1.79	1.02	0.18	30.9

Note: Paddock sample bulked from 20 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.