

Proposed by F.R. Moormann, 1963
Revised by :
Vijarnsorn and staffs, 1988
W. Sirichuaychoo, 2004

WAN PRIANG SERIES

Field Symbol: Wp

Distribution: Occupies a small extent in Northern Peninsular Thailand.

Setting: Wan Priang soils are formed from marine sediment and occurred on former tidal flats. Relief is level. Slopes is less than 1 percent. Elevations is less than 5 m above mean sea level. The climate is Tropical Monsoon (Koppen 'Am') or Tropical Savanna (Koppen 'Aw'). Average annual precipitation is from 1,800 to 3,000 mm. Average annual air temperature is from 26 °C to 28°C.

Drainage, Permeability and Surface Runoff: Drainage is poorly drained, permeability is estimated to be slow and surface runoff is slow. Surface flooding by impounded rainwater up to 1 meter for 4 to 5 months. The groundwater level rarely falls below 1 meter.

Vegetation and Land Use: Most of the areas are under marsh grass, reeds and low shrubs. Parts are used as natural pasture during the dry season and transplanted rice is grown in some areas.

Characteristic Profile Features: Wan Priang series is a member of the siliceous, isohyperthermic Typic Psammaquents (soil taxonomy, 2003). They are very deep sandy soils and are characterized by a dark grayish brown loamy sand surface or A horizon overlying on olive gray, gray or light gray loamy sand C horizon. A layer of shell fragments occurs in the subsoil within 1 meter of the soil surface and increases in amount with depth. Yellowish and brownish mottles occur throughout the profile and as coating along root channels in the A horizon. Slightly acid to neutral, reaction values range from 6.5 to 7.0 over neutral to moderately alkaline, reaction values range from 7.0 to 8.5.

Typifying Pedon: Wan Priang loamy sand - paddy field, Ban Thanon Kraphao, Tambon Neon Kho, Amphoe Klaeng, Changwat Rayong, 2 m above mean sea level, less than 1 percent slopes (sheet name Amphoe Klaeng, sheet number 5349 III, coordinate: 884045).

Profile Code Number: S-58/35, SE-16/35, described by Sumeth Chauchoti, 17 March 1976 (moist colors unless otherwise stated).

Horizon Depth (cm)	Description
Apg 0-29	Dark grayish brown (10YR4/2) loamy sand; common fine distinct dark brown to brown (7.5YR4/4) mottles; weak coarse and fine subangular blocky structure breaking to single grain; friable, nonsticky and nonplastic; many fine and medium roots; slightly acid (field pH 6.5); abrupt smooth boundary.
ACg 29-46/66	Light gray (10YR7/2) loamy sand; common fine distinct strong brown (7.5YR5/6) root mottles; very weak subangular blocky structure breaking to single grain; friable, nonsticky and nonplastic; many fine and medium roots; moderately alkaline (field pH 8.0); clear irregular boundary.
Cg1 46/66-110/120	Light gray (10YR7/2) loamy sand; many very coarse distinct yellowish brown (10YR5/8) mottles; very weak fine and coarse subangular blocky structure breaking to single grain; friable, nonsticky and nonplastic; common fine roots; common shell fragments; moderately alkaline (field pH 8.0); clear smooth boundary.
Cg2 110/120 ⁺	Greenish gray (5BG5/1) and light gray (10YR7/2) loamy sand; common fine distinct dark brown to brown (7.5YR4/4) mottles; few fine roots and few decay roots; strongly alkaline (field pH 8.5).

Type Location:

Name of village, Ban Na Wan Priang, Tambon Sam Roi Yot, Amphoe Pran Buri, Changwat Prachuap Khiri Khan.

Range of Profile Features:

The surface or A horizon loamy sand is 10 to 20 cm in thickness and has 10YR hues, values 3 to 5, chromas 1 or 2. Sandy loam texture may occur in this horizon. Structure is weak and moderate fine and medium blocky. Moderately acid, reaction values ranges from 6.0 and 7.0.

The C horizon has loamy sand or sand and normally has 10YR hues, values 3 to 5 and chromas 1 or 2, but may range to 5Y. The latter hue has values 4 to 6 and chromas 2. Structure is weak blocky or massive. Neutral to slightly alkaline, reaction values ranges from 7.0 to 8.0.

Similar Soil Series:

Samut Prakan series (Sm): fine, smectitic, nonacid, isohyperthermic Fluvaquentic Endoaquepts, has a greenish clay within 150 cm from the soil surface and below the cambic B horizon, few shell fragments may occur but below 1 meter from the soil surface.

Principal Associated Soils:

These include Samut Prakan, Tha Chin and Hua Hin series. Tha Chin soils occupy lower positions in tidal flats close to the sea and are high in salinity. Hua Hin soils are sandy soils of beach and dune ridges. Samut Prakan soils are listed as similar soil series.

Tha Chin series (Tc): fine, smectitic, nonacid, isohyperthermic Sodic Hydraquents.

Hua Hin series(Hh): isohyperthermic, coated Typic Quartzipsamments.

ANALYSIS RESULTS (oven dry basis)

Profile code No.: SE-16/35
Soil series: Wan Priang series (Wp)

Lab No.	Depth (cm)	Horizon	Particle size distribution analysis (% by weight)							Texture		pH		CaCO ₃ %	P, mg kg ⁻¹ Bray 2	K, mg kg ⁻¹ NH ₄ OAc	
			USDA grading			Sand-fraction grading				Lab	Field	1:1	1:1				
			sand	silt	clay	vc	c	m	f	vf	result	estim ⁿ	water				KCl
Pg-631	0-29	Apg	85.1	13.9	1.0						ls	ls-sl	5.3	4.5	0.0	2.3	185
Pg-632	29-46/66	ACg	91.4	4.8	3.8						s	ls-s	6.2	6.1	0.0	0.8	150
Pg-633	66-110/120	Cg1	93.6	3.6	2.8						s	ls-s	6.9	7.2	3.9	4.0	215
Pg-634	110/120+	Cg2	95.4	3.3	1.3						s	ls	6.5	7.2	3.0	6.5	28

Depth (cm)	Air dried to oven dried	C %	N %	Exchange capacity and cations (cmol ₍₊₎ kg ⁻¹)								Base satur ⁿ (%)		ECEC cmol ₍₊₎ kg ⁻¹ (B+D)	Al KCl extr. cmol ₍₊₎ kg ⁻¹ (D)	Electrical conduct ^y (ECx10 ⁶) dS m ⁻¹
				Ca	Mg	K	Na	SUM cations (B)	Extr. acidity (A)	SUM (B+A)	CEC NH ₄ OAc (C)	CEC 100g Clay	B/Cx100			
0-29	1.6	0.95		2.50	1.40	0.10	1.70	5.70	2.30	8.00	5.6	560.0	100	71		1.72
29-46/66	1.9	0.10		1.70	0.70	0.10	1.50	4.00	0.20	4.20	2.2	57.9	100	95		0.39
66-110/120	0.2	0.09		15.20	1.20	0.10	1.60	18.10	0.30	18.40	1.2	42.9	100	98		0.29
110/120+	0.2	0.23		15.50	2.10	0.10	1.60	19.30	0.00	19.30	1.1	84.6	100	100		0.54

Surveyor: S Chauchoti

Reported by: W. Sirichuaychoo

Date: March 17, 1976

Date: Nov. 20, 1998