

Proposed by F.R. Moormann, 1973
Revised by :
P. Vijarnsorn and staffs, 1988
W. Sirichuaychoo, 2004

PHATTAYA SERIES

Field Symbol: Py

Distribution: Occupy a small extent in Southeast Coast of Thailand.

Setting: Phattaya soils are formed from beach sand on beach ridge, sandy sediments derived largely from granite and quartzite. Relief is nearly level to gently undulating topography which slope range from 1 to 5 percent. Elevation ranges from 1 to 10 m above sea level. The climate is a seashore climate. Average annual precipitation is 1,300 mm Average annual air temperature is 27°C.

Drainage, Permeability and Surface Runoff: Drainage is excessively drained, permeability is rapid and surface surface is slow to medium.

Vegetation and Land Use: Mainly used for dry land crops such as cassava, bananas, pineapples and castor beans.

Characteristic Profile Features: The Phattaya series is a member of the isohyperthermic, coated Typic Quartzipsamments (soil taxonomy, 2003). They are very deep sandy soils and are characterized by a dark grayish brown, dark brown or grayish brown loamy sand surface or A horizon overlying light yellowish brown or pink sand upper C horizon which inturn overlies a yellowish brown or reddish yellow or strong brown sand lower C horizon. Sand fraction mainly consists of coarse sand. Moderately acid to neutral, reaction values range from 6.0 to 7.0 throughout the profile.

Typifying Pedon: Phattaya sand - coconut, water melon and castor bean cultivation, from Amphoe Si Racha, on right side of Sukhumvit road to Phattaya, Changwat Chon Buri, 10 m above mean sea level, less than 2 percent slopes (sheet name King Amphoe Ko Si Chang, sheet number 5150 II).

Profile Code Number: SE-15/17, described by M. Singhawara and W. Chanchai, 22 June 22, 1973 (moist colors unless otherwise stated).

Horizon Depth (cm)	Description
A 0-20	Brown to dark brown (10YR4/3) loamy medium sand; structureless to single grains; loose, nonsticky and nonplastic; many fine and medium interstitial pores; many very fine roots; slightly acid (field pH 6.5); clear smooth boundary.
C1 20-45	Pink (7.5YR7/3) loamy medium and coarse sand; structureless to single grains; loose, nonsticky and nonplastic; many medium interstitial pores; common very fine, few fine and few medium roots; moderately acid (field pH 6.0); gradual smooth boundary.
C2 45-150	Reddish yellow and strong brown (7.5YR5-6/6-8) loamy medium and coarse sand; structureless to single grains; loose, nonsticky and nonplastic; many medium interstitial pores; many fine and common medium roots; moderately acid (field pH 6.0).

Type Location:

Name of beach, Phattaya beach, Amphoe Si Racha.

Range of Profile Features:

The surface or A or Ap horizon coarse sand or loamy coarse sand, is from 10 to 20 cm in thickness and has 10YR or 7.5YR hues, values 3 to 5 and chromas 2 to 4. Structure is single grain or very weak granular. Very strongly acid to neutral, reaction values range from 5.0 to 7.0.

The subsoil or C horizon coarse sand or loamy coarse sand has 10YR or 7.5YR hues, values 5 to 7 and chromas 4 to 8. Structure is single grain. Very strongly acid to slightly acid, reaction values range from 5.0 to 6.5.

Similar Soil Series:

Hua Hin series (Hh): isohyperthermic, coated Typic Quartzipsamments, contain shell fragments in the profile.

Bacho series (Bc): isohyperthermic, coated Typic Quartzipsamments, less coarse sand fraction content.

Rayong series (Ry): isohyperthermic, uncoated Typic Quartzipsamments, strongly leached quartz sand and has paler color in the subsoil.

Principal Associated Soils:

These include Sattahip and Hua Hin series.

Sattahip series (Sh): isohyperthermic, coated Typic Quartzipsamments.

ANALYSIS RESULTS

Profile code No.: SE-15/17

(oven dry basis)

Soil series: Phattaya series (Py)

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				
Pd-1208	0-20	Ap	82.0	16.5	1.5							ls	lms	5.8	5.2		3.4	32
Pd-1209	20-45	C1	73.5	26.0	0.5							ls	lms	5.1	3.9		1.9	21
Pd-1210	45-150	C2	81.0	18.0	1.0							ls	lms	5.5	4.2		1.9	24

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				(Bx100)/(B+A)
0-20	1.2	0.75		0.80	0.20	0.10	0.40	1.50	0.20	1.70	1.1	73.3	100	88		0.06	
20-45	1.7	0.78		0.10	0.10	0.10	0.40	0.70	0.20	0.90	0.6	120.0	100	78		0.01	
45-150	0.9	0.75		0.20	0.10	0.10	0.40	0.80	0.30	1.10	0.5	50.0	100	73		0.00	

Surveyor: M. Singhawara & W. Chanchai

Reported by: W. Sirichuyachoo

Date: June 22, 1973

Date: Oct. 26, 1998