

Proposed by F.R. Moormann and
staffs, 1964
Revised by :
P. Vijarnsorn and staffs, 1988
W. Sirichuaychoo, 2004

SATTAHIP SERIES

Field symbol: Sh

Distribution: Occupies moderate extent in Southeast Coast of Thailand and small extent in Peninsular Thailand.

Setting: Sattahip soils derived formed from granite and occurred on granitic terrain. Relief is nearly level to gently undulating. Slope ranges from 2 to 5 percent. Elevation ranges from 30 to 70 m above mean sea level. The climate is transitional zone between Tropical Savanna (Koppen 'Aw') and Tropical Monsoon (Koppen 'Am') Average annual precipitation is from 1,100 to 2,200 mm Average annual air temperature is from 27 °C to 29°C.

Drainage, Permeability and Runoff: Drainage is somewhat excessively drained, permeability is rapid and surface runoff is rapid. Ground water level falls below 1.5 m nearly throughout the years. They are dry out very deep during the peak of the dry season.

Vegetation and Land Use: Mainly used for cassava and sugar cane cultivation.

Characteristic Profile Features: The Sattahip series is a member of the isohyperthermic, coated Typic Quartzipsamments (soil taxonomy, 2003). They are very deep sandy soils and are characterized by a grayish brown, brown or light brown loamy coarse sand surface or A horizon overlying a pinkish gray, pink or light reddish brown loamy coarse sand C horizon. Moderately acid to neutral, reaction values range from 6.0 to 7.0 at the surface and moderately acid to slightly acid, reaction values range from 6.0 to 6.5 in the subsoil.

Typifying Pedon: Sattahip loamy sand - cassava and coconut tree field, from south east of Bang Pra Irrigation Tank, Amphoe Si Racha, Changwat Chon Buri, 40 m above mean sea level, 1 to 3 percent slopes (sheet number, coordinate: 884045).

Profile Code Number: SE-15/20. described by C. Chaengprai and staffs, 6 August 1973 (moist colors unless otherwise stated).

Horizon Depth (cm)	Description
Ap 0-25	Grayish brown to brown (10YR5/2-3) loamy sand; weak coarse subangular blocky structure breaking to single grain; friable, nonsticky and nonplastic; many fine interstitial pores, common fine and few medium tubular pores; many fine and few medium roots; neutral (field pH 7.0); gradual smooth boundary.
C1 25-58	Light brownish gray to pale brown (10YR6/2-3) loamy sand; weak coarse subangular blocky structure breaking to single grains; friable, nonsticky and nonplastic; many fine interstitial pores and common fine tubular pores; few fine, medium and coarse roots; neutral (field pH 7.0); diffuse smooth boundary.
C2 58-120 ⁺	Pinkish gray to pink (7.5YR7/2-3) loamy sand; massive; friable, nonsticky and nonplastic; many fine interstitial pores, common fine and few tubular pores; few medium roots; slightly acid (field pH 6.5).

Type Location:

Name of district, Amphoe Sattahip, Changwat Chonburi.

Range of Profile Features:

The surface or A horizon loamy sand or sand varies from 10 to 30 cm in thickness and has 10YR or 7.5YR hues, values 4 to 6 and chromas 2 to 4. Texture is sandy loamy may occurred. Structure is weak fine blocky and single grain. Moderately acid to slightly acid, reaction values range from 6.0 to 8.0.

The C horizon sand or loamy sand, has 7.5YR or 5YR hues, values 6 to 7 and chromas 2 to 4. Structure is weak fine blocky and single grain. Mottles may present in the deeper subsoil, below 1 meter of the surface. Strongly acid to neutral, reaction values range from 5.5 to 7.0.

Similar Soil Series:

Patthaya series (Py): isohyperthermic, coated Typic Quartzipsamments, 10YR to 7.5YR hues, values 5 to 7 and chromas 4 to 8 .

Ban Bueng series (Bbg): isohyperthermic, coated Oxyaquic Quartzipsamments, somewhat poorly drained to moderately well drained, mottles occur within 100 cm from the soil surface.

Principal Associated Soils:

These include Thung Wa, Patthaya, Ban Bueng and Chon Buri series.

Thung Wa series (Tg): coarse-loamy, siliceous, subactive, isohyperthermic Typic Paleudults.

Chon Buri series (Cb): fine-loamy, mixed, semiactive, isohyperthermic Typic Endoaqualfs.

ANALYSIS RESULTS

Profile code No.: SE-15/20

(oven dry basis)

Soil series: Sattahip series (Sh)

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-1638	0-25	Ap	82.0	17.0	1.0						ls	ls	5.0	4.3	0.3	4.0	44
Pd-1639	25-58	C1	80.5	14.0	5.5						ls	ls	5.4	4.4	0.3	2.5	35
Pd-1640	58-120+	C2	81.0	16.0	3.0						ls	ls	5.5	4.5	0.6	3.1	29

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)
				0-25	0.5	0.36		0.40	0.10	0.10	0.20	0.80	1.40				2.20
25-58	0.1	0.14		0.40	0.10	0.10	0.20	0.80	0.80	1.60	0.6	10.9	100	50		0.03	
58-120+	0.1	0.20		0.30	0.10	0.05	0.10	0.55	0.40	0.95	0.5	16.7	100	58		0.02	

Surveyor: C. Chaengprai & staff

Reported by: W. Sirichuaychoo

Date: August 6, 1973

Date: Oct. 26, 1998