

Proposed by P. Vijarnsorn, 1978
Revised by :
P. Vijarnsorn and staffs, 1988
W. Sirichuaychoo, 2004

PATTANI SERIES

Field Symbol: Pti

Distribution: Occupied a small extent in Peninsular Thailand and some areas in Southeast Coast of Thailand.

Setting: Pattani soils formed from marine sand sediment and occurred on coastal plain (back swamp along coastal plain). Relief is level. Slope is less than 1 percent. The climate is Tropical Monsoon (Koppen 'Am'). Average annual precipitation is from 1,800 to 2,500 mm Average air temperature is from 26°C to 28°C.

Drainage, Permeability and Surface Runoff: Drainage is poorly drained, permeability is slow and surface runoff is slow. Flooding depth 20 to 30 cm about 3 to 4 months.

Vegetation and Land Use: Natural grasses, shrub forest, some part cleared for paddy field.

Characteristic Profile Feature: Pattani series is a member of the coarse-loamy, mixed, superactive, nonacid, isohyperthermic Sulfic Endoaquepts (soil taxonomy, 2003). They are very deep soils and are characterized by a dark gray or dark grayish brown clay loam surface or A horizon overlying stratified marine sediments gray sandy loam, loamy sand or silt loam, high sulfur content of C horizon. Strongly acid to moderately acid, reaction values range from 5.5 to 6.0 over moderately acid to moderately alkaline, reaction values range from 6.0 to 8.0.

Typifying Pedon: Pattani clay loam - old paddy with tall grasses, from Ban Nga Nae, Tambon Ru Sa Ma Lae, Amphoe Muang, Changwat Pattani, 3 m above mean sea level, less than 1 percent slopes, 30 cm flooding depth, 110 cm ground water table depth (sheet name Amphoe Nong Chik, sheet number 5222 IV, coordinate: 467587).

Profile Code Number: S-69/71, described by Boonlom Haneenil, 22 May 1978 (moist colors unless otherwise stated).

Horizon	Depth (cm)	Description
Apg	0-9	Dark grayish brown (10YR4/2) clay loam; common fine distinct strong brown (7.5YR5/8) mottles mainly along roots channels; moderate fine and medium subangular blocky structure; firm, sticky and plastic; many very fine and fine roots; moderately acid (field pH 6.0); abrupt smooth boundary.
Bg1	9-16	Light gray to gray (5Y6/1) silty clay loam; many medium and coarse prominent strong brown (7.5YR5/8) and few fine prominent red (10R4/8) mottles; moderate fine and medium subangular blocky structure; firm, sticky and plastic; many very fine and fine roots; slightly acid (field pH 6.5); clear smooth boundary.
Bg2	16-27	Light gray to gray (5Y6/1) and grayish brown (10YR5/2,sand spot) sandy loam; few fine distinct strong brown (7.5YR5/6) mottles mainly along roots channels; moderate fine subangular blocky structure and single grains; friable, slightly sticky and slightly plastic; many very fine and fine roots; neutral (field pH 7.0); clear smooth boundary.
Cg1	27-47	Light gray (10YR7/1) sand; single grains; loose, nonsticky and nonplastic; common fine roots; moderately alkaline (field pH 8.0); clear smooth boundary.
Cg2	47-61/68	Light gray to gray (10YR6/1) loamy medium sand; common fine and medium distinct yellowish brown (10YR5/6 and 10YR5/8) mottles; single grains; loose, nonsticky and nonplastic; common fine roots; moderately alkaline (field pH 8.0); clear wavy boundary.
2Ag	61/68-90/110	Grayish brown (10YR5/2) silt loamy; common medium distinct strong brown (7.5YR5/8) mottles; massive; sticky and plastic; few fine and common decayed roots; moderately alkaline (field pH 8.0); abrupt smooth boundary.

2Cg3 90/110⁺ Dark bluish gray (5B4/1) sand; few fine distinct brownish yellow (10YR6/6) mottles mainly along roots channels; massive; nonsticky and nonplastic; common decayed roots and leaves; moderately alkaline (field pH 8.0).

Type Location:

Name of province, Changwat Pattani.

Range of Profile Features:

The surface or A horizon loam or clay loam, ranges 10 to 20 cm in thickness which 10YR hues, values 4 to 5 and chromas 1 to 2. Very strongly acid to slightly acid, reaction values range from 5.5 to 6.5.

The stratified of subsoil C horizon colored of marine sediment, sandy loam, loamy sand or silt loam with high sulfur content, is 10YR, 2.5Y, 5Y or G of gray colored. Neutral to moderately alkaline, reaction values range from 7.0 to 8.0.

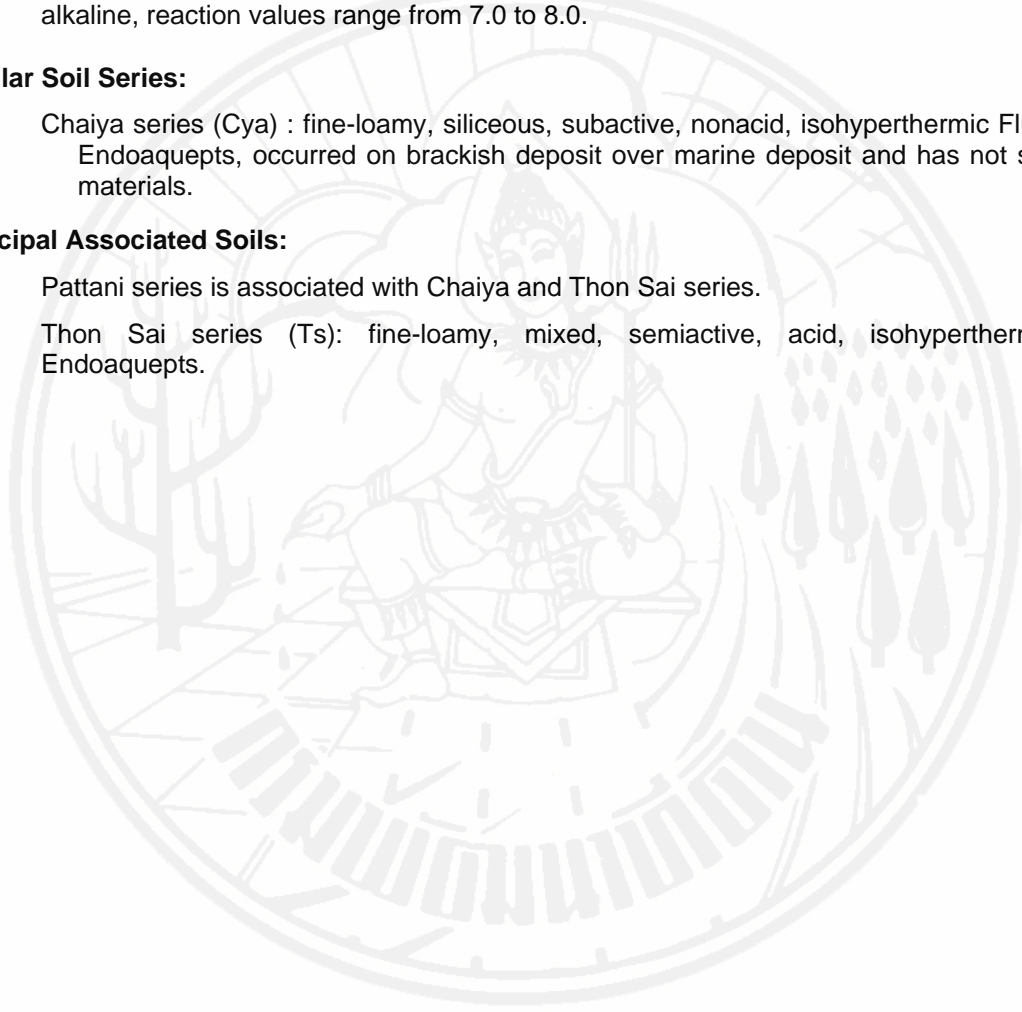
Similar Soil Series:

Chaiya series (Cya) : fine-loamy, siliceous, subactive, nonacid, isohyperthermic Fluvaquentic Endoaquepts, occurred on brackish deposit over marine deposit and has not sulfidic soil materials.

Principal Associated Soils:

Pattani series is associated with Chaiya and Thon Sai series.

Thon Sai series (Ts): fine-loamy, mixed, semiactive, acid, isohyperthermic Sulfic Endoaquepts.



ANALYSIS RESULTS

Profile code No.: S-69/71

(oven dry basis)

Soil series: Pattani series (Pti)

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 water	1:1 KCl			
			sand	silt	clay	vc	c	m	f	vf	result	estim ⁿ					
RA-10993	0-9	Ap	22.2	45.2	32.6	0.6	4.1	5.9	6.9	4.7	cl	cl	4.4	3.8		6.7	150
RA-10994	9-16	Bg1	13.2	59.2	27.6	0.1	1.8	2.7	3.5	5.1	sicl	sicl	5.3	4.4		4.4	99
RA-10995	16-27	Bg2	75.4	16.3	8.3	5.1	31.6	29.7	5.9	3.1	sl	sl	6.3	5.2		3.4	43
RA-10996	27-47	Cg1	93.6	5.4	1.0	8.7	38.1	37.6	8.8	0.4	s	s	6.2	5.9		1.1	12
RA-10997	47-61/68	Cg2	84.0	14.5	1.5	2.3	25.1	42.5	11.8	2.3	ls	lms	6.8	5.8		1.8	32
RA-10998	68-90/110	2Ag	12.2	62.3	25.5	0.1	0.7	0.7	5.3	5.4	sil	sil	3.1	2.8		12.3	21
RA-10999	90/110+	2Cg3	94.8	4.2	1.0	0.6	5.5	82.1	5.8	0.8	s	s	3.0	2.8		6.2	9

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)				
				0-9	2.4	0.51		2.50	4.30	0.30	6.00	13.10	9.60	22.70	11.0			
9-16	2.0	0.99		2.60	3.50	0.20	3.60	9.90	6.20	16.10	8.1	29.3	100	61			0.18	
16-27	0.5	0.34		1.00	1.20	0.10	1.20	3.50	1.60	5.10	1.6	19.3	100	69			0.24	
27-47	5.3	0.17		0.40	0.50	0.10	0.90	1.90	0.40	2.30	1.0	100.0	100	83			0.26	
47-61/68	0.0	0.28		0.80	0.90	0.10	1.20	3.00	1.10	4.10	1.6	106.7	100	73			0.26	
61/68-90	3.5	2.94		4.00	6.40	0.05	5.60	16.05	19.60	35.65	11.9	46.7	100	45			0.50	
90-110+	0.0	0.02		0.50	2.70	0.02	0.30	3.52	10.10	13.62	0.9	90.0	100	26			0.14	

Surveyor: B. Haninnee

Reported by: W. Sirichuaychoo

Date: May 22, 1978

Date: Nov. 24, 1998