

Proposed by P. Vijarnsorn, 1975  
Revised by :  
P. Vijarnsorn and staffs, 1988  
W. Sirichuaychoo, 2004

## THA SALA SERIES

Field Symbol: Tsl

**Distribution:** Occupies a small extent in the Peninsular Thailand but moderate extent in Changwat Nakhon Si Thammarat.

**Setting:** Tha Sala soils are formed from alluvium on alluvial plain. Relief is level. Slope is less than 1 percent. Elevation ranges from 20-30 m above mean sea level. The climate is Tropical Monsoon (Koppen 'Am'). Average annual air temperature is from 26 °C to 28°C. Average annual precipitation is from 1,800 to 3,000 mm.

**Drainage, Permeability and Surface Runoff:** Drainage is poorly drained, permeability is slow and surface runoff is slow. Ground water level is less than 1 m and flooding 4 to 5 months in rainy season.

**Vegetation and Land Use:** paddy field.

**Characteristic Profile Features:** Tha Sala series is a member of the fine, kaolinitic, isohyperthermic Typic Endoaquults (soil taxonomy, 2003). They are very deep soils and are characterized by a grayish brown or light gray clay loam surface or A horizon overlying light gray or gray clay loam to clay argillic B horizon over light gray or gray sandy loam C horizon with brownish mottles throughout. Very strongly acid to moderately acid, reaction values range from 4.5 to 6.0.

**Typifying Pedon:** Tha Sala clay loam, paddy, Near Wat Chan Kra Phor, Ban Pha Yong, Tambon Dontako, Amphoe Tha Sala, Changwat Nakhon Si Thammarat, 8 m above mean sea level, 10 to 30 cm flooding depth, less than 1 meter ground water table depth (sheet name Amphoe Tha Sala, sheet number 4936 I, coordinate: 991454).

**Profile Code Number:** S-62/74, described by Prasart Rimchala, 18 April 1975 (moist colors unless otherwise stated).

Horizon	Depth (cm)	Description
Apg	0-18	Grayish brown (10YR5/2) clay loam; common medium prominent yellowish red (5YR4/6) mottles; strong coarse subangular blocky structure; hard, firm, sticky slightly plastic; abundant fine roots; very strongly acid (field pH 4.5); gradual smooth boundary.
Btg1	18-28	Light olive gray (5Y6/2) clay; many coarse prominent strong brown (7.5YR5/6) mottles; moderate medium subangular blocky structure; hard, firm, sticky and plastic; few thin cutan on ped faces; few fine roots; very strongly acid (field pH 4.5); clear smooth boundary.
Btg2	28-54	Light gray to gray (10YR6/1) clay; many coarse distinct yellowish brown (10YR5/8) mottles; strong coarse prismatic structure; hard, firm, sticky and plastic; many thick cutan on ped faces; very strongly acid (field pH 5.0); gradual smooth boundary.
Cg	54-100	Light gray (10YR7/2) sandy clay loam; many coarse distinct yellowish brown (10YR5/8) mottles; weak fine subangular blocky structure; friable, sticky and slightly plastic; very strongly acid (field pH 5.0).

### Type Location:

The name of district, Amphoe Tha Sala, Changwat Nakhon Si Thammarat.

### Range of Profile Features:

The surface or A horizon loam, clay loam or silt loam, is 10 to 20 cm in thickness and has 10YR or 7.5YR hues, values 5 or 6 and chromas 1 to 3, with brownish mottles. The texture is

sandy loam may occurred. Strongly acid to moderately acid, reaction values range from 5.5 to 6.0.

The argillic B horizon silty clay or clay and has 10YR or 7.5YR hues, values 5 to 7 and chromas 2 or less, with brownish and yellowish mottles. The texture is sand clay may occurred. Strongly acid to moderately acid, reaction values range from 5.5 to 6.0.

The C horizon sandy loam or sandy clay loam and has 10YR or 7.5YR hues, values 5 to 7, chromas 2 or less with brownish and yellowish mottles. Strongly acid to slightly acid, reaction values range from 5.5 to 6.5.

**Similar Soil Series:**

Bang Nara series (Ba): fine, kaolinitic, isohyperthermic Typic Paleaquults, clayey throughout the profile.

**Principal Associated Soil:**

These include Bang Nara and Sai Buri series but occur on the higher position.

Sai Buri series (Bu): fine-silty, kaolinitic, isohyperthermic Aquic Kandiodults.

**ANALYSIS RESULTS**  
(oven dry basis)

Profile code No.: S-62/74

Soil series: Tha Sala series (Tsl)

Lab No.	Depth (cm)	Horizon	Particle size distribution analysis (% by weight)								Texture		pH		CaCO <sub>3</sub> %	P, mg kg <sup>-1</sup> Bray 2	K, mg kg <sup>-1</sup> NH <sub>4</sub> OAc	
			USDA grading				Sand-fraction grading				Lab	Field	1:1 water	1:1 KCl				
			sand	silt	clay	vc	c	m	f	vf	result	estim <sup>n</sup>						
Pf-553	0-18	Apg	31.0	50.0	19.0							sil-l	cl	4.7	3.8	0.6	5.0	32
Pf-554	18-28	Blg1	30.0	39.5	30.5							cl	c	5.0	4.2	0.9	3.6	21
Pf-555	28-54	Blg2	30.5	30.0	39.5							cl	c	5.4	4.5	0.3	2.2	29
Pf-556	54-100	Cg	59.5	18.5	22.0							scl	scl	5.6	3.8	0.6	1.9	27

Depth (cm)	Air dried to oven dried	C %	N %	Exchange capacity and cations (cmol <sub>(+)</sub> kg <sup>-1</sup> )										Base satur <sup>n</sup> (%)		ECEC cmol <sub>(+)</sub> kg <sup>-1</sup> (B+D)	Al KCl extr. cmol <sub>(+)</sub> kg <sup>-1</sup> (D)	Electrical conduct <sup>y</sup> (ECx10 <sup>6</sup> ) dS m <sup>-1</sup>
				Ca Mg K Na				SUM cations (B)	Extr. acidity (A)	SUM (B+A)	CEC NH <sub>4</sub> OAc (C)	CEC 100g Clay	B/Cx100	(Bx100)/(B+A)				
0-18	2.2	1.32	0.10	0.60	0.40	0.10	0.20	1.30	9.50	10.80	4.7	24.7	28	12			0.06	
18-28	2.6	0.48	0.04	0.60	0.80	0.10	0.20	1.70	8.70	10.40	6.9	22.6	25	16			0.07	
28-54	3.1	0.11	0.02	0.60	1.10	0.10	0.30	2.10	9.60	11.70	6.3	15.9	33	18			0.05	
54-100	2.4	0.03	0.01	0.60	0.80	0.10	0.30	1.80	6.30	8.10	3.5	15.9	51	22			0.04	

Surveyor: P. Rimchala

Reported by: W. Sirichuaychoo

Date: April 18, 1975

Date: Nov. 4, 1998