

Proposed by F.R. Moormann, 1963
 Revised by
 1. C. Changprai, 1987
 2. S. Udomsri, 2004

THA YANG SERIES

Field Symbol: Ty

Distribution: Occupies large extent, occurring in all parts of Thailand with the exception of Peninsular Thailand and Southeast Coastal Thailand.

Setting: Tha Yang soils are formed from residuum and local colluvium derived from sandstone and quartzite interbedded with phyllite and shale or equivalent rocks and occurs on footslope or dissected erosion surfaces and residual hills. Relief is mainly undulating to hilly. Slopes range from 2 to 35%. Elevations are variable, but the soils are not thought to occur higher than 750 meters above sea level. The climate is Tropical Savanna (Köppen 'Aw'). Mean annual temperature is 27°C.

Drainage, Permeability and Surface Runoff: Well drained. Permeability and surface runoff are moderate to rapid. Ground water table is below 2 meters throughout the year.

Vegetation and Land Use: Mixed deciduous and Dipterocarp forest, locally cleared for shifting cultivation, reverting to secondary forest and shrubs when abandoned. Some area used for upland crops such as corn, muangbean.

Characteristic Profile Features: Tha Yang series is a member of the Loamy-skeletal, siliceous, isohyperthermic Kanhaplic Haplustults. They are gravelly to very gravelly soils and are characterized by a very dark grayish brown to dark brown, slightly gravelly sandy loam or loam A horizon. This overlies a brown, strong brown, reddish brown or yellowish red gravelly or very gravelly sandy clay loam or loam argillic B horizon. Gravel consists of angular or subangular sandstone, quartz and shale fragments which become more abundant with depth. Reaction is strongly to slightly acid, decreasing Slightly with depth.

Typifying Pedon: Profile code number is Code SW-56/45

Location: Ban Dan Ngo, Tambon Song Pee Nong, Amphoe Tha Yang Changwat Phetchaburi.

Sheet Name: Ban Tha Ling Lom

SheetNo.: 4934 IV

Coordinate: 624152

Elevation: 190 m MSL.

Relief: undulating

Slope: 3%

Physiography: erosional surface

Parent material: residuum and colluvium derived from sandstone underlain by fine grained clastic rocks

Drainage: well drained

Permeability: rapid

Runoff: moderate

Ground water depth: > 30 m

Flooding depth: - cm

Duration: -

Frequency: -

Annual rainfall: 1,044.1 mm

Mean temp: 27.6 °C

Climate type: Tropical Savannah

Natural vegetation and/or land use: hill evergreen forest

Other:

Described by: Banyati Khanchanhom

Date: 15 July, 1981

Revised by: S. Udomsri

Horizon	Depth (cm)	Description
A1	0-5	Dark brown (10YR 4/3) sandy loam; weak fine to medium subangular blocky structure; friable, non sticky, non plastic; many fine roots; moderately acid (field pH 6.0); clear, smooth boundary.
A2	5-10	Dark yellowish brown (10YR 4/4) sandy loam to sandy clay loam; few fine mottles of strong brown (7.5YR 4/6); weak fine to medium subangular blocky structure; friable, non sticky, non plastic; common fine and medium roots; strongly acid (field pH 5.5); clear, smooth boundary.

B	10-16	Yellowish brown (10YR 5/4) slightly gravelly sandy clay loam; common fine mottles of strong brown (7.5YR 4/6) and few fine mottles of yellowish brown (10YR 5/8); weak fine to medium subangular blocky structure; friable, slightly sticky, slightly plastic; common fine and medium roots; strongly acid (field pH 5.5); clear, smooth boundary.
Bt	16-30	Yellowish brown (10YR 5/4) very gravelly sandy clay loam; common fine mottles of strong brown (7.5YR 5/8) and few fine mottles of yellowish brown (10YR 5/8); moderate fine and medium subangular blocky structure; firm, slightly sticky, slightly plastic; patchy thin clay coatings on ped faces; common fine roots; strongly acid (field pH 5.5)
BC	30+	Layer of sandstone fragments

Remarks:

Type Location: Name of Amphoe, Amphoe Tha Yang Changwat Phetchaburi

Range of Profile Features:

The A horizon is from 5 to 15 cm thick and may have a sandy loam or loam texture. Matrix colours are 10YR and 7.5YR hues with values of 3 through 5 and chromas of 2 through 4. Structure is moderate to strong, fine and medium blocky and field pH values range from 5.5 to 6.5.

The argillic B horizon has matrix colours in 10YR, 7.5YR and 5YR hues with values of 5 or more dry and 4 or more moist with chromas of 4 through 8. Structure is moderate, fine and medium blocky and field pH values range from 5.0 to 6.0.

Similar Soil Series:

Lat Ya series (Ly): becomes very gravelly below 50 cm from the soil surface.

Ranong series (Ry): similar profile with regard to morphology, genesis and parent material, but with udic moisture regime.

Muak Lek series (Ml): is a clayey skeletal developed from shale, slate or fine grained clastic rocks. The paralithic contact occurs within 50 cm from the soil surface.

Mae rim series (Mr): derived from old alluvium which contains cobbles more than 35% within 50 cm from the soil surfaces.

Principal Associated Soils: These include Lat Ya occurring on footslopes, Mae Rim and Yasothon series on adjacent high terraces and Chiang Khan and Ban Chong series on dissected erosion surfaces and coalescing fans.

ANALYSIS RESULTS
(oven dry basis)

Profile code No.:SW-56/45
Soil series : Tha Yang (Ty)

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 ¹	water	KCl				
4/18216	0-5	A1	58.4	30.0	11.6	1.2	2.4	8.9	25.6	20.3	sl	sl	5.1	4.3		7.3	105	
4/18217	5-10	A2	55.3	31.2	13.5	1.7	3.0	7.8	25.6	17.6	sl	sl-scl	4.8	4.0		5.9	93	
4/18218	10-16	B	53.9	31.2	14.9	1.4	2.5	8.6	23.8	17.6	sl	sgscl	4.9	4.0		3.6	92	
4/18219	16-30	Bt	49.2	35.2	15.6	6.2	2.2	6.1	19.0	15.7	l	vg scl	5.2	4.0		1.2	64	

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)				
				0-5	3.8	2.83		2.00	1.70	0.30	0.20	4.20	8.80	13.00	7.80			
5-10	2.8	2.00		1.00	0.90	0.20	0.20	2.30	8.10	10.40	5.60	41.5	41	22			0.08	
10-16	2.9	1.49		0.30	0.80	0.20	0.20	1.50	6.90	8.40	4.60	30.9	33	18			0.08	
16-30	2.1	0.28		0.30	0.70	0.10	0.30	1.40	3.30	4.70	3.00	19.2	47	30			0.02	