

Proposed by S. Charoenphong, 1970
Revised by :
P. Vijarnsorn and staffs, 1988
W. Sirichuaychoo, 2004

TAK BAI SERIES

Field Symbol: Ta

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

Setting: Tak Bai soils are formed from alluvium over marine or brackish sediments and occurred on coastal plain. Relief is level. Slopes is less than 2 percent. The soils are at elevation below 10 m above mean sea level and have a Tropical Monsoon climate (Koppen 'Am'). Mean 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. Surface flooding by impounded rainwater and river water occurs up to 30 cm for 3 to 4 months during the rainy season. Ground water level seldom falls below 2 m from the soil surface.

Vegetation and Land Use: Used almost exclusively for transplanted rice. Abandoned areas revert to marsh grass and reeds.

Characteristic Profile Features: Tak Bai series is a member of the fine-silty, mixed, semiactive, acid, isohyperthermic Typic Endoaquepts (soil taxonomy, 2003). They are very deep soils and are characterized by very dark gray silty clay loam surface or A horizon over a light gray silty clay loam cambic B horizon. Brownish mottles occur throughout the profile, red mottles may occur in the deeper subsoil at depth approximately below 80 cm from the soils surface. Very strongly acid to moderately acid, reaction values range from 4.5 to 6.0.

Typifying Pedon: Tak Bai silty clay loam - rice field, from Amphoe Tak Bai, Changwat Narathiwat, less than 1 percent slopes, 20 to 40 cm flooding depth, 96 cm ground water table depth.

Profile Code Number: S-71/19, described by F. J. Dent, 13 June 1969 (moist colors unless otherwise stated).

Horizon Depth (cm)	Description
A 0-12/19	Very dark gray (10YR3/1) silty clay loam with decomposed organic matter; moderate fine and medium subangular blocky structure; friable, soft, slightly sticky and slightly plastic; few interstitial pores; many fibrous roots; common fine mica; very strongly acid (field pH 5.0); abrupt smooth boundary.
Bg1 12/19-50/63	Light gray (5Y7/1) silty clay loam; common fine faint yellowish brown (10YR5/8) mottles; moderate medium subangular blocky structure; slightly hard, slightly sticky and slightly plastic; few interstitial and tubular pores; common animal holes; common fine roots; many mica; very strongly acid (field pH 4.5); gradual smooth boundary.
Bg2 50/63-90 ⁺	Light gray (5Y7/1) silty clay loam; many coarse distinct strong brown (7.5YR5/8) mottles; moderate fine and medium subangular blocky structure; sticky and plastic; few interstitial and tubular pores; few animal holes; common fine roots; many mica; ferric oxide along roots; very strongly acid (field pH 4.5).

Type Location:

Name of district, Amphoe Tak Bai, Changwat Narathiwat.

Range of Profile Features:

The surface or A horizon is 10 to 20 cm in thickness, has 10YR hue, values 2 to 4 and chromas 1 or 2. Structure are moderate fine and medium blocky. Very strongly acid to strongly acid, reaction values range from 4.5 to 5.5.

The cambic B horizon has 10YR, 2.5Y or 5Y values 6 or 7 and chromas 1 or 2. Structure is moderate medium blocky. Very strongly acid, reaction values range from 4.5 to 5.0.

Similar Soil Series:

Bang Nara series (Ba): fine, kaolinitic, isohyperthermic Typic Paleaquults, has argillic horizon.

Principal Associated Soils:

These include Bangnara and Ra-ngae series. Bangnara soils are formed on the low terrace. Ra-ngae soils are formed on the lower part of tidal flats and are both high in organic matter.

Ra-ngae series (Ra): very-fine, mixed, superactive, acid, isohyperthermic Sulfic Endoaquepts.

ANALYSIS RESULTS

Profile code No.: S-71/19

(oven dry basis)

Soil series: Tak Bai series (Ta)

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				
P-1214	0-12/19	Ap	13.0	65.0	22.0							sil	sicl	4.5	3.8	0.6	19.6	60
P-1215	19-50/63	Bg1	11.0	58.0	31.0							sicl	sicl	4.6	3.8	0.0	4.8	21
P-1216	50/63-90+	Bg2	23.0	38.5	38.5							cl	sicl	4.4	3.8	0.7	5.6	33

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)			
0-12/19	6.3	3.43	0.36	0.50	0.50	0.20	0.60	1.80	21.60	23.40	20.1	91.4	9	8			0.12
19-50/63	2.8	0.40	0.06	0.30	0.50	0.10	0.40	1.30	7.30	8.60	6.5	21.0	20	15			0.04
63-90+	6.7	0.33	0.05	0.60	1.10	0.10	0.80	2.60	9.40	12.00	7.5	19.5	35	22			0.12

Surveyor: F.J. Dent

Reported by: W. Sirichuaychoo

Date: June 13, 1969

Date: Nov. 24, 1998