

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

SARABURI SERIES

Field Symbol: **Sb**

Distribution: Occupies moderate extent in the Central Plain and small extent in the Central Highlands.

Setting: Saraburi soils are formed from alluvium and occur on low-lying parts of the terrace or on transitional parts between the terrace and flood plain. Relief is flat. Slopes are about 0-1%. The climate is Tropical Savanna (Köppen 'Aw'). Mean annual precipitation ranges from 1,000 to 1,400 mm. Mean annual temperature is 27°C.

Drainage, Permeability and Surface Runoff: Somewhat poorly drained to poorly drained. Permeability and runoff are slow. These soils are flooded by rainwater or river to depths of up to 50 cm for four or five months during the rainy season. Sometimes this area flooded by irrigation. Groundwater level falls below 1.5 m from the soil surface during the dry season.

Vegetation and Land Use: Mainly used for broadcast rice cultivation.

Characteristic Profile Features: Saraburi series is a member of the Very-fine, mixed, active, nonacid, isohyperthermic Vertic (Aeric) Endoaquepts. They are very deep, medium acid to mildly alkaline soils and characterized by a dark gray or dark grayish brown clay A horizon, overlying a brownish (in face of peds) clay or silty clay B horizon. These soils are mottled throughout with strong brown and yellowish brown coatings along root channels in the A horizon, and dark brown and yellowish brown mottles in the B horizon. Slickensides, pressure faces, and few, small iron/manganese nodules occur in the B horizon.

Typifying Pedon: Profile code number is C-4/29

Location: Ban Khok Matum, Tambon Khok Yai, Amphoe Nong Khae Changwat Saraburi.

Sheet Name: Amphoe Nong Khae

SheetNo.: 5137 I

Coordinate: 02(5)88(5)

Elevation: 4 m MSL.

Relief: level

Slope: 0-1%

Physiography: alluvium plain

Parent material: alluvium

Drainage: somewhat poorly drained

Permeability: slow

Runoff: slow

Ground water depth: >2 m

Flooding depth: 20-50 cm

Duration: 1-2 month

Frequency: every year

Annual rainfall: 1,244.2 mm

Mean temp: 27.9 °C

Climate type: Tropical Savannah

Natural vegetation and/or land use: paddy field

Other:

Described by: Chalerm

Date: 28 February, 1974

Revised by: S. Udomsri

Horizon	Depth (cm)	Description
Apg	0-10	Dark brown (10YR 4/3) silty clay; common medium distinct strong brown mottles; moderate fine and medium subangular blocky structure; very hard, firm, sticky, plastic; common fine tubular and interstitial pores; many fine roots; moderately acid (field pH 6.0); abrupt, smooth boundary.
BAg	10-48	Dark brown (10YR 4/3) clay; common medium distinct gray (10YR 5/2) and few fine faint dark brown (7.5YR 4/4) mottles; moderate medium and coarse subangular blocky structure; firm, sticky, plastic; many very fine and few fine tubular and few fine interstitial pores; few very fine roots; few fine hard subrounded Fe&Mn concretions; moderately acid (field pH 6.0); clear smooth boundary.

Bg1	48-93	Olive (5Y 5/3) clay; common medium distinct gray and few fine faint yellowish brown (10YR 5/6) mottles; weak coarse subangular blocky structure; firm, sticky, plastic; common very fine tubular and interstitial pores; few hard Fe&Mn concretions; many fine secondary lime concretions; moderately alkaline (field pH 8.5); clear smooth boundary.
Bg2	93-130+	Light olive brown (2.5Y 5/4) clay; common medium distinct gray and many fine faint yellowish brown (10YR 5/6) mottles; weak coarse subangular blocky structure; firm, sticky, plastic; common very fine tubular and interstitial pores; few hard Fe&Mn concretions; common fine secondary lime concretions; moderately alkaline (field pH 8.5)

Type Location: Name of Changwat, Changwat Saraburi.

Range of Profile Features:

The A horizon is from 10 to 30 cm thick, has 10YR hue, values of 3 to 5 and chromas of 2 or 1. Structure is weak coarse blocky and field pH values range from 5.5 to 6.5.

The B horizon has 10YR or 2.5Y hues, values of 4 to 6 in 10YR and 5 or more in 2.5Y and chromas of 2 to 4. Structure is weak fine and medium blocky and field pH values range from 6.0 to 8.0. Secondary lime nodules may occur in the deeper subsoil.

Similar Soil Series:

Nakhon Pathom series (Np): has an argillic B horizon and hue about 10 YR, values 3-5 and chromas about 2-3

Ratchaburi series (Rb): are sitting in flood plains, contain more distinct mottles, chromas are predominantly 2 in the subsoil and hues are mainly 10YR.

Sing Buri series (Sin): are sitting in flood plains, or lower lying of alluvial plain with dominant value ≤ 4 throughout

Principal Associated Soils: These include Nakhon Pathom series which occupies higher positions on the semi-recent terrace, and Sing Buri series on the flood plain proper.

ANALYSIS RESULTS

Profile code No. : SW-51/69

(oven dry basis)

Soil series : Saraburi (Sb)

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 ¹						
Pe-445	0-10	Apg	6.5	41.0	52.5							sic	sic	5.3	3.9	1.2	1.6	82
Pe-446	10-48	BAg	6.5	29.0	64.5							c	c	5.6	4.4	1.5	1.9	70
Pe-447	48-93	Bg1	4.5	34.0	61.5							c	c	7.8	6.7	3.0	1.7	64
Pe-448	93-130+	Bg2	2.5	26.5	71.0							c	c	7.7	6.6	2.4	1.7	61

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 100g Clay (C)					B/Cx100	(Bx100)/(B+A)
0-10	5.8	1.17		8.00	5.10	0.20	1.20	14.50	19.40	33.90	24.20	46.1	60	43						
10-48	7.3	0.71		16.00	6.40	0.20	3.70	26.30	14.80	41.10	32.00	49.6	82	64						
48-93	8.8	0.49		26.20	8.50	0.20	7.50	42.40	5.10	47.50	37.30	60.7	100	89						
93-130+	8.3	0.40		22.10	9.30	0.20	10.00	41.60	5.30	46.90	38.20	53.8	100	89						