

Proposed by W. Van der Kevie, 1971
Revised by:
1. C. Changprai, 1987
2. S. Udomsri, 2004

SING BURI SERIES

Field Symbol: Sin

Distribution: Occupies moderate extent in the Central Plain.

Setting: Sing Buri soils are formed from alluvium and occur on the low lying parts of river basins and flood plain. Relief is flat. Slope are about 0-1%. Elevation ranges from 6-18 m above sea level. 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: Poorly drained. Runoff and permeability are slow. These soils are flooded by river water or rain to depths of 80 cm or more for seven to eight months during the rainy season. Sometimes this area flooded by irrigation. The groundwater level falls to about 100 cm during the peak of the dry season and the soil cracks.

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

Characteristic Profile Features: Sing Buri series is a member of the Very-fine, mixed, semiactive, nonacid, isohyperthermic Vertic Endoaquepts. They are deep, medium to slightly acid over neutral to mildly alkaline soils. They are characterized by a dark gray or dark grayish brown clay A horizon thicker more than 50 cm and overlying a dark gray clay upper B horizon, which in turn overlies a gray clay lower B horizon with an upper boundary at some depth below 80 cm from the soil surface. These soils are mottled throughout with yellowish red and strong brown coating along root channel in the A horizon, and brown, yellowish brown and dark brown mottles in the B horizon. Slickensides and pressure faces occur in the B and lower A horizon and the soil cracks at the surface when dry.

Typifying Pedon: Profile code number is C 5/8

Location: north of road No. 3195 from Ang Thong-Suphan Buri at km 18, Ban Hua Sa-bang, Tambon Yi Ion, Amphoe Visetchaicharn Changwat Ang Thong.

Sheet Name: Changwat Ang Thong

SheetNo.: 5038 II

Coordinate: 387117

Elevation: 5 m MSL.

Relief: level to nearly level

Slope: 0-1%

Physiography: alluvium plain

Parent material: riverine alluvium

Drainage: poorly drained

Permeability: slow

Runoff: slow

Ground water depth: >2 m

Flooding depth: 50-80 cm

Duration: 3 month

Frequency: every year

Annual rainfall: 1,112.8 mm

Mean temp: 28.2 °C

Climate type: Tropical Savannah

Natural vegetation and/or land use: paddy field .

Other: cracks width 5 mm at depth 20 cm

Described by: Pramote Hemsrichart and Satira Udomsri

Date: 26 February, 1996

Revised by: S. Udomsri

Horizon	Depth (cm)	Description
Apg	0-20	Very dark gray (10YR3/1) clay; many medium distinct strong brown (7.5YR5/6) and yellowish red (5YR5/8) mottles; moderate medium and coarse subangular blocky (depth 0-10 cm) and coarse angular blocky structure; extremely hard, firm, very sticky very plastic; many very fine roots; moderately acid (field pH 6.0); clear, smooth boundary.
Bssg1	20-56	Mixed very dark gray (10Y3/1) and dark gray (10YR4/1) clay; many fine and medium faint dark reddish brown (10YR4/4) mottles; moderate coarse prismatic breaking to coarse angular blocky structure; firm, very sticky, very plastic; common very fine roots; many slickensides and

		pressure faces; common charcoal fragments; organic clay coated on crack surfaces; neutral (field pH 7.0); gradual, smooth boundary.
Bssg2	56-110	Dark gray (10YR4/1) clay; many fine faint dark yellowish brown (10YR4/4) and common fine faint dark grayish brown (10YR4/2) mottles; moderate coarse prismatic breaking to angular blocky structure; firm, very sticky, very plastic; many slickensides and pressure faces; common pieces of charcoal; neutral (field pH 7.0); clear, smooth boundary.
Bg1	110-135	Very dark gray (10YR3/1) clay; many medium and coarse faint dark gray (10YR4/1) and common fine distinct yellowish brown (10YR5/6) mottles; weak coarse prismatic breaking to coarse angular blocky structure; firm, very sticky, very plastic; many slickensides and pressure faces; many black soft Fe&Mn concentrations; moderately acid (field pH 6.0); clear, wavy boundary.
Bg2	135-160*	Mixed very dark gray (10YR3/1) and gray (10YR6/1) clay; many fine and medium prominent red (2.5YR4/8) and few fine distinct strong brown (7.5YR5/6) mottles; weak coarse prismatic breaking to coarse angular blocky structure; firm, very sticky, very plastic; many slickensides and pressure faces; very strongly acid (field pH 5.0)

Type Location: Name of Changwat Changwat Sing Buri

Range of Profile Features:

The A horizon is from 10 to 30 cm thick, has 10YR hue, values of 2 to 4 and chromas of 1 or 2. Structure is weak medium crumb in the uppermost layer and weak coarse blocky below. Field pH values range from 5.5 to 7.0.

The B horizon has 10YR or 7.5YR hue, values of 3 or 4 and chromas of 1 or 2 and gray or grayish brown in the lower horizon. Structure is weak to moderate, fine blocky and massive. Field pH values range from 6.0 to 8.0.

Similar Soil Series:

Phimai series (Pm): founded mainly in Northeast of Thailand and has higher colour values in the upper B horizon (within 50 cm)

Ratchaburi series (Rb): has browner colours with chromas of 2 or more in the B horizon.

Saraburi series (Sb): founded in low-lying parts of the terrace or on transitional parts between the terrace and flood plain. The lower B horizon composed of Hue mainly 2.5Y to 5Y and some secondary lime in deeper subsoils.

Principal Associated Soils: These include Ratchaburi and Saraburi series occupying slightly higher positions on the flood plain.

ANALYSIS RESULTS

Profile code No. : C-5/8

(oven dry basis)

Soil series : Sing Buri (Sin)

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			
P39-96	0-20	Apg	1.1	19.3	79.6	0.0	0.0	0.0	0.0	1.1	c	c	5.0	4.2		5.9	195
P39-97	20-56	Bssg1	0.9	19.6	79.5	0.0	0.0	0.0	0.0	0.9	c	c	5.8	4.9		5.3	195
P39-98	56-110	Bssg2	0.8	16.8	82.4	0.0	0.0	0.0	0.0	0.8	c	c	5.8	4.9		3.7	156
P39-99	110-135	Bg1	1.6	11.2	87.2	0.0	0.0	0.0	0.0	1.6	c	c	5.3	4.4		2.1	117
P39-100	135-160+	Bg2	0.7	33.1	66.2	0.0	0.0	0.0	0.0	0.7	c	c	4.9	4.0		2.2	117

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)			
0-20	5.9	2.22	0.20	24.50	5.80	0.50	1.30	32.10	11.80	43.90	32.20	40.5	100	73	32.10	0.03		
20-56	5.6	0.77	0.13	31.80	6.60	0.50	1.40	40.30	6.10	46.40	31.50	39.6	100	87	-	-		
56-110	5.6	0.59	0.14	30.60	6.30	0.40	1.60	38.90	6.20	45.10	31.50	38.2	100	86	-	-		
110-135	5.7	0.56	0.10	30.80	5.90	0.30	1.00	38.00	8.30	46.30	34.30	39.3	100	82	38.00	-		
135-160+	5.1	0.36	0.06	26.00	4.80	0.30	0.90	32.00	7.90	39.90	37.60	56.8	85	80	32.00	-		