Proposed by: C. Changprai,
F.R. Moormann -1967
Revised by: 1. B. Boonsompopphan,
P. Hemsrichart, 1988
2. S. Sukchan, 2004

THUNG SAMRIT SERIES **Field Symbol: Tsr**

Distribution: Occupies moderate of Northeastern Plateau.

Setting: Tung Samrit soils are formed from alluvium (recent or semi-recent) and occur on river basin and backswamp areas of flood plains. Relief is level which slope is less than 1 percent. Elevation is from 110 to 200 m above sea level. The climate is Tropical Savanna (Köppen 'Aw'). Average annual precipitation is from 1,100 to 2,000 mm. Mean annual air temperature varies from 26 to 28^{o}C.

Drainage, Permeability and Runoff: Poorly drained soils. They are flooded by river water and rainwater in the wet season. Ground water table falls below 1.5 meters, but is not deeper than 3 meters during the peak of the dry period. Permeability and surface runoff are slow.

Vegetation and Land Use: Mainly used for transplanted and broad casted rices and some are covered by grasses and shrubs.

Characteristic Profile Features: The Thung Sumrit is a member of the very fine, smectitic isohyperthermtc Typic Natraquerts. They are very deep soils and are characterized by a dark gray or dark grayish brown clay or silty clay A horizon overlying a gray or light gray cambic B and C horizon Mottles of yellowish brown, strong brown and/ or yellowish red colors occur throughout the profile Distinct slicktnsides and pressure face s occur in the cambic B especially in the upper parts. Reaction is medium acid to slightly acid over slightly acid to moerately alkaline

Typifying Pedon: Profile code NE-S-20/53

Location: 1.5 km east of Thalat Kae, 100 m on the left side of Thalat Kae to Phimai road. Tung Samrit, Amphoe Non Sung Changwat Nakhon Ratchasima.

Sheet Name: Amphoe Non Sung **Sheet No.:** 5439 II
Coordinate: 229877 **Elevation:** 200 m
Relief: level **Slope:**: <1%
Physiography: river basin and backswamp (flood plain)
Parent material: alluvium
Drainage: poorly drained **Permeability:** slow
Runoff: slow **Ground water depth:** >1.5 m
Flooding depth: 50-60 cm **Duration:** 5-6 month **Frequency:** every year
Annual rainfall: 1,181.1 mm **Mean temp:** 26.2 ^{o}C **Climate type:** Tropical Savannah
Natural vegetation and/or land use: transplanted and broadcasted rices
Other:
Described by: F.R. Moormann et. al. **Date:** 1961
Revised by:

Horizon	Depth (cm)	Description
Apg	0-18	Dark gray (10YR4/1) clay; many fine distinct yellowish red (5YR5/8) mottles along root channels; moderate medium and coarse subangular blocky structure; extremely firm, sticky, plastic; many fine and medium roots; medium acid (field pH 6.0); clear, smooth boundary.
Bssg1	18-48	Gray (10YR5-6/1) clay; many fine, medium distinct dark yellowish brown (10YR4/6), few fine distinct yellowish red (5YR5/6) and few medium distinct strong brown (7.5YR5/6) mottles; moderate coarse subangular blocky structure breaking to strong fine angular blocky structure; slightly firm, sticky, plastic; common fine, few medium and

		coarse roots; few soft iron oxide nodules; many slickensides and pressure faces; some dark brown (10YR3/3) materials coating on ped faces; slightly acid (field pH 6.5); gradual, smooth boundary.
Bssg2	48-94	Gray (10YR5-6/1) clay; many medium distinct yellowish brown (10YR5/6) and common medium distinct strong brown (7.5YR5/6) mottles; moderate coarse subangular blocky structure breaking to strong medium and fine angular blocky structure; slightly firm, sticky, plastic; common fine, few medium and coarse roots; many slickensides; some patchy of dark gray (10YR4/1) coating on cracking faces; slightly acid, (field pH 6.5); clear, wavy boundary.
Bssg3	94-120	Dark gray (80% 5YR4/1) and gray (20% 10YR6/1) clay; common medium dark yellowish brown (10YR4/6), reddish brown (5YR4/4) and few fine brownish yellow (10YR6/8) mottles; moderate coarse subangular blocky structure; slightly firm; sticky, plastic; few fine and medium roots; few slickensides and pressure faces; slightly acid (field pH 6.5); gradual, smooth boundary.
Bg	120-160+	Dark gray (5YR4/1) clay; common medium distinct strong brown (7.5YR5/6) mottles; firm, sticky, plastic; neutral (field pH 7.0).

Remark : The soils of Tung Samrit series crack deeply and widely in the dry season and contain distinct slickensides and pressure faces.

Type Location: The soils had described first at Tung Samrit salted area Amphoe Phimai Changwat Nakhon Ratchasima

Range of Profile Features:

The thickness of an A or Ap horizon vary from 15 to 40 cm and has 7.5YR or 10 YR hues, values of 3 to 4 and chroma of 1 to 2 Texture of silty clay may occur. Structure is weak to moderate medium and or coarse blocky. Field pH values vary from 5.5 to 7.0.

The B horizon has 10YR hue, values of 5 to 6 and chroma of 1 on the upper part, but color of 6/2 may be found in the lower part. Structure is moderate medium and/or coarse blocky. Field pH values vary from 6.0 to 7.0. The B horizon contain distinct slickensides and some iron manganese oxide nodules.

The C horizon has 10YR, 7.5YR or 5YR hues values of 4 to 7 and chroma 1 or 0. Chroma of 2 may occure in place. Structure is massive to weak coarse blocky Field pH values vary from 6.5 to 8.0. The sandy 2C horizon may occure at some depth below 150 cm from the soil surface. They crack, deeply and wildly in the dry season

Similar soilseries :

Kula Rong Hai (Ki) is Typic Natraqualfs of fine loamy particle size class.

Phimai series (Pm) :has similar profile ,but it is Ustc Endoaquerts.

Ratchaburi series(Rb): has browner color chroma is 2 or more.

Principal Associated Soils: Thes include Ratchaburi, Udon , Roi-et and Kula Ronghai soils.

ANALYSIS RESULTS **Profile code no.:NE-S-20/53**

(oven dry basis) **Soil series : Thung Samrit (Tsr)**

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_4OAc
			USDA grading			Sand-fraction grading					Lab	Field	1:1	1:1			
			sand	silt	clay	vc	c	m	f	vf	result	estim[n]	water	KCl			
	0-18	Apg	6.5	28.0	65.5						c		4.9	4.1	0.9	3.4	196
	18-48	Bssg1	3.5	20.0	76.5						c		5.2	4.4	1.2	2.2	184
	48-94	Bssg2	2.5	19.0	78.5						c		5.5	4.9	1.4	1.9	181
	94-120	Bssg3	3.5	36.5	60.0						c		5.2	4.4	1.1	1.9	96
	120-160+	Bg	13.5	16.0	70.5						c		5.2	4.5	0.6	1.6	117

Depth (cm)	Air dried to oven dried	C %	N %	Exchange capacity and cations ($cmol_{(+)}$ kg^{-1})									Base satur[n] (%)		ECEC	Al	Electrical condut[y]
				Ca	Mg	K	Na	SUM cations (B)	Extr. acidity (A)	SUM (B+A)	CEC NH_4OAc (C)	CEC 100g Clay	B/Cx100	(Bx100)/ (B+A)	$cmol_{(+)}$ kg^{-1} (B+D)	KCl extr. $cmol_{(+)}$ kg^{-1} (D)	(ECx10^6) dS m^{-1}
0-18	4.4	1.45		15.30	4.60	0.50	3.70	24.10	13.60	37.70	37.10	56.6	65	64			0.40
18-48	5.7	0.69		22.00	5.10	0.40	6.70	34.20	12.00	46.20	43.80	57.3	78	74			0.40
48-94	7.1	0.44		27.00	5.40	0.40	10.00	42.80	10.90	53.70	50.30	64.1	85	80			0.73
94-120	4.2	0.60		13.10	2.80	0.20	7.40	23.50	9.10	32.60	29.20	48.7	80	72			0.57
120-160+	6.5	0.52		15.50	3.40	0.20	9.90	29.00	8.60	37.60	34.30	48.7	85	77			0.60