Proposed by: R.L. Pendleton, 1953
Revised by:
1. N. Chorphaka, 1988
2. A. Potichan, 2004

MAE TAENG SERIES — Field Symbol: Mt

Distribution: Occupies small to moderate extent in Northern Thailand.

Setting: Mae Taeng soils are formed from old alluvium on the undulating to hilly terrains of the high terraces. Slopes range from 3 to 35%. The climate is Tropical Savanna (Koppen 'Aw'). The average annual precipitation ranges from 1,100 to 1,800 mm.

Drainage, Permeability and Runoff: Well drained. Permeability is estimated to be moderate. Runoff is slow to rapid.

Vegetation and Land Use: The soils are mainly covered with mixed deciduous and secondary dipterocarp forest. Many areas have been cleared for upland crops and fruit trees such as upland rice, maize, sugarcane, ground nut, longan, lychee etc.

Characteristic Profile Features: Mae Taeng series is a member of fine, kaolinitic, isohyperthermic Rhodic Kandiustults. They are very deep soils and characterized by a dark brown or dark reddish brown sandy loam or sandy clay loam A horizon overlying a reddish brown and red clay kandic B horizon which contains a discernible sand fraction. Reaction is slightly to very strongly acid, decreasing with depth.

Typifying Pedon: Chiang Mai Profile code no. is N-35/139 (moist colour unless otherwise stated).

Location: Approximately 43.2 km north of Chiang Mai, along Chiang Mai-Fang highway, Ban Nong Bua, Amphoe Mae Taeng Changwat Chiang Mai.

Sheet Name: Amphoe Mae Taeng **Sheet No.:** 4747 II
Coordinate: 945169 **Elevation:** 400 m (MSL)
Relief: undulating **Slope:** 5-6 %
Physiography: dissected old terraces or alluvial fans
Parent material: old alluvium
Drainage: well drained **Permeability:** moderate
Runoff: moderate **Ground water depth:** >3 m
Flooding depth: - **Duration:** - **Frequency:** -
Annual rainfall: 1,183.5 mm **Mean temp.:** 25.4 ^{o}C **Climate type:** Tropical Savannah (Aw)
Natural vegetation or land use: dipterocarp forest
Described by: P.Hemsrichart, N.Chawpaka, T.Verrasilp and K.Saifuk **Date:** 16 April, 1980
Revised by: Aniruth Potichan **Date:** 24 May, 2004

Horizon	Depth (cm)	Description
A	0-12	Dark brown (7.5YR3/4) sandy loam; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine roots; common charcoal pieces; medium acid (field pH 6.0); abrupt and smooth boundary.
Bt1	12-19	Reddish brown (2.5YR4/4) sandy clay loam; weak fine and medium subangular blocky structure; very hard, firm, sticky and slightly plastic; patchy thin clay coatings on ped faces and in pores; common very fine and few medium roots; common rounded ironstone nodules and common fine Fe/Mn nodules; very strongly acid (field pH 4.5); clear and smooth boundary.
Bt2	19-40	Dark reddish brown (2.5YR3/4) clay; moderate coarse prismatic breaking to moderate medium and coarse subangular blocky structure; hard, friable, sticky and slightly plastic; broken moderately thick clay coatings on ped faces and in pores; common very fine and medium roots; common rounded

		iron stone nodules and fine Fe/Mn nodules and 4.5 cm termite hole; very strongly acid (field pH 4.5); clear and smooth boundary.
Bt3	40-100	Dark red (2.5YR3/6) clay; strong medium and coarse subangular blocky structure; hard, friable, sticky and slightly plastic; broken moderately thick clay coatings on ped faces and in pores; common very fine, few fine and medium roots; common fine Fe/Mn nodules; very strongly acid (field pH 4.5); diffuse and smooth boundary.
Bt4	100-145	Dark red (2.5YR3/6) clay; strong medium and coarse subangular blocky structure; hard, friable, sticky and slightly plastic; broken moderately thick clay coatings on ped faces and in pores; few very fine and fine roots; common fine Fe/Mn nodules; very strongly acid (field pH 4.5); gradual and smooth boundary.
Bt5	145-200	Dark red (2.5YR3/6) clay with discernable sand fraction; strong coarse and very coarse subangular blocky structure; very hard, firm, sticky and slightly plastic; continuous moderately thick clay coatings on ped faces and in pores; few fine roots; common fine Fe/Mn nodules; very strongly acid (field pH 4.5).

Type Location:

Amphoe Mae Taeng, Changwat Chiang Mai. The site was on the convex summit in undulating country, approximately 43.1 km north of Chiang Mai along Chiang Mai-Fang highway (Sheet Name Amphoe Mae Taeng no. is 4768 II).

Range of Profile Features:

The A horizon is form 10 to 20 cm thick, has 7.5YR or 5YR hues, values of 2 or 3 and chromas of 2 to 4. With a range of texture from loamy sand to sandy loam or sandy clay loam. The structure of the surface horizon is single grain or weak fine subangular blocky and pH values range from 5.5 to 6.5.

The B horizon has hues of 2.5YR to 10R, values of 3 or 4 and chromas of 6 or 8. The B horizon is kandic showing evidence of ferri-argillan on ped faces and in pores. The structure is moderate to strong fine and medium subangular blocky and pH values range from 4.5 to 5.5.

Similar Soil Series:

Hang Chat series (Hc): has colors of 5YR or 2.5YR in hues in the B horizon and derived from alluvium over residuum from granite.

Warin series (Wn): has colors of 5YR or 2.5YR in hues in the B horizon and derived from old alluvium or wash deposits from sandstone.It is also in the fine-loamy particle size class family.

Yasothon series (Yt): has similar profile but belongs to fine-loamy particle size class family.

Principal Associated Soils:

These include Mae Rim and Warin series.

ANALYSIS RESULTS

(oven dry basis)

Profile code no.: N-35/139

Soil series: Mae Taeng : Mt

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			
3-10796	0-12	A	59.3	25.1	15.6	1.6	8.4	18.6	20.2	10.5	sl	sl	5.3	4.4		10.6	109
3-10797	12-19	BA	55.0	21.7	23.3	2.7	10.2	15.5	19.4	7.2	scl	scl	5.2	4.1		3.6	129
3-10798	19-40	Bt1	42.9	21.3	35.8	1.9	6.9	13.9	13.4	6.8	cl	c	5.0	3.8		1.3	151
3-10799	40-100	Bt2	38.3	13.3	48.4	2.5	7.3	15.7	7.6	5.2	c	c	5.2	3.5		1.1	87
3-10800	100-145	Bt3	39.7	14.4	45.9	2.7	7.8	14.5	9.5	5.2	c	c	5.1	3.7		1.3	25
3-10801	145-200	Bt4	34.4	16.8	48.8	2.2	5.2	11.1	10.0	5.9	c	c	5.0	3.7		1.3	28

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_4OAc (C)	CEC 100g Clay	B/Cx100	(Bx100)/ (B+A)			
0-12	1.6	1.05		1.60	1.30	0.20	0.20	3.30	9.00	12.30	7.7	49.4	43	27			0.59
12-19	2.3	0.83		1.10	1.10	0.30	0.20	2.70	7.60	10.30	6.8	29.2	40	26			0.22
19-40	2.1	0.16		0.30	0.50	0.30	0.10	1.20	8.50	9.70	6.5	18.2	18	12			0.03
40-100	1.9	0.18		0.40	0.70	0.20	0.20	1.50	8.60	10.10	6.8	14.0	22	15			2.01
100-145	4.3	0.22		0.60	0.60	0.10	0.20	1.50	8.60	10.10	6.5	14.2	23	15			0.88
145-200	2.0	0.16		0.70	0.50	0.10	0.30	1.60	8.60	10.20	6.5	13.3	25	16			0.83

Surveyor: P.Hemsrichart, N.Chawpaka, T.Verrasilp and K.Saifuk

Date: 16 April, 1980