Proposed by A. Pittayarak, 1972
Revised by ;
P. Vijarnsorn and staffs, 1988
W. Sirichuaychoo, 2004

PHAWONG SERIES **Field Symbol: Paw**

Distribution: Occupies a small extension Peninsular Thailand.

Setting: Phawong soils are formed from alluvium and occurred on alluvial fan. Relief is level with slope less than 1 percent. Elevation is less than 10 m above mean sea level. The climate is Tropical Monsoon (Koppen 'Am') or Tropical Rain Forest (Koppen 'Af'). Average annual precipitation is above 2,000 mm Average annual air temperature is from 26 ^{o}C to 28^{o}C.

Drainage, Permeability and Surface Runoff: Drainage is poorly drained, permeability is estimated to be slow and surface runoff is slow. Ground water level falls within 1 meter through out the year. Flooding commonly occurred for 6 to 7 months a year.

Vegetation and Land Use: Used almost exclusively for paddy rice.

Characteristic Profile Features: The Phawong series is a member of the very-fine, kaolinitic, isohyperthermic Umbric Paleaquults (soil taxonomy, 2003). They are very deep soils and are characterized by a very dark grayish brown clay loam umbric epipedon overlying a gray clay argillic B horizon. Coated color of grayish brown may be observable within argillic B horizon. Mottles of yellowish and brownish occur distinctly throughout the soil profile. Very strongly acid to strongly acid, reaction values range from 4.5 to 5.0 throughout the profile.

Typifying Pedon: Phawong clay loam - paddy field, from Ban Nam Krachai, Amphoe Muang, Changwat Songkhla, less than 2 percent slopes, shallow than 1 meter ground water depth.

Profile Code Number: S-68/100, described by Anan Pittayarak, 10 March 1972 (moist colors unless otherwise stated).

Horizon	Depth (cm)	Description
Ap	0-15	Very dark grayish brown (10YR3/2) clay loam; common fine distinct yellowish brown (10YR5/6) mottles; weak medium subangular blocky structure; firm, slightly sticky and slightly plastic; common fine interstitial pores; common fine roots; very strongly acid (field pH 5.0); clear smooth boundary.
AB	15-30	Very dark grayish brown (10YR3/2) clay; many fine distinct yellowish brown (10YR5/8) mottles; weak medium and coarse subangular blocky structure; very firm, sticky and plastic; common fine interstitial and few fine tubular pores; common fine roots; very strongly acid (field pH 5.0); clear smooth boundary.
Btg1	30-48	Brown (7.5YR5/2) clay; few fine distinct strong brown (7.5YR5/6) mottles; weak medium subangular blocky structure; firm, sticky and plastic; common thin clay films on ped faces; common fine interstitial and tubular pores; few fine roots; very strongly acid (field pH 5.0); clear smooth boundary.
Btg2	48-80	Gray (5YR5/1) clay; common medium distinct strong brown (7.5YR5/8) mottles; moderate medium and coarse subangular blocky structure; firm, sticky and plastic; moderately thick clay films on ped faces; common fine interstitial and tubular pores; very strongly acid (field pH 5.0); clear smooth boundary.
Btg3	80-100	Gray (5YR5/1) clay; common medium distinct strong brown (7.5YR5/8) mottles; moderate medium and coarse subangular blocky structure; firm, sticky and plastic; many moderately thick clay films on ped faces; common fine interstitial and few fine tubular pores; very strongly acid (field pH 5.0).

Type Location:

Name of subdistrict, Amphoe Muang, Changwat Songkhla.

Range of Profile Features:

The A horizon or umbric epipedon clay loam or silty clay loam is from 25 to 35 cm in thickness and has 10YR hue, values 3 or 4 and chromas 1 or 2. Structure is weak medium subangular blocky. Very strongly acid to strongly acid, reaction values range from 4.5 to 5.0.

The argillic B horizon has 7.5YR, 10YR or 2.5Y hues, values 5 or 6 and chromas less than 2, mottles of 10YR or 7.5YR hues, values 5 or 6 and chromas 6 or 8 are commonly present throughout the soil profile. Structure is moderate medium and coarse subangular blocky. Very strongly acid to strongly acid, reaction values range from 4.5 to 5.0.

Similar Soil Series:

Khlong Khut series (Kut): fine, kaolinitic, isohyperthermic Kandic Plinthaquults, has plinthite more than 50 percent within 150 cm from the soil surface.

Principal Associated Soils:

These include Bang Nara and Khlong Kut soils.

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

ANALYSIS RESULTS (oven dry basis)

Profile code No.: S-68/100

Soil series: Phawong series (Paw)

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			
Pc-437	0-15	Ap	8.0	54.5	37.5						sicl	cl	4.4	3.7	0.0	14.4	59
Pc-438	15-30	AB	3.0	37.0	60.0						c	c	4.6	3.5	0.0	3.9	29
Pc-439	30-48	Btg1	4.5	31.0	64.5						c	c	4.7	3.6	0.0	2.6	35
Pc-440	48-80	Btg2	3.5	33.5	63.0						c	c	4.7	3.5	0.0	3.4	53
Pc-441	80-100	Btg3	5.5	33.5	61.0						c	c	4.7	3.4	0.3	2.8	64

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 condut^{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)			
0-15	3.2	5.05		1.10	0.60	0.10	0.30	2.10	25.20	27.30	20.0	53.3	11	8			0.05
15-30	3.5	2.79		0.40	0.30	0.10	0.20	1.00	18.60	19.60	16.7	27.8	6	5			0.02
30-48	2.9	0.83		0.30	0.40	0.10	0.20	1.00	14.70	15.70	12.5	19.4	8	6			0.02
48-80	3.0	0.73		0.20	0.70	0.10	0.20	1.20	16.90	18.10	15.9	25.2	8	7			0.02
80-100	2.2	0.52		0.20	0.70		0.50		15.60		13.1	21.5					0.02

Surveyor: A. Pitayarak

Date: March 10, 1972

Reported by: W. Sirichuaychoo

Date: Nov. 7, 1998