Proposed by P. Vijarnsorn,1973
Revised by :
P. Vijarnsorn and staffs, 1988
W. Sirichuaychoo, 2004

PHAYOM NGAM SERIES **Field Symbol: Pym**

Distribution: Occupies a small extent in Peninsular Thailand.

Setting: Phayom Ngam soils derived from fine grain clastic rocks namely shale, phyllite or equivalent rocks and occurred on denudation surface. Relief is nearly level to gently undulating. Slopes ranges from 2 to 5 percent. The climate is Tropical Rain Forest (Koppen 'Af') climate. Average annual precipitation is from 2,000 to 2,500 mm Mean annual air temperature is from 26 ^{o}C to 28^{o}C.

Drainage, Permeability and Surface Runoff: Drainage is somewhat poorly drained, slow permeability is slow and surface runoff is slow.

Vegetation and Land Use: The major of these soils have been cleared for para rubber, oil palm and fruit trees. Some areas used for transplanted rice and upland rice.

Characteristic Profile Features: Phayom Ngam series is member of fine-loamy, kaolinitic, isohyperthermic Kandic Plinthaquults (soil taxonomy, 2003). They are moderately deep soils to ironstones and are characterized by dark grayish brown to brown loam surface or A horizon overlying light brownish gray or white clay loam over very gravelly clay with many red mottles (plinthite) that form a continuous phase or more than half of the matrix within 150 cm from thesoil surface. Very strongly acid to strongly acid, reaction values range from 5.0 to 5.5.

Typifying Pedon: Phayom Ngam loam - opened grassland, from Phayom Ngam Land Settlement, Amphoe La-ngu, Changwat Satun, 3 to 4 percent slopes, 150 cm ground water table depth (sheet number 4922 I NW).

Profile Code Number: S-67/70, described by P. Pramojanee, 27 July 1973 (moist colors unless otherwise stated).

Horizon	Depth (cm)	Description
Apg	0-13	Dark grayish brown (10YR4/2) loam; few fine faint root mottles; weak to moderate coarse subangular blocky structure; friable, nonsticky and slightly plastic; common fine interstitial pores; many fine roots; strongly acid (field pH 5.5); clear smooth boundary.
BAg1	13-22	Grayish brown to light brownish gray (10YR5-6/2) loam; many fine distinct strong brown (7.5YR5/6) mottles; weak coarse subangular blocky structure; slightly firm, slightly sticky and slightly plastic; few very fine and fine tubular pores; many fine roots; very strongly acid (field pH 5.0); gradual, smooth boundary.
BAg2	22-34	Light brownish gray (10YR6/2) loam; many fine distinct strong brown (7.5YR5/8) mottles; weak coarse subangular blocky structure; slightly firm, sticky, plastic; common fine interstitial pores, common very fine and fine tubular pores; very strongly acid (field pH 5.0); clear smooth boundary.
Btgv	34-63	Light gray (10YR7/1) clay loam; many fine prominent of red (2.5YR4/8, plinthite) and many fine to medium distinct of strong brown (7.5YR5/8) mottles; weak to moderate coarse subangular blocky structure; slightly firm, sticky and plastic; few patchy cutan on ped faces; common fine interstitial and tubular pores; few fine roots; very strongly acid (field pH 5.0); clear smooth boundary.
Btcgv	63-95	White (10YR8/1) brownish yellow (10YR6/6) and red (2.5YR5/8, plinthite) very gravelly clay loam; friable, sticky and plastic; few patchy cutan on ped faces; very few very fine roots; gravels composed of iron stones about 70% by volume of the soil matrix; very strongly acid (field pH 5.0); clear smooth boundary.

BCg 95-110 White (10YR8/1) Yellowish red (5YR5/8) and red (10YR4/6) color of weathering shale, clay; moderate fine to medium angular blocky structure; many fine to medium interstitial and few very fine tubular pores; common visible weathering shale but not aggregate; very strongly acid (field pH 5.0).

Remark: Plinthite more than 50% by volume of the soil matrix or continuous phase.

Type Location:

Name of village, Ban Phayom Ngam, Amphoe La-ngu, Changwat Satun.

Range of Profile Features:

The surface or A horizon loam or clay loam is ranges from 15 to 30 cm in thickness, has 10YR or 7.5YR hues, values 3 to 4 and chromas 2 to 4 . Soil texture is silt loam to silty clay loam may occurred. Very strongly acid to strongly acid, reaction values range from 4.5 to 5.5.

The upper kandic B horizon clay loam, has 10YR or 7.5YR hues, values 6 to 7 and chromas 1 to 2. Common strong brown and red mottles. Very strongly acid to strongly acid, reaction values range from 4.5 to 5.5.

The lower argillic B horizon very gravelly clay, has 10YR or 7.5 in hues, values 6 to 8 and chromas 1 to 2, occur between 50 to 100 cm from the soil surface. Many red mottles (plinthite) formed a continuous phase or more than half of the matrix and strong brown mottles. Very strongly acid to strongly acid, reaction values range from 4.5 to 5.5.

Similar Soil Series:

Kan Tang series (Kat): clayey-skeletal, kaolinitic, isohyperthermic Typic (Aquic) Plinthudults, shallow soils.

Principal Associated Soils:

Phayom Ngam series is associated with Kan Tang, Na Tham, Yan Ta Khao and Khao Khat series.

Na Tham series (Ntm): fine-loamy, mixed, semiactive, isohyperthermic Typic (Aquic) Plinthudults.

Yan Ta Khao series (Yk): loamy-skeletal, mixed, semiactive, isohyperthermic Typic (Aeric) Plinthaquults.

Khao Khat series (Kkt): clayey-skeletal, kaolinitic, isohyperthermic Typic (Kandic) Plinthudults.

ANALYSIS RESULTS Profile code No.: S-67/70

(oven dry basis) Soil series: Phayom Ngam series (Pym)

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			
Pd-1741	0-13	Apg	31.5	53.5	15.0						sil	l	5.5	4.0	0.0	2.8	70
Pd-1742	13-22	BAg1	30.0	48.0	22.0						l	l	5.3	3.9	0.0	2.6	53
Pd-1743	22-34	BAg2	31.5	44.5	24.0						l	l	5.2	3.8	0.0	2.6	44
Pd-1744	34-63	Btgv	27.5	41.0	31.5						cl	cl	5.2	3.8	0.0	1.6	41
Pd-1745	63-95	Btcgv	24.0	38.5	37.5						cl	vgcl	5.8	4.0	0.0	1.6	50
Pd-1746	95-110	BCg	12.5	42.5	45.0						sic	c	5.7	3.6	0.3	1.9	47

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)			
0-13	0.1	2.41		0.20	0.20	0.10	0.10	0.60	10.40	11.00	6.0	40.0	10	5			0.18
13-22	0.1	1.60		0.20	0.10	0.10	0.20	0.60	8.90	9.50	6.5	29.5	9	6			0.04
22-34	0.1	1.11		0.10	0.10	0.10	0.20	0.50	8.90	9.40	5.2	21.7	10	5			0.02
34-63	0.1	0.62		0.20	0.10	0.10	0.20	0.60	7.70	8.30	5.7	18.1	11	7			0.02
63-95	0.1	0.62		0.20	0.10	0.10	0.20	0.60	9.20	9.80	7.5	20.0	8	6			0.01
95-110	1.1	0.47		0.30	0.10	0.10	0.30	0.80	10.00	10.80	9.0	20.0	9	7			0.02

Surveyor: P. Pramojanee Reported by: W. Sirichuaychoo

Date: July 27, 1973 Date: Nov. 4, 1998