Proposed by: R.L. Pendleton - 1929
Revised by: 1. P. Hemsrichart, 1988
B. Boonsompopphan,
2. K. Malairodsiri,
S. Sukchan, 2004

ROI ET SERIES **Field Symbol: Re**

Distribution: Occupies large extent in Northeast Plateau.

Setting: Roi Et soils are formed from washed deposit from sandstone and occur on the lower part of peneplain. Relief is level to nearly level which slopes are 2 or less. Elevation varies from 100 to 200 m above sea level. The climate is Tropical Savanna (Köppen 'Aw'). Average annual precipitation of the Northeast varies from 1,100 to 2,200 mm. Mean annual air temperature is from 26 to 28^{o}C.

Drainage, Permeability and Runoff: Somewhat poorly drained soils. Permeability is moderate to slow. Runoff is slow. These soils are flooded by impounded rain water up to 30 cm deep for 3 to 4 months. Ground water table is below 3 meters during the peak of the dry season.

Vegetation and Land Use: Used for transplanted rice in the wet season and for some upland crops such as corn, water melon and beans after rice harvesting.

Characteristic Profile Features: The Roi Et series is a member of the fine-loamy, mixed, subactive, isohyperthermic, Aeric Kandiaquults. They are deep soils and are characterized by a variable colors, but dominant colors are grayish brown or light brown sandy loam A horizon overlying a light brown grading to pinkish gray sandy clay loam or loam kandic B horizon which in turn overlies a light gray or whitish clay loam or clay C horizon. They are mottled throughout the profile with common to many strong brown or yellowish brown or dark brown and some yellowish red or red mottles in the subsoil. Reaction is medium acid over strongly to very strongly acid.

Typifying Pedon: Profile code no. is NE-N-32/8 (moist colors unless otherwise stated)

Location: Huai Si Thon Pilot Farm, Amphoe Mueang Changwat Kalasin.
Sheet Name: Changwat Kalasin **Sheet No.:** 5760 III
Coordinate: 205428 **Elevation:**
Relief: level to nearly level **Slope:**: 0-1%
Physiography: lower part of peneplain
Parent material: washed deposit from sandstone
Drainage: somewhat poorly drained **Permeability:** moderate to slow
Runoff: slow **Ground water depth:**
Flooding depth: 30 cm **Duration:** 3-4 month **Frequency:** every year
Annual rainfall: **Mean temp:** **Climate type:** Tropical Savannah
Natural vegetation and/or land use: transplanted rice
Other:
Described by: S. Nonthapan **Date:** 11 November 1969
Revised by:

Horizon	Depth (cm)	Description
Ap	0-19	Brown (7.5YR 5/2) sandy loam; common fine and medium distinct yellowish brown (10YR 5/6) mottles; weak fine subangular blocky structure; very friable, nonsticky, nonplastic; common fine tubular pores; some dark patchy decomposed organic matter and some spots of pinkish fine sand; strong acid; (field pH 5.5) abrupt, wavy boundary.
BA	19-38	Light brown (7.5YR 6/4) sandy clay loam; many medium distinct strong brown (7.5YR 5/6) and common fine yellowish red (5YR 5/8) mottles; weak fine and medium subangular blocky structure; slightly firm, slightly

		sticky, slightly plastic; few medium interstitial and common very fine and fine tubular pores; some dark patchy decomposed organic matter along old root channels; medium acid (field pH 6.0) abrupt, smooth boundary.
Btg1	38-50	Pinkish gray (7.5YR 7/2) sandy clay loam; common fine and medium distinct yellowish brown (10YR 5/6) and strong brown (7.5YR 5/6) mottles; weak medium subangular blocky structure; slightly sticky, slightly plastic; common very fine and fine tubular pores; some black spots of soft manganese concretions; few fine roots medium acid (field pH 6.0); clear, smooth boundary.
Btg2	50-74	Pinkish gray (7.5YR 7/2) sandy clay loam; many fine and medium yellowish brown (10YR 5/8) mottles; weak medium subangular blocky structure; slightly sticky, slightly plastic; many fine tubular pores and few medium interstitial pores; very few fine roots; very strongly acid (field pH 5.0); clear, smooth boundary.
BCg	74-93+	Light brownish gray (10YR 6/2) sandy clay loam; many fine and medium distinct yellowish brown (10YR 5/6) and few fine distinct strong brown (7.5YR 5/6) mottles; weak fine subangular blocky structure; sticky, slightly plastic; thin layer of soft iron-manganese concretions at upper part of the horizon; many fine tubular pores; very few fine roots; very strongly acid (field pH 5.0).

Type Location: The Roi Et series was named for Changwat Roi Et, in which soils of this series were first described by R.L. Pendleton in 1929 and that time were called "Roi Et-fine sandy loam". The revision was made by F.R. Moormann et.al in 1964 and were called as "Roi Et series".

Range of Profile Features:

The thickness of the A horizon varies from 10 to 20 cm and has 10YR or 7.5YR hues, values of 4 to 6 and chromas of 2 to 4. Textures of loamy sand may occur. Structure is weak medium and/or coarse blocky. Field pH value is from 5.0 to 6.5.

The B horizon has 7.5YR or 10YR hues, values of 5 to 7 and chromas of 2 to 4. Textures of loam or clay loam may occur. Structure is weak to moderate fine to medium blocky. Few to common soft and hard iron-manganese concretions may occur. Field pH value is from 4.5 to 6.0.

The C horizon usually occur at some depth below 1 m and has 10YR and 7.5YR hues, values of 6 to 8, chromas of 2 or less. Structure is massive to weak coarse blocky. Field pH value is from 4.5 to 5.5.

Similar Soil Series:

Tha Tum series (Tt): has dominant red mottles in the subsoil. The clay layer occurs at shallower depth, usually above 60 cm.

Kula Ranghai series (Ki): has higher pH value in the subsoil, usually 7.0 to 8.0.

Renu series (Rn): is (Aeric) Plinthic Paleaquults.

Principal Associated Soils: These include Khorat, Tha Tum, Kula Ronghai soils. Only the Khorat soils occupy on the middle parts of peneplain .

ANALYSIS RESULTS **Profile code no.:NE-N23/8**

(oven dry basis) **Soil series : Roi Et (Re)**

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			
	0-19	Ap	67.9	11.6	20.5						sl	sl	5.2	4.6	0.2	16.1	66
	19-38	BA	62.8	16.2	21.0						scl	scl	5.5	4.5	0.0	2.0	51
	38-50	Btg1	65.4	9.6	25.0						scl	scl	5.5	4.4	0.5	1.2	45
	50-74	Btg2	63.2	13.3	23.0						scl	scl	5.0	4.0	0.0	1.2	39
	74-93	Btg3	65.3	14.2	20.5						scl	scl	5.1	4.0	0.2	1.0	27

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}
0-19	0.2	0.33	0.03	1.60	0.20	0.20	0.20	2.20	1.50	3.70	2.50	12.2	88	59			0.02
19-38	2.0	0.06	0.01	1.40	0.30	0.10	0.10	1.90	0.80	2.70	2.00	9.5	95	70			0.01
38-50	3.0	0.03	0.01	1.40	0.70	0.10	0.20	2.40	1.20	3.60	2.90	11.6	83	67			0.01
50-72	2.0	0.04	0.01	1.60	0.50	0.10	0.10	1.30	2.40	3.70	3.30	14.0	39	35			0.01
74-93	1.5	0.05	0.01	0.40	0.40	0.10	0.10	1.00	2.20	3.20	3.10	15.1	32	31			0.01