

Proposed by F.R. Moormann, 1964  
Revised by :  
P. Vijarnsorn and staffs, 1988  
W. Sirichuaychoo, 2004

## RAYONG SERIES

Field Symbol: Ry

**Distribution:** Occupies a small extent in Southeast Coast of Thailand and in Peninsular Thailand.

**Setting:** Rayong soils are formed from strongly leached quartz sand or marine deposits and occurred on old beach ridge and dunes sand, with a level to gently undulating topography along the coastal plains. Slope ranges from 1 to 5 percent. Elevation ranges from 3 to 10 m above mean sea level. The climate is transitional zone between Tropical Savanna (Koppen 'Aw') and Tropical Monsoon (Koppen 'Am'). Average annual precipitation is from 1,100 to 1,800 mm Average annual air temperature is from 26 °C to 27°C.

**Drainage, Permeability and Surface Runoff:** Drainage is excessively drained, permeability is rapid and surface runoff is medium to slow. Ground water level falls below 1.5 m throughout the year.

**Vegetation and Land Use:** mainly shrubs, bamboo and cactus. Some village crops such as coconut and banana.

**Characteristic Profile Features:** The Rayong series is a member of the isohyperthermic, uncoated Typic Quartzipsamments (soil taxonomy, 2003). They are very deep sandy soils and are characterized by a very dark gray, very dark grayish brown or dark grayish brown sand surface or A horizon overlying a pinkish gray or light brown or pale brown sand C horizon. Strongly acid to neutral, reaction values range from 5.5 to 7.0 at the surface and moderately acid to slightly acid, reaction values range from 6.0 to 6.5 in the subsoil.

**Typifying Pedon:** Rayong sand - shrubs and coconut trees, from 2 km to Rayong, on left side, Amphoe Muang, Changwat Rayong, 5 to 10 m above mean sea level, less than 2 percent slopes.

**Profile Code Number:** SE-16/8, described by C. Chaengprai and M. Singhawara, 8 August 1973 (moist colors unless otherwise stated).

Horizon Depth (cm)	Description
A 0-10	Very dark gray (10YR3/1) sand; single grains and weak fine granular structure; loose, nonsticky and nonplastic; many fine interstitial pores; many very fine, fine and few coarse roots; very strongly acid (field pH 5.0); clear slightly wavy boundary.
C1 10-44	Pale brown to light yellowish brown (10YR6/3-4) sand; single grains and weak fine granular structure; loose, nonsticky and nonplastic; many fine interstitial pores; many very fine, fine and few medium roots; slightly acid (field pH 6.5); gradual smooth boundary.
C2 44-75	Pinkish gray (7.5YR7/2) sand; single grains and weak fine granular structure; loose, nonsticky and nonplastic; many fine interstitial pores; few fine roots; slightly acid (field pH 6.5); diffuse smooth boundary.
C3 75-140	Pinkish gray to pink (7.5YR7/2-3) sand; single grains and weak fine granular structure; loose, nonsticky and nonplastic; many very fine interstitial pores; slightly acid (field pH 6.5).

### Type Location:

Named of province, Changwat Rayong.

### Range of Profile Features:

The surface or A or Ap horizon sand or loamy sand is from 5 to 15 cm in thickness and has 10YR hues, values 3 to 5 and chromas 1 to 3. Structure is single grain and/or very weak granular. Very strongly acid to neutral, reaction values range from 5.0 to 7.0.

The subsoil or C horizon sand or loamy sand has 7.5YR or 10YR hues, values 6 or 7 and chromas 3 or less. Structure is single grain and/or very weak granular. Mottles many occur in very deep subsoil, below 1 m of the surface. Very strongly acid to slightly acid, reaction values range from 5.0 to 6.5.

### Similar Soil Series:

Hua Hin series (Hh): isohyperthermic, coated Typic Quartzipsamments, has browner colors in the subsoil (chromas are 4 or more) and contain shell fragments.

Phattaya series (Py): isohyperthermic, coated Typic Quartzipsamments, coarse sand and browner colors in the subsoil (chromas are 4 or more).

Bacho series (Bc): isohyperthermic, coated Typic Quartzipsamments, has browner colors in the subsoil (chromas are 4 or more).

### Principal Associated Soils:

These include Hua Hin and Bacho series.

#### ANALYSIS RESULTS

(oven dry basis)

Profile code No.: SE-16/8

Soil series: Rayong series (Ry)

Lab No.	Depth (cm)	Horizon	Particle size distribution analysis (% by weight)								Texture		pH		CaCO <sub>3</sub> %	P, mg kg <sup>-1</sup> Bray 2	K, mg kg <sup>-1</sup> NH <sub>4</sub> OAc	
			USDA grading			Sand-fraction grading					Lab	Field	1:1 water	1:1 KCl				
			sand	silt	clay	vc	c	m	f	vf	result	estim <sup>n</sup>						
Pd-1646	0-10	A	98.0	1.0	1.0							s	s	5.2	3.8	0.6	5.0	27
Pd-1647	10-44	C1	99.5	0.5	0.0							s	s	5.6	4.2	0.6	5.8	21
Pd-1648	44-75	C2	99.5	0.0	0.5							s	s	6.0	4.5	0.6	3.6	18
Pd-1649	75-140	C3	99.5	0.0	0.5							s	s	6.1	4.5	0.6	3.6	24

Depth (cm)	Air dried to oven dried	C %	N %	Exchange capacity and cations (cmol <sub>(+)</sub> kg <sup>-1</sup> )										Base satur <sup>n</sup> (%)		ECEC cmol <sub>(+)</sub> kg <sup>-1</sup> (B+D)	Al KCl extr. cmol <sub>(+)</sub> kg <sup>-1</sup> (D)	Electrical conductivity (ECx10 <sup>6</sup> ) dS m <sup>-1</sup>
				Ca	Mg	K	Na	SUM cations (B)	Extr. acidity (A)	SUM (B+A)	CEC NH <sub>4</sub> OAc (C)	CEC 100g Clay	B/Cx100	(Bx100)/(B+A)				
0-10	0.3	0.65		0.20	0.10	0.20	0.30	0.80	1.50	2.30	1.3	130.0	62	35			0.03	
10-44	0.5	0.06		0.10	0.04	0.04	0.20	0.38	0.50	0.88	0.5	0.0	76	43			0.00	
44-75	0.1	0.04		0.10	0.04	0.07	0.10	0.31	0.20	0.51	0.2	40.0	100	61			0.01	
75-140	0.1	0.37		0.05	0.02	0.07	0.08	0.22	0.00	0.22	0.2	40.0	100	100			0.00	

Surveyor: C. Chaengrai & M. Singhawara

Reported by: W. Sirichuaychoo

Date: August 8, 1973

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