

Proposed by P. Vijarnsorn-1968
Revised by :
P. Vijarnsorn and staffs, 1988
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YI-NGO SERIES

Field Symbol: Yg

Distribution: Occupies small extent in Peninsular Thailand (Changwat Narathiwat).

Setting: Yi-ngo soils are formed from quartz, breccia and occurred on denudation surface. Relief is undulating to rolling. Slope ranges from 5 to 20 percent. Elevation ranges from 20 to 30 m above mean sea level. The climate is Tropical Monsoon (Koppen 'Am'). Average annual air temperature is from 26 °C to 28°C. Average annual precipitation is from 1,800 to 3,000 mm.

Drainage, Permeability and Surface Runoff: Drainage is well drained, permeability is estimated to be moderate and surface runoff is rapid.

Vegetation and Land Use: Originally under Tropical Evergreen Forest. Parts cleared for para rubber and oil palm plantation.

Characteristic Profile Features: Yi-ngo series is a member of the loamy-skeletal, mixed, semiactive, isohyperthermic Typic Paleudults (soil taxonomy, 2003). They are shallow soils to rock fragments and are characterized by a dark grayish brown or brown sandy loam or sandy clay loam surface or A horizon overlying a strong brown grading to yellowish red gravelly loam or gravelly clay loam argillic B horizon. The coarse fraction is predominantly composed of angular quartz gravels which is rather uniform in size (diameter between 2 to 10 mm).

Typifying Pedon: Yi-ngo sandy loam - para rubber plantation, Nam Saeng Rubber Plantation, Amphoe Muang, Changwat Narathiwat, 8 to 16 percent slopes.

Profile Code Number: S-71/2, described by S. Charoenpong, 16 December 1968 (moist colors unless otherwise stated).

| Horizon Depth (cm) | Description |
|--------------------|---|
| Ap 0-26/38 | Dark grayish brown (10YR4/2) sandy loam; moderate medium subangular blocky structure; friable, sticky and slightly plastic; many fine interstitial pores; common fine and medium roots; strongly acid (field pH 5.5); clear wavy boundary. |
| Btc1 26/38-55 | Strong brown (7.5YR5/6) gravelly clay loam; moderate medium subangular blocky structure; friable, sticky and plastic; some clay coatings; many fine interstitial pores, few fine and medium tubular pores; few fine roots; strongly acid (field pH 5.5); gradual smooth boundary. |
| Btc2 55-160 | Yellowish red (5YR5/6) gravelly loam; moderate medium subangular blocky structure; friable, sticky and plastic; some clay coatings; many fine interstitial and tubular pores; few fine roots; very strongly acid (field pH 5.0). |
| C 160 ⁺ | Light gray (10YR7/1) gravelly clay. |

Remarks: gravels are quartzite, sandstone and mica schist.

Type Location:

Name of district, Amphoe Yi-ngo, Changwat Narathiwat.

Range of Profile Features:

The surface or A horizon sandy loam, ranges between 10 to 40 cm in thickness and has 10YR or 7.5YR hues, values 3 or 4 and chromas 2 to 4. The structure is weak and moderate medium blocky. Strongly acid to moderately acid, reaction values range from 5.0 and 6.0.

The argillic B horizon very gravelly clay loam or sandy clay loam, has 7.5YR and 5YR hues, values 4 to 6 and chromas 6 to 8. The structure is weak and moderate medium blocky. Strongly acid to moderately acid, reaction values range from 5.0 and 6.0.

White or light gray gravelly clay loam or gravelly clay C horizon containing few coarse red mottles occurs at some depth below 1.5 m from the soil surface.

Similar Soil Series:

Principal Associated Soils:

ANALYSIS RESULTS

Profile code No.: S-71/2

(oven dry basis)

Soil series: Yi-ngo series (Yg)

| 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 ₄ OAc | |
|---------|------------------|---------|---|------|------|-----------------------|---|---|---|----|---------|--------------------|-----------|---------|---------------------|-------------------------------|--|----|
| | | | USDA grading | | | Sand-fraction grading | | | | | Lab | Field | 1:1 water | 1:1 KCl | | | | |
| | | | sand | silt | clay | vc | c | m | f | vf | result | estim ⁿ | | | | | | |
| P-94 | 0-26/38 | Ap | 52.1 | 35.4 | 12.5 | | | | | | | sl | sl | 4.7 | 3.8 | 0.5 | 4.7 | 64 |
| P-95 | 26/38-55 | Btc1 | 47.2 | 31.3 | 21.5 | | | | | | | l | gcl | 4.5 | 3.7 | 0.6 | 2.8 | 61 |
| P-96 | 55-160 | Btc2 | 42.1 | 33.8 | 24.1 | | | | | | | l | gl | 4.7 | 3.9 | 0.6 | 4.0 | 58 |
| P-97 | 160 ⁺ | C | 34.4 | 36.6 | 29.0 | | | | | | | l | - | 5.1 | 4.0 | 0.1 | 2.5 | 59 |

| 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 ₄ OAc (C) | CEC 100g Clay | B/Cx100 | (Bx100)/(B+A) | | | | |
| | | | | | | | | | | | | | | | | | | |
| 0-26/38 | 0.8 | 1.00 | 0.12 | 0.32 | 0.11 | 0.04 | 0.17 | 0.64 | 7.80 | 8.44 | 5.3 | 42.4 | 12 | 8 | | | 0.02 | |
| 26/38-55 | 0.6 | 0.51 | 0.07 | 0.32 | 0.22 | 0.02 | 0.84 | 1.40 | 7.69 | 9.09 | 5.1 | 23.7 | 27 | 15 | | | 0.01 | |
| 55-160 | 1.0 | 0.22 | 0.04 | 0.43 | 0.22 | 0.02 | 0.22 | 0.89 | 7.21 | 8.10 | 7.5 | 31.1 | 12 | 11 | | | 0.01 | |
| 160+ | 0.7 | 0.10 | 0.03 | 0.22 | 0.22 | 0.03 | 0.23 | 0.70 | 4.67 | 5.37 | 4.5 | 15.5 | 16 | 13 | | | 0.01 | |

Surveyor: S. Charoenpong

Reported by: W. Sirichuaychoo

Date: Dec, 16, 1968

Date: Nov. 25, 1998