

Proposed by: V. Thanduan, 1970
 Revised by
 1. N. Chorphaka, 1987
 2. P. Wiwatwongwana, 2004

DONG YANG EN SERIES

Field Symbol: Don

Distribution: Occupies moderate extent in Central Highland.

Setting: Dong Yang En soils occur on undulating terrain at elevations that range from 80 to 150 m above sea level. They are formed on alluvial fans mostly from shale and siltstone. Slopes range from 2 to 6 percent. The climate is Tropical Savanna (Koppen `Aw'). The average annual precipitation ranges from 1,100 to 1,600 mm.

Drainage, Permeability and Runoff: Moderately well drained to well drained. Runoff is medium. Permeability is estimated to be moderate.

Vegetation and Land Use: Natural forest are mixed deciduous and dry evergreen. Some areas have been cleared for uplands crops, such as maize, beans, cotton and banana.

Characteristic Profile Features: Dong Yang En series is a member of the fine-silty, mixed, active isohyperthermic Oxyaquic (Ultic) Haplustalfs. They are very deep soils with a dark brown, very dark brown or dark grayish brown silt loam or silty clay loam A horizon and a dark brown to reddish brown silty clay loam or clay loam light textural B horizon. The reaction is slightly acid to neutral at the surface, over strongly acid to medium acid in the subsoil.

Typifying Pedon: Profile code no. is NC-47/83 (Type Location) (moist colours unless otherwise stated).

Location: Near Ban Nam Ron, Amphoe Wichian Buri Changwat Phetchabun.

Sheet Name: Amphoe Wichian Buri

Sheet No.: 5240 III

Coordinate: 406357

Elevation: 86 m (MSL)

Relief: gently undulating

Slope: 2-5 %

Physiography: alluvial fan or semi-recent terrace

Parent material: alluvium from shale and siltstone

Drainage: moderately well drained

Permeability: moderate

Runoff: medium

Ground water depth: >2 m

Flooding depth: -

Duration: -

Frequency: -

Annual rainfall: 1,124.7 mm

Mean temp.: 27.2 °C

Climate type: Tropical Savannah (Aw)

Natural vegetation or land use: mixed deciduous forest and banana

Described by: Thunduan and Pracha

Date: 28 April, 1970

Revised by: Phusit Wiwatwongwana

Date: 22 May, 2004

| Horizon | Depth (cm) | Description |
|---------|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| A1 | 0-10 | Very dark grayish brown to dark brown (10YR3/2-3) silt loam; moderate fine and medium subangular blocky structure; friable, sticky, plastic; common very fine and fine roots; medium acid (field pH 6.0) clear, smooth boundary. |
| AB | 10-23 | Brown to dark yellowish brown (10YR4/3-3/4) silt loam; moderate fine and medium subangular blocky structure; friable, sticky, plastic; common fine and medium roots; very strongly acid (field pH 5.0) clear, smooth boundary. |
| BA | 23-46 | Brown to dark brown (7.5YR4/4) silt loam; moderate medium subangular blocky structure; friable, sticky, plastic; common fine, medium and one coarse roots; very few small black spots and soft Mn nodules; very strongly acid (field pH 4.5); clear, smooth boundary. |
| Bt1 | 46-67 | Reddish brown (5YR4/4) silty clay loam; moderate strong fine and medium subangular blocky structure; friable, sticky, plastic; patchy thin cutan, very few small (± 3 mm in diameter) spherical soft and hard, red and black, Fe-Mn |

| | | |
|-----|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | | nodules; few fine and medium roots; very strongly acid (field pH 4.5); gradual, smooth boundary. |
| Bt2 | 67-100+ | Reddish brown (5YR5/4); silty clay loam; common fine distinct strong brown (7.5YR5/6) mottles; moderate strong fine and medium subangular blocky structure; slightly firm and firm in fine aggregates, sticky, plastic; broken thin cutans probably of clay mineral and sesquic oxides; few small (1 cm in diameter) irregular soft black Mn nodules; few fine roots; very strongly acid (field pH 4.5). |

Range of Profile Features:

The A horizon range from 15 to 25 cm in thickness and have hues of 10YR and 7.5YR, values of 3 to 4 and chromas of 2 to 3 in 10YR and 2 in 7.5YR. The field pH value ranges from 6 to 7.

The B horizon has hues of 5YR to 7.5YR, values of 4 to 5, chromas of 3 to 4 in 5YR and 4 to 6 for 7.5YR. The field pH values range from 5 to 6. Structure is moderate fine to medium blocky over moderate strong blocky in the B horizon. Few to common mottles occur only in the deep subsoil and usually more than 1 m from the soil surface.

Similar Soil Series:

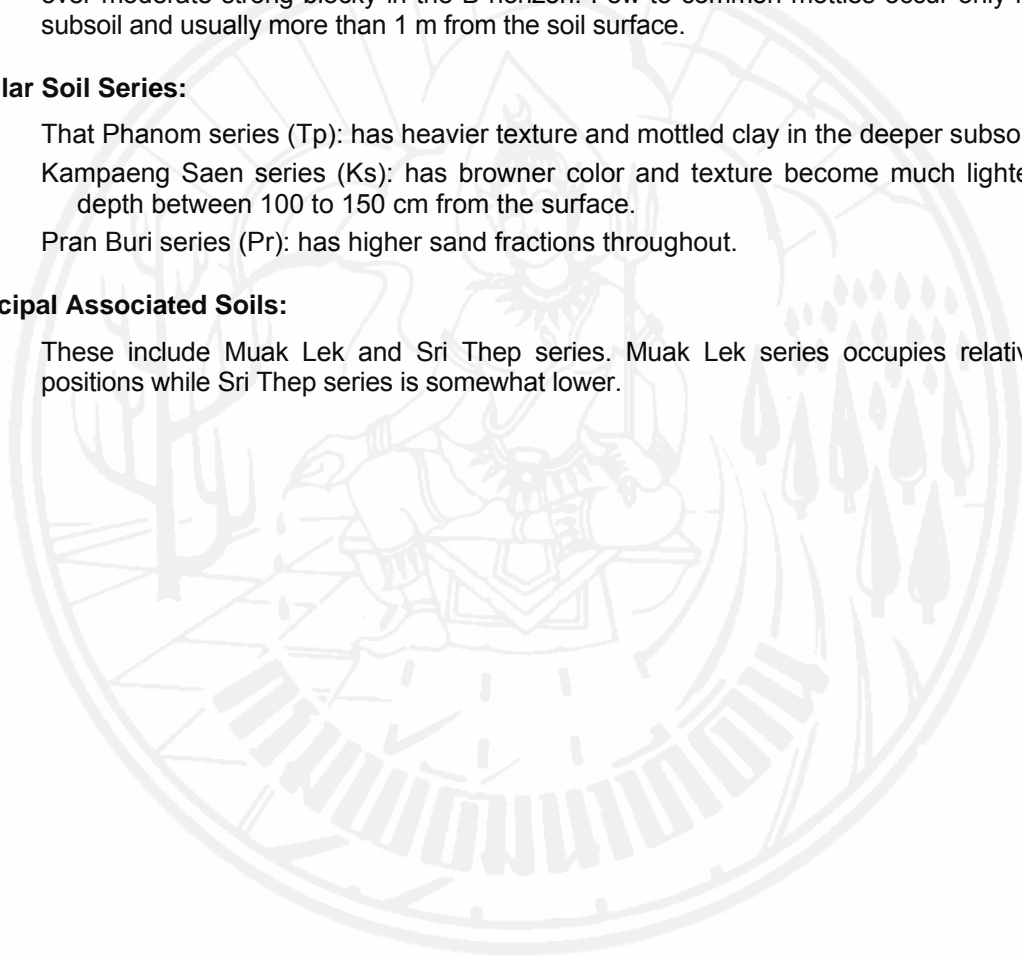
That Phanom series (Tp): has heavier texture and mottled clay in the deeper subsoil.

Kampaeng Saen series (Ks): has browner color and texture become much lighter at some depth between 100 to 150 cm from the surface.

Pran Buri series (Pr): has higher sand fractions throughout.

Principal Associated Soils:

These include Muak Lek and Sri Thep series. Muak Lek series occupies relatively higher positions while Sri Thep series is somewhat lower.



ANALYSIS RESULTS
(oven dry basis)

Profile code no.: NC-47/83

Soil series: Dong Yang En (Don)

| 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 | 1:1 | | | | |
| | | | sand | silt | clay | vc | c | m | f | vf | result | estim ⁿ | water | | | | KCl |
| Pa-457 | 0-10 | A | 15.5 | 70.0 | 14.5 | | | | | | sil | sil | 6.1 | 5.8 | 0.2 | 17.2 | 193 |
| Pa-458 | 10-23 | AB | 15.0 | 62.5 | 22.5 | | | | | | sil | sil | 4.6 | 3.6 | 0.3 | 11.2 | 60 |
| Pa-459 | 23-46 | BA | 15.0 | 60.5 | 24.5 | | | | | | sil | sil | 5.4 | 3.5 | 0.3 | 14.4 | 65 |
| Pa-460 | 46-67 | Bt1 | 15.0 | 54.5 | 30.5 | | | | | | sicl | sicl | 5.6 | 3.9 | 10.4 | 18.0 | 63 |
| Pa-461 | 67-100+ | Bt2 | 14.0 | 53.0 | 33.0 | | | | | | sicl | sicl | 6.0 | 4.2 | 0.7 | 19.0 | 57 |

| Depth (cm) | Air dried to oven dried | C % | N % | Exchange capacity and cations (cmol _(c) kg ⁻¹) | | | | | | | | | Base satur ⁿ (%) | | ECEC cmol _(c) kg ⁻¹ (B+D) | Al KCl extr. cmol _(c) kg ⁻¹ (D) | Electrical conduct ^y (ECx10 ⁶) dS m ⁻¹ |
|------------|-------------------------|------|-----|-----------------------------------------------------------------------|------|------|----------------|-----------------------|-----------|-----------------------------|---------------|---------|-----------------------------|---------|-------------------------------------------------|-------------------------------------------------------|--------------------------------------------------------------------------|
| | | | | Ca | Mg | K | Na cations (B) | SUM Extr. acidity (A) | SUM (B+A) | CEC NH ₄ OAc (C) | CEC 100g Clay | B/Cx100 | (Bx100)/(B+A) | | | | |
| | | | | | | | | | | | | | | B/Cx100 | | | |
| 0-10 | 2.4 | 1.73 | | 10.30 | 3.40 | 0.50 | 0.30 | 14.50 | 7.40 | 21.90 | 17.3 | 119.3 | 84 | 66 | | | 0.09 |
| 10-23 | 1.8 | 0.86 | | 4.60 | 2.50 | 0.10 | 0.30 | 7.50 | 11.10 | 18.60 | 14.4 | 64.0 | 52 | 40 | | | 0.02 |
| 23-46 | 1.9 | 0.42 | | 4.00 | 2.90 | 0.20 | 0.30 | 7.40 | 10.60 | 18.00 | 14.8 | 60.4 | 50 | 41 | | | 0.01 |
| 46-67 | 3.0 | 0.37 | | 5.30 | 3.60 | 0.10 | 0.30 | 9.30 | 10.80 | 20.10 | 15.2 | 49.8 | 61 | 46 | | | 0.01 |
| 67-100+ | 2.6 | 0.26 | | 5.90 | 3.40 | 0.10 | 0.40 | 9.80 | 8.30 | 18.10 | 15.1 | 45.8 | 65 | 54 | | | 0.01 |

Surveyor: Thunduan and Pracha

Date: 28 April, 1970