

# SOIL PROFILE STUDY

## SITE CHARACTERISTICS

- **Profile Number**
- **Date of study**
- **Described by**
- **State**
- **Tehsil**
- **Village**
- **Field Number**
- **Relief**
  - a) **Normal-Sloping upland with medium runoff**
  - b) **Sub-normal- Nearly flat to sloping upland with slow to very slow runoff**
  - c) **Excessive- Hilly or hilly upland with rapid to very rapid runoff**
  - d) **Flat or concave- Nearly flat or depressed low land with no or little runoff**

- **Elevation** – From mean sea level
- **Land form** – Physiography and relief e.g. Hill top, Hill slope, Valley bottom etc.
- **Parent Material** –
  - a) **Residual Material** – Igneous, Sedimentary and Metamorphic rocks
  - b) **Transported Material** –
    1. **By Water**-Alluvial, Lacustrine, Marine
    2. **By Wind**- Aeolian, Loess
    3. **By Ice**- Moraine, Till plain, outwash plain
    4. **By gravity**- Colluvium
  - c) **Coma lose material** – Peat, Muck
- **Drainage**
  - D1** – Poorly drained      **D5** – Excessively drained
  - D2** – Imperfectly drained      Examine external and internal drainage
  - D3** – Moderately well drained
  - D4** – Well drained

- **Class of slope –**

Slope - A B C D E F G H

Range of slope 0-1 1-3 3-5 5-10 10-15 15-25 25-33 33-50  
%age

- **Ground water – Depth and fluctuation if any**

- **Erosion –**

e1 – No to slight erosion

e2 – Moderate erosion

e3 – Severe erosion

e4 – Very severe erosion

**Gullies-** g1 – Narrow gullies with 0.3 – 1.5 m width

g2 – Medium gullies 1.5 – 3.0 m width

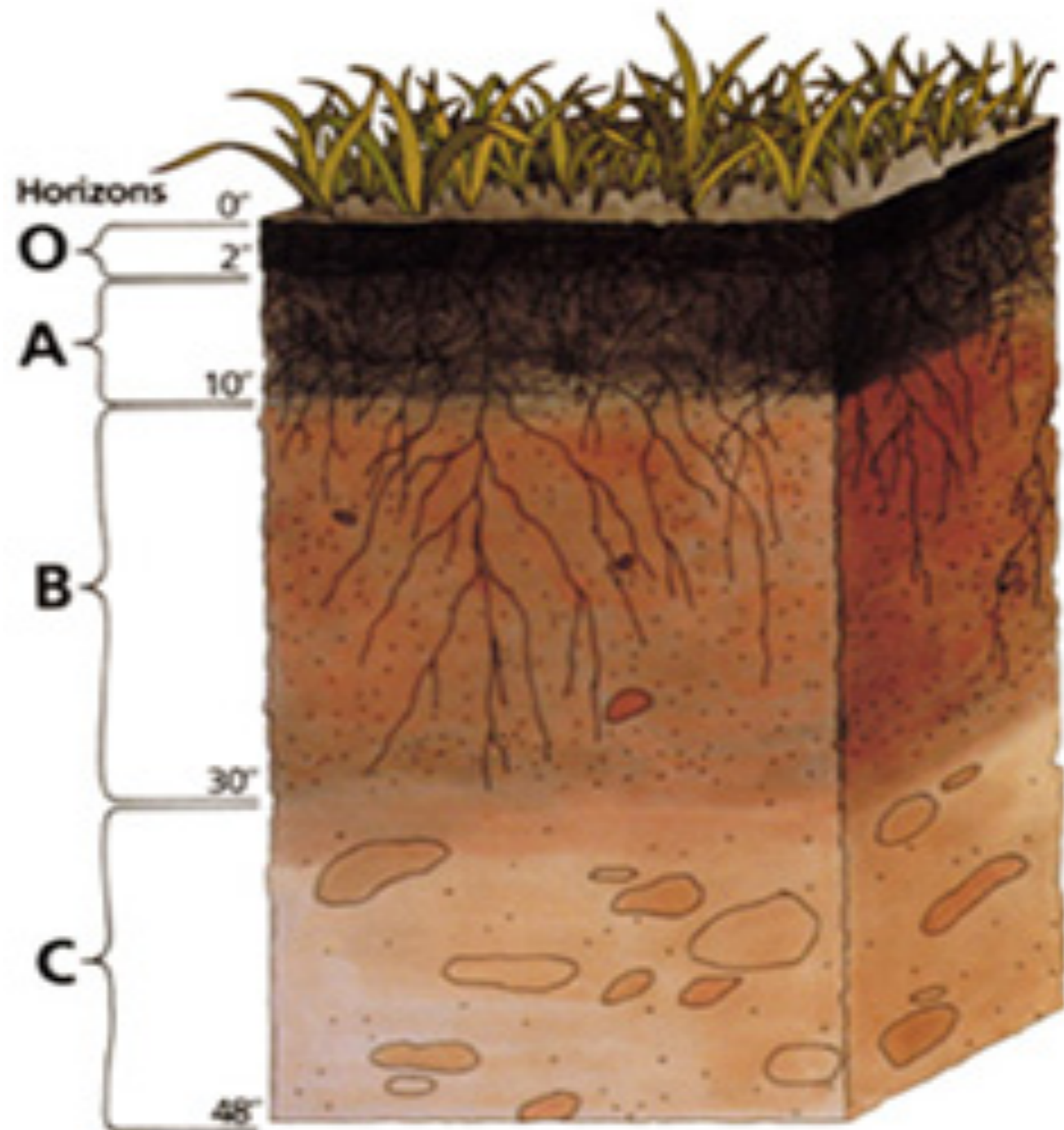
g3 – Wide gullies more than 3m width

- **Stoniness, Gravelliness and Rockiness**

Slight -0-20% by volume Moderate – 20-50% by volume

Very – 50-90% by volume

- **Salinity and Alkalinity :**
- **Climate**
- **Present Land Use –**
  - A. Cultivated land – C1, C2, C3 – Single, Double, Triple cropped**
  - B. Forest land FO – F-No canopy; F1-Thin Forest: F2-Moderate F3-Dense**
  - C. Pasture land**
  - D. Terraced lands**
  - E. Wastelands - W1- Wasteland fit for cultivation**
    - W2- Wasteland unfit for cultivation**
- **Natural Vegetation – Grass, shrubs, trees**
- **Remarks – Crop yield, Agricultural practices**



# PROFILE CHARACTERISTICS

**Horizon** : Use the standard horizon nomenclature as A,B,C etc. wherever possible and by numbers 1,2,3 where the horizons are not clear.

**Depth** : In centimeter from the top of A, or surface mineral horizon, except for the surface of peat or marshy soil.

**Thickness** : Average thickness and range

**Boundary** : Horizon boundaries are described as to distinctness

Abrupt – a: Clear – c: Gradual – g: Diffuse – d:

According to topography – Smooth –s; Wavy – w; Irregular – I; Broken –b

**Colour** : Soil colours are indicated by using the appropriate Munsell rotation, such as 5 YR 5/3

**Mottling** : A description of the mottling in soil horizon requires a rotation of the colours and of the pattern. Colours should be given in terms of Munsell rotation. The pattern may be noted as follows:

Abundance : Few (Less than 2%), Common (2-20%), Many (More than 20%)

Contrast : Faint, Distinct, Prominent

Size : Fine (Less than 5mm), Medium (5-15mm), Coarse (More than 15mm)

## Texture :

**Sandy – s; Loamy sand – ls; Sandy loam – sl; Loam – l; Clay loam – cl ;  
Sandy clay loam – scl; Silt – si; Silty loam – sil; Silty clay – sicl; Sandy  
clay – sc; Clay – c; gravel – g**

## Structure :

<u>Size</u>	<u>Grade</u>	<u>Type</u>			
Very fine	vf	Structure less	0	Platy	pl
Fine	f	Weak	1	Prismatic	pr
Medium	m	Moderate	2	Columnar	cpr
Coarse	c	Strong	3	Blocky	bk
Very coarse	vc			Angular blocky	abk
				Subangular blocky	sbk
				Parallelopiped	pp
				Granular	gr
				Crumb	cr
				Single grained	sg
				Massive	m

## Consistency :

<u>Wet soil</u>	<u>Moist soil</u>	<u>Dry soil</u>	<u>Cementation</u>
Non sticky – wso	Loose – ml	Loose – dl	Weakly cemented – cw
Slightly sticky - wss	Very friable – mvfr	Soft – ds	Strongly cemented – cs
Sticky - ws	Friable – mfr	Slightly – dsh	Indurated - ci
Very sticky - wvs	Firm - mfi	Hard - dh	
Non plastic - wpo	Extremely firm- mefi	Very hard - dvh	
Slightly plastic - wps		Extremely hard – deh	
Plastic - wp			
Very plastic- wvp			

## Roots, Pores, Krotovinas and concretions:

<u>Abundance</u>	<u>Size</u>
Few f	Very fine vf
Many p	Fine f
Abundant a	Medium m
	Coarse c



## Reaction

Use pH paper

Slight – e; Strong – es; Violent – ev

## Special features:

### Concretions

Lime concretions                      **conca**

Iron                                        **conif**

Siliceous                                **consi**

Krotovinas                              **K**

