

Experiment No. 5

Date-----

Determination of maximum water holding capacity of soil

The maximum amount of water retained by soil per unit of its dry weight after the gravitational flow has ceased is called water holding capacity or field capacity of the soil. The water holding capacity varies in different type of soils and depends upon the types of soil particles and porosity of the soil. Sandy soils have poor water holding capacity then the loam and clay soils.

Aim: To study the water holding capacity of different soil.

Requirements:

1. Garden soil
2. roadside soil
3. measuring cylinders
4. funnels, filter papers
5. beakers
6. balance

Procedure:

Take two funnels and line them with filter paper. Label them A and B. Place them on measuring cylinders. Take 100 gm dried sample each of the garden soil and roadside soil. Put the garden soil in funnel A and roadside soil in funnel B. Pour 100 ml of water in each funnel. Record the volume of filtered out water in the measuring cylinder when the dripping of water stops from the funnel.

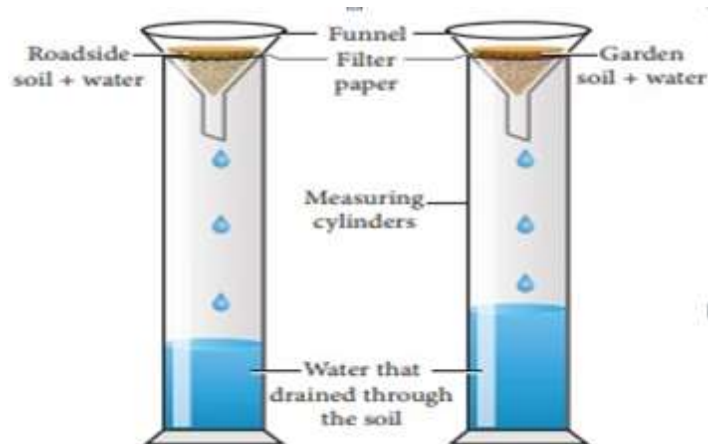


Figure: Water holding capacity of different soil

Observation:

Record the observation in the table as follows:

S. No.	Soil Types	Weight of soil (X)	Volume of water poured (Y)	Volume of water collected in measuring cylinder (Z)	Volume of water retained by the soil (Y-Z)	Water holding capacity of the soil in percentage $(\frac{Y-Z}{X} \times 100)$
1.	Garden soil					
2.	Roadside soil					

Inference:

Garden soil has a high-water holding capacity than the roadside soil, because roadside soil has larger quantities of sand and silt.

Precautions:

- Weighing of soil samples should be done accurately.
- Pour water slowly and gently on the soil in the funnel
- Record the volume of collected water in the measuring cylinders carefully.

Practical significance:

Conclusion

Signature of Faculty In-charge