

MORPHOLOGICAL STRUCTURE OF SOIL SAMPLES COMPOSED FROM MAMACHE MOHIDA SITE.

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Abstract :

Soil samples were composed from Mamache Mohida site of Shahada Tehsil of Nandurbar District, Maharashtra, India. For this study five samples from Mohida periphery soil. The constitution of soil morphological study includes the color, texture, consistency, depth and structure. Brownish black, black grey, dark grey, brownish grey, brownish black, dark reddish brown, Soil texture of the soil series of the study area are usually silty clay, silty clay loam, clay loam, sandy clay, sandy clay loam. The soil structure of the studied soil series are mostly observed strong coarse angular blocky, sub-angular blocky, strong medium angular blocky, medium to moderate blocky, medium blocky. The soil consistency of the studied soil series are generally observed hard, moderately hard, slightly hard, extremely firm, very firm, firm, friable.

Introduction :

Morphology of soil is the explanation of soil body. Morphology is expressed by Kinds, number, and arrangement of the different horizon and their computable and apparent characteristics. In soil profile the feature, appearance and general characteristics are expressed. Horizons of soil are soil layers which are approximately parallel to the surface of soil with characteristics of soil forming process. Then each soil horizons are described in term of thickness, colour, texture, consistence, structure, clay film, wetness, pores, etc. In addition to inherit of soil horizons from parental substance or their deposition from additional sources is significant. The external soil characteristics are linearity, erosion, shape, slope gradient percent, drainage condition, and ground water level.

Salt-affected soils are characterized by high concentrations of soluble salts, which can considerably impact soil morphology. These soils often exhibit distinct morphological topographies, with:

1. Surface Crusting Formation of a hard, impervious crust on the soil surface due to salt gathering.
2. Soil Structure damage: Distraction of soil aggregates and structure due to salt-induced diffusion.
3. Reduced Drainage: Reduced water permeation and drainage due to salt-induced soil compaction.

Effect on Soil Properties the morphology of salt-affected soils can considerably impact soil stuffs, including: 1. Soil Fertility: minimize nutrient accessibility and uptake due to salt-induced nutrient imbalances. 2. Water Relations: Impaired water permeation, holding, and availability due to salt-induced soil physical changes. 3. Plant Development: Reduced plant

growth and crop production.

Experimental morphology :

Measurements of soil deepness take place from the soil superficial. The dimension of soil depth is takes place from the surface. Bouyoukis hydrometer technique is applied for Particle size examination. Soil hue is determined for together dry and moist samples by means of the Munsell system as hue, value and chroma. Soil Arrangement test requirements some information from the observer Test. Soil sample was reserved from the soil superficial horizon and objected it moderately and the geometric nature of the macro a The experimental procedures are being described and discussed under the following sub headings:

Techniques of morphological study include:

a) Colour : The soil colour is determined by the Munsell colour chart

b) Texture : Bouyoukis Hydrometer Method for Particle Size Analysis:

The hydrometer method is based on the principle that the density of the suspension at the given depth decreases with time as an initially homogeneous dispersed suspension settle. The rate of decrease in density at any given depth is related to the settling velocities of the particles which in turns are related to their size.

c) Structure : As a substitute of a laboratory diagnostics, this test is grounded on observation. Hence, it has need of some knowledge from the observer. Take out a soil sample from the oil surface horizon and grip it gently. Guise and examine the geometrical shape of the macro aggregates

d) Consistence : It is a very simple and easy test. Takings a soil ped between our forefinger and thumb and squeeze it till its cracks or fall away from each other. If the soil is excessively dry spray a slight amount of water on it

e) Depth : Measurement of soil depth takes place from the soil surface. Usually the entire four faces of the pit will not be identical and be concerned is essential to choose the representative face of the pit for the learning of the profile. Moreover the thickness of every horizon or layer may be different in a pedon and this difference can be designated by recording the average thickness and series in thickness of the horizon; e.g. 12 cm (10- 15 cm).

Results and discussion :

The surface soil of Mohida soil series consisting five soil sample of salt affected soil. Are characterized for different morphological study such as the colour, texture, structure consistency and depth by different analytical method. The characterization data are presented in the following table

Sr. No.	Depth (cm)	Soil Color		Texture	Structure	Consistency	
		Dry	Moist			Dry	Moist
1	123	5YR 5/1	5YR 3/1	SCL	Strong medium angular blocky	mh	fi
2	122	5YR 4/2	5YR 3/2	SC	Strong medium angular blocky to sub-angular blocky	h	vfi
3	125	5YR 5/1	5YR 3/1	SCL	Strong medium angular blocky	mh	fi
4	115	5YR 5/1	5YR 3/2	SiC	Strong medium angular blocky	h	fi
5	118	5YR 4/1	5YR 3/2	SCL	Strong medium angular blocky	mh	fi

Table: Morphological Data of Depth, Color, Texture, Structure and Consistency.

1. The color of soil at dry state is brownish gray and at moist state brownish black. Texture is silty clay loam. The structure of soil is strong medium angular blocky and wavy boundary. Consistency-when dry it is moderately hard and firm when moist. Very deep soil. Deepness of the soil from surface -123 cm.
2. The color of soil at dry state is brownish gray and at damp brownish black. Texture is silty clay. The structure of soil is strong medium angular blocky to sub-angular blocky. Consistency-when dry it is hard and very firm when moist, and diffuse wavy boundary. Very deep soil. Deepness of soil from surface-122 cm.
3. The color of soil at dry state is brownish gray and at damp condition brownish black. Texture is silty clay loam. The structure of soil is strong medium angular blocky and wavy boundary. Consistency -when dry it is moderately hard and firm when damp. Very deep soil depth from the surface- 125 cm.
4. The colour of soil at dry condition is brownish gray and at moist condition brownish black. Texture is silty clay. The structure of soil is strong moderate angular blocky. Consistency-when dry it is hard and very firm when moist and wavy boundary. Very deep soil. Depth from surface -115 cm.
5. The colour of soil at dry condition is brownish gray and at moist condition brownish black. Texture is silty clay loam. The structure of soil is strong medium angular blocky and wavy boundary. Consistency-when dry it is moderately hard and firm when moist. Very deep soil. Depth from surface -118 cm.

Parent material is basalt. Drainage and permeability are moderate and slowly permeable. Present land uses: Cotton, Maize, Jawar, Bajara, Moong etc. Productivity potential: Medium

Conclusion :

The morphological status of the studied soil series suggested that the fertility of these soil are generally observed to be medium, moderate, good and very good for most of cash crops, grains, pastured crops, horticulture crops etc. The color of soil at dry state is brownish

gray and at moist state brownish black. Texture is silty clay loam. Structure of soil is strong medium angular blocky to sub-angular blocky. Consistency-when dry it is moderately hard and firm when moist. Depth from the surface- 115-125 cm.

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