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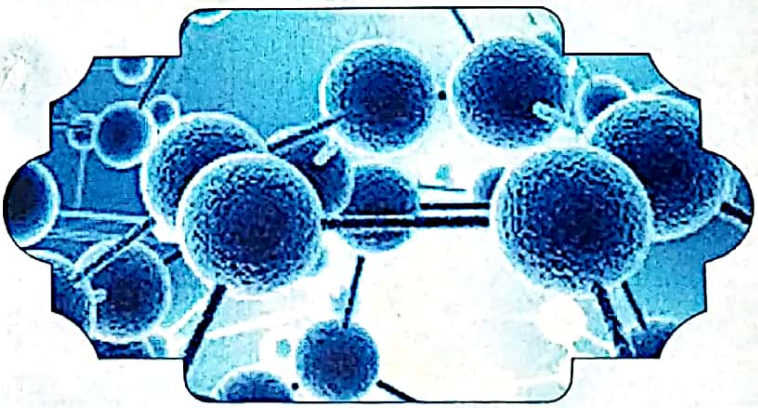

STUDY OF PHYSICOCHEMICAL ANALYSIS OF SOIL SAMPLES COLLECTED FROM DIFFERENT VILLAGES OF OSMANABAD DISTRICT MAHARASHTRA INDIA

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Abstract

The present study has been undertaken to investigate the physical & chemical characteristics of soil samples collected from different villages of Osmanabad district Maharashtra India. The soil characterization was carried out for the parameters like PH, Electrical conductivity, Total organic carbon, Nitrogen, Potassium [K_2O], Phosphorous [P_2O_5], etc. This study leads us to the conclusion of the nutrients quality of soil of different villages of Osmanabad district. Results shows that average all the villages of Osmanabad district have medium or high minerals content. This information will help farmers to solve the problems related to soil nutrients amount of which fertilizer to be added to increase the yield of crops.

Key Words: quality of soil, PH, Total organic carbon, Phosphorous, Nitrogen, Potassium.

Introduction

Soil resources are of vital importance for survival & welfare of the people. One of the most severe &widespread problems facing the agriculture industry is the degradation of soil quality due to salinity. In fact almost 40% of the worlds land surface is affected by salinity problem. [1] Soil sampling is perhaps the most vital step for any soil analysis. As a very small fraction of the huge soil mass is used for analysis, it becomes extremely important to get a truly representative soil sample of the field. Soil test based nutrients management has emerged as a key issue in effort to increase agriculture productivity & production since optimal use of nutrients, based on soil analysis can improve crop productivity & minimize wastage of these nutrients, thus minimizing impact on environmental leading to bias through optimal production. Deficiencies of primary, secondary& micronutrients have been observed in intensive cultivated area. [2] Soil is important everyone either directly or indirectly. It is natural body on which agriculture product grows& it has fragile ecosystem. [3, 4] Soil is medium in which crop growth to food & cloth the world. Soil fertility vital to a productive soil. [5] Certain external factor control plant growth, air, temperature, mechanical support, nutrients & water. Plant had element for their growth & completion of life cycle. They are Carbon, Hydrogen, Oxygen, Nitrogen, Phosphorus Potassium etc. [6]

The present work is undertaken to study the physicochemical analysis of soil samples collected from different villages of Osmanabad district Maharashtra. The soil characterization was carried out for the parameters like PH, Electrical conductivity, Total organic carbon, Nitrogen, Potassium [K_2O], Phosphorous [P_2O_5], etc. This study leads us to the conclusion of the nutrients quality of soil of different villages of Osmanabad district.

Materials and Method

The soil samples were collected from ten different villages (farms) in the depth of 0-20cm from the surface of soil in the polythene bags. The soil samples were collected in the month of April 2012. The ten sample stations (villages) from Osmanabad district are Singoli, Samudravani, Thair, Dhokee, Palsap, Tadwala, Yedshi, Mankesar, Aadni, &Tugaon. Analysis of the physicochemical parameters of the soil sample were suspended in distilled water (1:4 w/v) &

allowed to settle down the particles. The PH of the suspension was determined using PH meter. Electrical conductivity (EC) of the soil was determined in the filtrate of water extact using conductivity meter. [7] . %of organic carbon (OC) content was determined by adopting chromic acid wet digestion method. [8] Nitrogen, phosphorous. & Potassium is determined by standard procedure. [9-10] Results were compared with standard values.[11]

Results & Discussion

The physicochemical analysis of different parameters of soil samples collected from different villages of Osmanabad district is given in table 1. The PH is an important parameter as it helps in ensuring availability of plant nutrients. [11] PH also helps in maintaining the good soil condition. In the above study PH values ranges from 7.30 to 8.61 shoes basic nature. The measurement of electrical conductivity (EC) is for measure the current that give a clear idea of soluble salts present in the soil. Conductivity depends upon the dilution of the soil suspension. The EC values ranges from 022mhos to 1.16mhos suggest normal values.[11] The organic matter includes all the dead plant material & live or dead animal. Most living thing in soil including plant insect bacteria & fungi are dependent on organic matter for nutrition & energy. In the present study the organic carbon % ranges from 0.46 to 0.88 shows normal soil. The % 0f nitrogen ranges from 0.03 to 0.08 suggest normal values. The Percentage of potassium ranges from .86 to 1.38 & the percentage of phosphorous ranges from 0.021 to 0.042 also suggest normal values. [11]

Conclusion

From physicochemical analysis of soil sample from different ten villages of Osmanabad district (M.S.) shows that the soil parameter like PH, EC, % of organic carbon, % of N, %of K, % of P, are normal range. These studies give information about nature of soil present nutrients in soil, according to this information arranged the amount of which fertilizers & nutrients needed to soil for increase the percentage yield of crops.

Table 1: Physicochemical analysis of soil samples from different villages of Osmanabad District Maharashtra (India)

Villages	PH	EC (mhos)	% of organic carbon	% of Nitrogen	% of Phosphorous	% of potassium
Singoli	7.71	0.61	0.88	0.06	0.028	0.98
Samuravani	7.30	0.80	0.46	0.04	0.036	1.06
Thair	7.93	0.70	0.55	0.04	0.024	0.95
Dhokee	8.10	1.16	0.78	0.08	0.033	0.86
Palsap	7.66	0.32	0.68	0.05	0.042	1.25
Tadwala	8.50	0.88	0.76	0.07	0.037	1.38
Yedshi	7.32	1.13	0.54	0.03	0.041	1.29
Mankesar	7.80	0.22	0.62	0.06	0.026	1.35
Aadni	8.61	1.01	0.81	0.08	0.021	1.13
Tugaon	7.43	1.04	0.73	0.06	0.025	1.08

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