IJARSCT
ISSN (Online) 2581-9429
International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
Impact Factor: 7.53
Volume 4, Issue 2, November 2024

Study on Chemical Properties of Soil at Different Gram Panchayat of Masuda Block (Ajmer)

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Abstract: *In the 21st century, India's agricultural development strategy should focus on increasing the productivity of cultivated land while reducing production costs and enhancing the efficiency of input use, all without harming environmental quality. This research aims to analyze both chemical and physical parameters of soil to create an index of nutrient availability and improve our understanding of factors affecting soil productivity. High crop yields require an ample supply of essential nutrients. Soil plays a crucial role in farming and cultivation, and its physical and chemical properties are fundamental to the effectiveness of various management practices. The physical study of soil is therefore vital, as both its physical and chemical characteristics significantly impact soil productivity. Key parameters studied include soil color, texture, consistency, porosity, pH, cation exchange capacity, redox potential, and electrical conductivity. These parameters are crucial because they affect nutrient availability, plant growth, and biological activity. Soils often exhibit low tensile strength and are highly influenced by environmental conditions. Soil quality and composition have substantial effects on the growth and development of crops such as wheat. Poor soil conditions can lead to problems like nutrient deficiencies, water stress, soil pH imbalances, pest and disease issues, toxicity, weed growth, and soil compaction. Understanding the biological, physical, and chemical conditions of soil is essential for implementing effective management practices. This knowledge will help create awareness among farmers about enhancing economic productivity through improved soil management strategies.*

Keywords: Soil health, physical and chemical properties, consistency, Toxicity

DOI: 10.48175/568
ISSN 2581-9429 IJARSCT