International Journal of Multidisciplinary Research and Development
www.allsubjectjournal.com
ISSN Online: 2349-4182 ISSN Print: 2349-5979
Received: 16-11-2025, Accepted: 15-12-2025, Published: 30-12-2025
Volume 12, Issue 12, 2025, Page No. 200-201

Soil testing of Jhajjar College locality for farm management

Dr. Minakshi
Assistant professor, Govt. P.G. Nehru College Jhajjar, Jhajjarrural, Haryana, India

Abstract
Since it's a need of every human being to get proper food, air and water. Most of the human beings depends on plants for their food needs. Due to regular farming and over usage of chemicals soil is becoming infertile. So, to enhance the growth of plants one should have the knowledge of soil nature. In this paper we comparatively studied nature of soil by taking ph. level of sample soil collected, along with the amount of macro and micro nutrients present in soil. Objective of this paper is to compare the pH factor of different soil regions and vegetation growing there.

Keywords: Infertile, macro and micro nutrients

Introduction

Basic requirements for growth of vegetation besides water, air and sunlight is soil

Soil is that organic and inorganic material of earth surface that provides a medium for growth of vegetation [1]

Composition of soil

5% organic material
25% air
25% water
45% minerals

These components may vary slightly

Soil is of 3 types Sand, Silt and Clay and on the basis of proportion of these soil types, water holding capacity and fertility there exists 12 soil texture classes [2].

When we talk about soil profile or soil fingerprints we generally study for soil texture, soil structure, soil colour, soil thickness and soil chemical composition.

Before proceeding let's take a look on Soil Horizon also as it describes each layer of soil profile [3].

Horizon O: Topmost layer most fertile and about 1inch thick.

Horizon A: Next layer composed of beneficial microorganisms, home of earthworm and centipede.

Horizon B: tough layer through which roots can't penetrate.

Horizon C: parent material of rock that formed all the horizons.

Soil pH also play a great role for growth of vegetation as it measures the acidity or alkalinity of water holds in its pores and its value varies from 0 to 14. Soil pH affects vegetation growth by availability of minerals and nutrients to plants, also affecting activity of soil microorganisms [4]. Soil testing is used to facilitate fertilizer composition and dosage selection for land employed in both agricultural and horticultural industries. Lab tests are more accurate and often utilize very precise technology. In addition, lab tests frequently include professional interpretation of results and recommendations. The soil test with the resulting fertilizer use in farm recommendation is the actual connecting link between agronomic research and its practical application to the farmers' fields. However, soil testing is not an end in itself. It is a means to an end. A farmer who follows only the soil test recommendations is not assured of a good crop. Good crop yields are the result of the application also of other good management practices, as proper tillage, efficient water management

Time of testing of soil samples

Although soils can be tested any time during the year, fall is a very desirable time. Fields are usually drier and more accessible and the laboratory is less rushed than in the spring. Soils should be dry enough to till when sampling. If wet samples are collected, they should be air-dried before being packaged and mailed. Wet samples are difficult to handle, more subject to being lost during mailing and greatly delay laboratory testing. Wet samples cannot be analyzed for nitrate-nitrogen. Frequency of soil sampling can vary depending upon cropping intensities, soil types, fertilization rates, tillage methods, weather conditions and new research findings.

1. Continuous Row Crops (conventional) - every two to three years.
2. Double-Cropping Systems - every two years.
3. Continuous No-Till Soybeans (only) - every three to five years.
4. Continuous No-Till Corn or Cotton - every two years.
5. High-Value Cash Crops (Tobacco, Vegetables) - annually.
6. Any time a nutrient problem is suspected.

Experiment

Sample each field separately. However, where the areas within a field differ distinctly in crop growth, appearance of the soils, or in elevation, or are known to have been croppedor fertilized and manured differently, divided the field and sample each area separately. Take a composite sample from each area. First remove the surface litter, and then take a small sample from the surface to plough depth from a number of spots in the field (10 to15 per acre). Collect these samples in a clean container. Where crops have been planted in line (rows), sample between the lines.

Do not sample unusual area. Avoid areas recently fertilized, old bunds, and marshy spots, near tress, compost piles, and other nonrepresentative locations. Take a uniform thicksample from the surface to plough depth. Dig a v-shaped hole with a spade or a trowel, then cut out a uniform thick slice of soil from bottom to top of the exposed soil face, collect the sample and place it in the bucket. Pour the soil from the bucket on a piece of clean cloth or paper and mix thoroughly, discard, by quartering. Quarterly may be done by mixing sample well, dividing it into four equal parts, then rejecting two opposite quarters, mixing the remaining two portions, again dividing into four parts and rejecting two opposite quarters, and so on. The sample should be air dried in the shade for an hour or two before packing. Each cloth bag should be large enough to hold 500 g soil sample and should be properlymarked to identify the sample. Fill out the soil sample information sheet for each sample and enclose it with the soil sample. Submit the samples to Soil Testing Laboratory. Keep a record of the areas sampled for reference when you get the soil test and fertilizers recommendation report from the soil testing laboratory. As discussed in introduction we all must have a knowledge of soil pH and inorganic nutrients present in soil before growing crops.

In this research article I done test of soil pH and inorganic nutrients test with the help of HARVESTO SOIL LAB DIGITAL SOIL TESTING MINI LAB at Govt. P. G. Nehru College Jhajjar by taking samples from different locations around Government P.G. Nehru College Jhajjar. 5 samples of soil were collected from main building garden of college, 2nd from quarters are of college,3rd sample was collected from jungle area beside college,4th sample was collected from hostel area and the last sample was taken from parking area.

Mainly test for Nitrogen, Phosphorus and Potassium were carried out along with the pH of soil.

Result

1. For Garden sample

pH was 6.9
Nitrogen found to be. 17ppm
Potassium was. 120ppm
Phosphorus found to 73ppm

2. For Quarter sample

pH was 8.7
Nitrogen was. 35ppm
Potassium was. 62ppm
Phosphorus was. 18ppm

3. For College Jungle sample

pH was. 7.6
Nitrogen was. 42ppm
Potassium was. 88ppm
Phosphorus was. 27ppm

4. For Hostel area sample

pH was. 6.7
Nitrogen was. 23ppm
Potassium was. 42ppm
Phosphorus was. 49ppm

5. For parking area sample

pH was 7.4
Nitrogen was. 51ppm
Potassium was. 56ppm
Phosphorus was. 29ppm

Conclusion

From above data collection of micronutrients and pH levels for different sites it was clear which locality is having proper amount of nutrients and which one is having scarcity or having surplus of nutrients.

Hence this information provides a prescribed knowledge of which plants flowering, non-flowering or fruit plants should be grown where and how much fertilizer is required.

References

1. Claire J. Glendenning, Suresh Chandra Babu and Kwad wo Asenso-okyere. Extension through entrepreneurial approach evaluating the agriclinics program. Status, challenges and policy options, 2019, 201-234.
2. Franzen D. Cihacek L J. Soil sampling as a basis for Fertilizer Application SF- 990 (Revised)
3. Sumner, Malcolm E. Soil science. CRC Press ISBN 9780849331367
4. Jordan-Meille L, Rubaek GH, Ehlert V, Hofman. "An overview of fertilizer -P recommendations in Europe: Soil testing, calibration and fertilizer recommendations Soil use and Management, 28(4), 419-435