

SOIL TESTING IS NECESSARY TO IMPROVE CROP PRODUCTIVITY AND SOIL HEALTH.

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Article History

Received: 06/05/2024

Accepted: 22/05/2024

Article ID: RRBB/211

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Abstract

To understand the general physical, chemical, and biological activity of soil, soil testing is essential. There is unquestionably a nutrient shortage in the soil and crop when we observe that the soils are not reacting to crop sowing or fertilizer application. As a result, we are unable to attain the best possible crop growth, production, and soil health. Nutrient balance between crops and soil is ultimately negative. Farmers are nearly always providing direct All nutrients, including fertilizer, will be fully mined. Based on the results of a soil test, attained soil and crop health. Thus, soil testing will be necessary in the future to improve Crop yield, nutrient shortage, and soil fertility

Introduction

The process of analyzing a soil sample to ascertain its composition, acidity, pH level, and nutrient content is usually referred to as “soil testing.” Fertility, or the soil’s anticipated capacity for growth, can be assessed with a soil test. Shows a lack of some nutrients, certain toxicities from overfertility, and inhibitions. From the existence of trace minerals that are not necessary. Regular testing of the soil aids farmers in Determine if the management they currently have is stealing future earnings and productivity. Soil Testing entails gathering soil sample data, getting ready for analysis, and performing chemical and physical Analysis, interpreting the results, and ultimately recommending fertilizer for the Crops (Claire and colleagues, 2019). Profitable, effective, and ecologically responsible farming systems must include soil testing as a key element of a balanced fertility program. The soil-testing program’s main goal is to provide farmers with a service. Improving soil management techniques and the more efficient

and cost-effective use of fertilizers In order to boost agricultural output. It is impossible to get high crop yields without utilizing Enough fertilizers to make up for any current shortfalls (Das et al. 2014)

Fertilizer composition and dosage selection for land used in horticultural and agricultural industries are made easier with the help of soil testing. Lab tests are more precise and frequently make use of highly precise technology. Furthermore, lab exams usually comprise experts in Analysis of the findings and suggestions. The soil test and the fertilizer that was produced The actual link that connects agronomic research to its practical applications is recommendation. Application to the fields of farmers. Soil testing is not a goal unto itself, though. It serves as a way to A conclusion. A farmer does not guarantee a good crop if they only follow the recommendations of the soil test. CropThe application of additional good management practices, such as appropriate tillage, effective water management, high-quality seed, and

sufficient plant protection measures, results in good crop yields. To get maximum returns on investment from fertilizer purchases and high yields, soil testing is a necessary first step.

Methods and materials

Sampling Area – The Sampling Area Soil test results are based on the collected sample, so each sample should be representative of the area for fertilizer recommendations. A composite sample from 20 locations is used for lawns and gardens, with contrasting soils or problem spots sampled separately.

Soil sample Approaches

There isn't a single method for soil sampling that works for everyone. The crop value determines all soil and plant management techniques. The majority of farmers used conventional sampling techniques, which are still in use throughout most of the region and nation. Strategies work particularly well when there is within-field structured variability, especially in Restricted region. Soil tests, when carried out with the assistance of local guidelines, should collect Data that are 80% of the time within 15% of the field average (Franzen and Cihacek

Collection of soil sample

1. Take individual samples in every field. If, however, a field's sections exhibit marked differences in terms of crop growth, soil appearance, elevation, or are known to have received distinct cropping, fertilization, and manure treatments, divide the field and sample each area independently.
2. From each area, take a composite sample. After clearing the field of any surface litter, take a tiny sample from the top to measure the depth at several locations (10 to fifteen each acre). Gather these samples into a sanitized container. In which areas have crops been planted? lines (rows), take a sample in between.

3. Avoid sampling strange areas. Steer clear of freshly fertilized areas, abandoned bunds, marshy areas, close to trees, compost piles, and other unrepresentative places. To probe deeper, take a homogeneous, thick sample from the surface. Using a spade or trowel, dig a v-shaped hole. then, from the bottom to the top of the exposed soil face, cut out a homogeneous, thick slice of soil. Gather the sample, then transfer it to the bucket.
4. Transfer the dirt from the bucket onto a piece of paper or clean cloth, mix well, and then quarter to discard. One way to perform a quarterly analysis is to thoroughly mix the sample, divide it into four equal portions, reject the two opposing quarters, and then mix the remaining two portions. dividing into four sections once more and excluding two opposing quarters, and so forth. The instance ought to be given an hour or two to air dry in the shade before packing.
5. Every cloth bag needs to be big enough to accommodate a 500 g soil sample and labeled appropriately to identify the sample. For every sample, complete the soil sample information sheet and enclose it with the sample of soil. Send the samples to the laboratory for soil testing.
6. When you receive the soil test and fertilizers, keep a record of the areas that were sampled. the soil testing laboratory's recommendation report.

Conclusion.

The availability of vital plant nutrients in the soil can be measured and addressed by soil testing. But modern soil tests still employ ideas and methods that were established decades ago, with little to no modification in their overall Approach. To ensure the accuracy of a soil test, one must comprehend the physicochemical And the biological characteristics of the soil as well as

its interactions with roots. This is it. Information that results in reliable, prescriptive, and effective nutrient management techniques for soil Availability through sources of inorganic and organic fertilizers, which will control crop and soil Sustainability in the coming years.

Acknowledgement – Author acknowledges Prof.(Dr.) Vilas Ugale, Principal, and Prof.(Dr.) Shobha Ajeet Waghmode, HOD of the Chemistry Department at Maharashtra Education Society's Abasaheb Garware College, Pune.

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