



M. S. KAKADE COLLEGE

Waghalwadi-Someshwarnagar, Tal: Baramati, Dist: Pune, Pin 412 306

(Affiliated to Savitribai Phule Pune University)

NAAC Re-accredited 'A' Grade with CGPA 3.24

ISO 9001:2015 Certified

7.2.1 Describe two Best Practices successfully implemented by the Institution as per NAAC format provided in the Manual.

1. Title of the Best of Practice: Soil Analysis

2. Objectives of the Practice:

- To provide an accurate assessment of the soil fertility to make fertilizer recommendation.
- To increase the awareness of fertilizer effects on environment.
- To determine where fertilizers or manure is applied for soil or not to increase the yield.
- TO help the poor and uneducated farmers to solve problems related to cultivation

3. The Context:

- Soil analysis is used to determine the level of nutrients found in a soil sample.
- Soil testing is helpful for farmers to increase the crop yield.
- Crop yields are determined by a variety of factors including crop variety selection, available moisture, soil fertility, crop adaptation to the area, and the presence of diseases, insects, and weeds.
- The soil analysis and its interpretation deal only with the fertility level (plant nutrients) of the soil.
- Recommended fertilizer will provide sufficient nutrients for the best possible yields. Other factors of production or management may still cause low yields, even though nutrients are adequate.

4. The Practice:

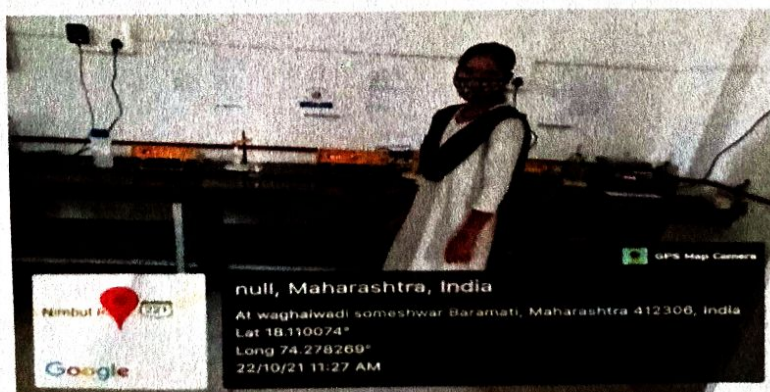
- Final year B.Sc. Students of Department of Chemistry were collecting the soil samples from the farmers and submit sample to the chemistry department. The collected soil samples submitted for further analysis to the M.S.Kakade College, Someshwarnagar.
- Dry the sample collected from the field in shade by spreading on a clean sheet of paper after breaking the large lumps, if present.
- Spread the soil on a paper or polythene sheet on a hard surface and powder the sample by breaking the clods to its ultimate soil particle using a wooden mallet.
- Sieve the soil material through 2 mm sieve.
- Repeat powdering and sieving until only materials of >2 mm (no soil or clod) are left on the sieve.

- Collect the material passing through the sieve and store in a clean glass or plastic container or polythene bag with proper labeling for laboratory analysis.
- For the determination of organic matter, it is desirable to grind a representative sub sample and sieve it through 0.2 mm sieve.
- If the samples are meant for the analysis of micronutrients at-most care is needed in handling the sample to avoid contamination of iron, zinc and copper. Brass sieves should be avoided and it is better to use stainless steel or polythene materials for collection, processing and storage of samples.
- Estimate the moisture content of sample before every analysis to express the results on dry weight basis.



5. Evidence of Success:

- This practice developed awareness about the soil quality which is use full for the good health of the crop.
- Since no fee is charged, it saved time and money of the individuals which is not affordable when done form commercial agencies.
- Practical skills of final year students of chemistry were improved.



6. Problems Encountered:

- Additional instruments, chemicals and glass wares are needed when large number of samples are collected, which stretch annual budget of the department.

7. Resource Required:

1. Laboratory
2. Chemicals, Soil

8. Contact Details:

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Best Practice – II

1. Title of the Best Practice: Water Testing

2. Objectives of the Practice:

- To help ensure you are using water suitable for your intended agricultural use.
- To help ensure that your drinking water is safe.
- Water testing is a key activity that must take place to characterize the quality of the environment.
- Groundwater, domestic water testing is essential for protecting public health and ensuring clean water environment.

3. Context:

Quality water is vital to the social, health and economic well being of the prairies and it's people. It is important to test the suitability of your water quality for it's intended purpose, Whether it is livestock watering, irrigation, spraying or drinking water. The aim of water testing is to determine the 'goodness' of water for particular purposes. Water quality test will give information about the health of the waterway.

4. The Practice:

Water testing is a process used to check the quality of water. The number of total coli forms (*Enteriobacter*, *Klebsiella*, *Cytrobacter* and *Escherichia*) in a water sample can be determine by the statistical estimation called the most probable number. This test involves a multiple series of Durham's fermentation tubes and is divided into three parts: The presumptive, confirmed and completed test. Total solids measured by weighing the amount of solids present of in a known volume of sample this is done by weighing a beaker, filling it with a known volume, evaporating the water in an oven and completely drying the residue, and then weighing the beaker with the residue. To measure the Total suspended solids, the water sample is filtered through a pre-weighted filter .The residue retain on the filter is dried in an oven 103-105 °C until the weight of the filter no longer changes. The test for biochemical oxygen demand (BOD) is a bioassay procedure that measures the oxygen consume by bacteria from the decomposition of organic matter.



5.

Evidences of Success:

- Appreciation from staff, students and public.
- Able to motivate to peruse their future education in the field of science and research.
- We overcome the water quality problem from all source of water.
- Suggestion for wastewater treatment to prevent water borne diseases.

6. Problems Encountered:

- Lack of supportive data.
- Lack of transparency and accurate communication.
- Difficulties in planning for data collection.
- Limited resources

7. Resources Required:

- Water Sample
- Microbial Media
- Instruments : Incubator And Oven

8. Contact Details:

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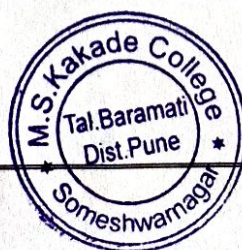
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