

Arts, Commerce and Science College Arvi

A Field Project (Department of Chemistry)

The Chemistry department has started the field project on, " **Physico-chemical status of Farmland soil in Arvi Tahsil (Wardha district) and to aware farmers for soil testing**" after winter vacation of this 2019-20. The seed money for the project was provided by the college.

The UG students of chemistry department who are willing to involve in the field project are selected for the project work. The students had first undergone through the literature survey of the selected topic using library books, research journals, e-books, e-journals etc. and collected the related data.

Brief Introduction

One of the most important resources of the nature is soil. The success of soil management to maintain the soil quality depends on finding how the soils respond to the agricultural practices. Therefore the physicochemical study of parameters of soil is found to be important for plant growth and soil management. Soil is one of the important elements required for farming as it provides nutrients to the plant. Healthy soil contain all the elements for growth and development of crop or the soil deprived from one or more nutrient either reduce the production or degraded quality of crops. Hence, proportion and quantity of macro and micro nutrients altogether refer to the soil health. As far as agriculture production is concerned, soil health play vital role in ensuring sustainable production with optimizing the utilization of fertilizer and reducing its waste. Therefore, it becomes essential to find out the present nutrient status in soil.

Soil Sample Collection:

The Soil samples were collected from four different locations in Jalgaon and Wadhona villages of Arvi Tahsil, Wardha District.

All the soil samples were collected from the surface 10-30 cm soil depths from various sites. For soil sampling the standard method was adopted to get a representative sample. For each sampling sites, five sub-samples from four corners and one center of a grid by quartering method were used to prepare one composite sample at each location. About 1 kg of sub-sample at a depth of 25 cm was collected. This is considered to be the most reactive zone of soil from the point of view of fertility. After collection, all such sub-samples were kept on a clean polythene sheet and mixed thoroughly. Then two opposite corners were retained by rejecting the remaining two. These two parts were mixed thoroughly and again two opposite corners were retained by rejecting the remaining two till the final retained sample was about 1 Kg for subsequent analysis. Collected soil samples were air dried under shade. Then all the soil samples were grinded and passed through 2 mm and 80 mesh sieve. Due to micronutrient determination like copper, iron, manganese & zinc, a brass sieve was avoided and plastic sieve with nylon netting was used. The samples were stored in clean and dry polyethylene containers. Then they were transported to the laboratory for physico-chemical analysis.



Collection of soil samples from Jalgaon village Arvi Tehsil



Students interaction with farmer

Conclusion:

The present investigation of different farmland soil samples of Wadhona and Jalgaon village in Arvi Tahsil showed that most of the soil parameters in both the villages are in the normal range. Jalgaon farmland soils are comparatively poor in some nutrient content than the farmland soils in Wadhona village. The study clearly showed variations in soil properties in the Arvi region. These studies also give information about nature of soil, present nutrient status in soil, according to this information farmers can arrange the amount of which fertilizers and nutrients are needed to soil for increase the percentage yield of crop. By this essential knowledge, soil status was known, that helps in maintaining the physical condition of soil and help in proper mineral nutrients.

To obtain high yield many farmers are using artificial and inorganic fertilizers. The nutrients from these are not directly taken up by the plants and hence they may remain in the soil for several years, due to this the soil quality gets changed. Like as fertilizers, there is a wide range of chemicals used as pesticides which are harmful because of no degradation or very slow degradation. These hazardous chemicals enter our food chain and cause many environmental and human health issues.

By considering all these issues owing to the overdose use of chemicals, fertilizers, information of nutrient and micronutrient status in the farmland soil is very important so that the farmers may decide what is needed and what is to be added to the soil to save the unnecessary cost on chemicals and fertilizers and improve the crop productivity by making the soil fertile.