

**B L D E A's**

**S.B.Arts and K.C.P.Science College Vijayapur**

**Department of Chemistry**

**Soil and Water Testing Camp at Babanagar**

**Date: 9<sup>th</sup> Feb 2019**

**Number of staff members:07**

**Number of Students:32**

**List of Staff and students participated in soil and water testing camp at  
Babaleshwar**

<b>S.NO</b>	<b>Name of Staff members</b>
1	Principal.Dr.A.S.Pujar
2	Dr.M.I.Kumbar
3.	Dr.U.S.Pujeri
4	Dr.M.S.Yadawe
5	Prof.S.B.Managuli
6	Prof. Muttakka.Halalli
7	Prof.Preeti.Pujari
	<b>Name of Students</b>
1	Kavya.Muttagi
2	Soumya.Muttagi
3	Aishwarya.Kaladagi
4	Veeresh.Kambhi
5	Sneha.Pongudwale
6	Uma.Tungal
7	Sushma.Jvani
8	Bhgyashree.Hiremath
9	Megha.Bohandare
10	Sagar.M.Gayakwad
11	Vinod.Devannavar
12	Girish.Hiremath
13	Sushmita.Patrimath
14	Ashwini.Jadgav
15	Laxmi.Kumbar
16	Rashmi.Dhanagond
17	Arpita.Kamalakar
18	Rajeshwari.Bhuyar
19	Sarvajna.S.B
20	Amogh.G
21	Bhojappa.G
22	Ganesh.R
23	Soumya.Warad
24	Ashwini.Hiremath
25	Kiran.Jadhav

26	Shiraj.Kadam
27	Basu.Teli
28	Pooja.Panchal
29	Rashmi.Patil
30	Kamala.Kori
31	Shreedhar.Joshi
32	Chandrashekhar.Khandekar

## Objectives of soil testing

1. Evaluation of fertility status of soil
  2. Estimation of the available nutrients status of soil
  3. Evaluation of the suitability of soil for laying garden
  4. Determination of acidity, salinity and alkalinity problems and
  5. Recommendation of the required amount of fertilizers, lime or gypsum based on soil test value.
- To provide an index of nutrient availability or supply in a given soil. The soil extract is designed to evaluate a portion of the nutrients from the same "pool" used by the plant.
  - To predict the probability of obtaining a profitable response to fertilizer application. Low analysis soils may not always respond to fertilizer applications due to other limiting factors. However, the probability of a response is greater than on a high analysis soil.
  - To provide a basis for fertilizer recommendations for a given crop.
  - To evaluate the fertility status of the soil and plan a nutrient management program.

Chemical analysis of plant composition indicates chemicals or elements present in a crop at maturity or when it is harvested. For example, 1,250 lb of lint cotton contains

approximately 125 lb of nitrogen (N), 20 lb of phosphorus (P), and 75 lb of potassium (K). The essential question in fertilization is, "How much nutrient must be added to the soil as fertilizer for a given amount to be taken up by the growing plant?" The crop utilizes only a portion of the available nutrients in the soil. This means that more nutrients must be present than are removed by the crop. The amount added varies according to the level already present in the soil and the crop's need for the nutrient involved. The soil analysis is the starting point, since it measures the level or content presently in the soil.

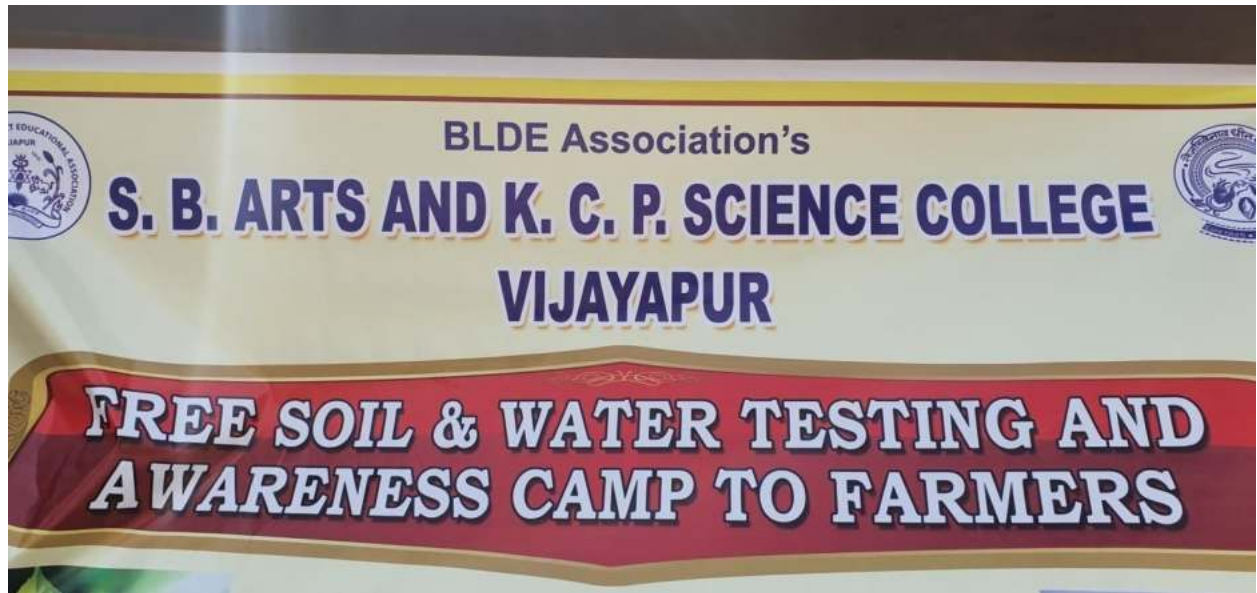
The soil analysis along with the information provided in the information sheet, is interpreted and reported in terms of the nutrients needed to supplement those in the soil. With this information, producers can add sufficient nutrients for the correct balance to obtain high yields.

### **Conclusion and Recommendation**

We have analyzed 102 soil and 110 water samples in Babanagar. Most of the water samples are unfit for drinking and as well as for irrigation purpose. The salinity and hardness of water samples is more than 0.5% and 100-3500ppm respectively.

While pH of soil samples varied from 7.5 to 8.5, conductivity is above the permissible limits. The organic carbon is too low. Hence we have recommended organic fertilizer. The nitrogen content is low to medium rate. Phosphorus is low in all soil samples. The potassium is sufficient no need to supply potash to soil.

**Salinity is more in both and soil samples, hence it is better to use filters which can control salinity in both soil and water samples.**











**BLDEA's**

**S.B.Arts and K.C.P.Science College Vijayapur**

**Department of Chemistry**

**Soil and Water Testing Camp at Babaleshwar**

**Date: 19<sup>th</sup> Jan 2020**

**Number of staff members:09**

**Number of Students:30**



## List of Participants

S.No	Name of Students	class
1	Kum: Akhila.Karani	B.Sc I
2	Kum; Rashmi. Dashyal	B.Sc I
3	Kum; Harshita.Bhat	B.Sc I
4	Kum; Akshata.Naik	B.Sc I
5	Kum: Renuka.Siddwadkar	B.Sc I
6	Kum:Tejaswini.Hitnalli	B.Sc I
7	Kum: Kavya.Muttagi	M.Sc I
8	Kum: Souma.Muttagi	M.Sc II
9	Kum: Aishwarya.Kaladagi	M.Sc I
10	Kum: Aishwarya.Warad	M.Sc II
11	Shri; Veeresh.Kambi	M.Sc II
12	Shri. Shreyas.Deshpande	B.Sc III
13	Shri . Sarvajan.S.B	B.Sc III
14	Shri. Chandrashekhar.Sherikar	B.Sc III
15	Shri.Santosh.M.Yallur	M.Sc II
17	Shri.Gireesh.Hiremath	M.Sc I
18	Shri.Somanath.Ganiger	B.Sc VI
19	Gireesh.Bhavi	B.Sc III
20	Basu.Choudhari	B.Sc III
21	Hasan.Mulla	B.Sc III
22	Swati.Hiremath	B.Sc III
23	Shreeshail.Kinagi	B.Sc III
24	Gajaraj.Tuppad	B.Sc III
25	Chaya.Muttin	B.Sc III
26	Jagadeesh.Patil	B.Sc III
27	Murali.Gudale	B.Sc III
28	Veena. Pawar	B.Sc III
29	Mahesh.Melinamani	B.Sc III
30	Roopa.Gollagi	B.Sc III

	Staff Members	
1	Dr.Vidya.Patil NAAC Chairman	
2	Dr.A.S.Pujar	
3	Dr.U.S.Pujeri	
4	Dr.M.I.Kumbar	
5	Dr.M.S.Yadawe	
6	Prof.Mahesh.Gurav	
7	Prof. Muttakka.Halalli	
8	Prof. Savitri.Biradar	
9	Prof.Neela.Inchal	

## Objectives of Soil and water testing

The **aims of soil analysis** are: To determine the level of availability of nutrients or the need for its introduction. To predict the increase in yields and profitability of fertilization (poor **soils** do not always provide yield increase due to fertilization because of possible limiting factors)

**Water quality analysis** is ultimately performed to ensure safety—specifically, that certain chemical, physical, and biological parameters are within safe limits. Polluted **water** has many negative effects like threatening fish and shellfish, concentrating pollutants in the food chain, and endangering drinking **water**





Latitude: 16.664552  
Longitude: 75.580179  
Elevation: 593.82m  
Accuracy: 8.0m  
Time: 19-01-2020 12:59  
Note: Soil and Water testing camp at Babaleswar



Latitude: 16.664497  
Longitude: 75.580269  
Elevation: 596.92m  
Accuracy: 6.0m  
Time: 19-01-2020 13:00  
Note: Soil and Water testing camp at Babaleswar





BL D E As S.B.Arts and K.C.P.Science College Vijayapur launched a innovative programme to provide soil health awareness to each farmers for keeping with readymade information on soil facility of their soil for fertilizers recommendation & for crop planning in succeeding year. Under this programme 100 soil samples from each village of total 1000 villages of the Vijayapur district. We collected & analyzed in our laboratories. On the basis of soil test analysis report, soil health awareness was given

with entering computerized data of soil test, fertilizers recommendation, reclamation of soil, crop planning etc. & computerized prepared soil health awareness were given to 1000 farmers during 2016-21.

During free check up camp, about 1000 soil health report were distributed to towards & about 1000 soil and water samples were collected (considering 5 soil samples from each village). Which will be analyzed during current year 2016-21 & soil health report will be distributed to farmers.

Under this programme Agriculture University has given responsibility to develop soft ware containing readymade data as soil testing, fertilizers recommendation. Crop Planning for getting guidance for farmers.

Agriculture contributes to one-sixth of the Gross Domestic product of India and a major chunk of our population depends on farming for their livelihood. Declining soil health because of excessive use of fertilizers, non-replacement of depleted nutrients, etc. has now become a serious concern and has also decreased the soil fertility in various parts of the country. Therefore, there is a need to assess soil health at regular intervals so that the farmers can apply the nutrients required while taking advantages of the nutrients already present in the soil. Talking about the question of what this health card represents, it signifies the quality and fertility of the soil sample. The analysis is based on physical quantitative parameters like soil depth, color, texture, surface/ subsurface hardness, compaction, etc. and on chemical parameters like soil pH, electrical conductivity, levels of primary, secondary and micro-nutrients.

The next thing that needs to be considered is what use is such information to a farmer and whether the health card would help reduce consumption of fertilizers. While physical parameters help determine the type of soil and hence broadly decipher the type of farming that could be followed by the farmer, the chemical parameters help understand the amount of nutrients essential to enable ideal growth. For example, if the soil turns out to be more acidic, application of more lime is recommended, and if it is alkaline, it can be corrected through gypsum treatment and ensuring no water-logging. Also, the card will help the farmer in determining what can be more easily grown in the farm. For instance, if the soil contains more nitrogen, wheat or rice is more suitable;

phosphorus is the most important nutrient for pulses; and potassium is vital for tomato, banana and pineapple.

As regards reduced fertilizer consumption, these cards will not help reduce it but will help the farmer to decide which fertilizer to use and in what combination. If the scheme proves successful, we may witness a shift in the market where instead of selling plain fertilizers, companies might start the practice of selling modified fertilizers, custom-made for particular crops in specific regions. Politically, the government might be trying to push the scheme keeping in view the mounting fertilizer subsidy bill which is largely on account of urea alone. If this scheme helps in dissuading the farmers from overusing urea, it might turn out to be a win-win situation.

Talking about the practical impossibilities of the scheme, first and foremost, bridging the gap between the number of soil testing laboratories that exist today and the targeted number that needs to be established in the following three years is a behemoth task. The 'new class of entrepreneurs' may set up their establishments in urban areas and towns, but it is the villages that are mostly uninformed and severely affected. Moreover, the government should come up with incentives for those who seek to set up such laboratories in rural areas. The cost of testing the soil is Rs. 150 per sample for basic parameters like pH, electrical conductivity and primary-secondary nutrient content. As per analysts, deeper analysis of soil health involves Atomic Absorption Spectrophotometer which costs about Rs. 20 lakh. Once the cost of other equipment, chemicals, salaries of employees, capital cost, etc. is added up, it turns out to be more than Rs. 75 lakh.

This cost can only be recuperated from the farmers or the government if it decides to subsidize soil testing. Therefore, this is what the government could do in order to overcome the immediate shortcomings: subsidize soil testing; provide incentives for entrepreneurs; set up camps to spread awareness about the importance of soil health; and set up laboratories themselves in regions that need immediate attention. The entire scheme does not talk about what the farmer could do once he is aware of the health of the soil in his land. The government should also establish soil health clinics where

oblivious or unaware farmers could go and get appropriate solutions to the problems pertaining to the quality or health of the soil.

### **Conclusion**

pH of water samples analysed in Babaleshwar area varies from 6.75-9, Electrical conductivity of water ranged from 0.5 to 1.2 microsemens / cm. Salinity ranged from .5 to 4.2% and TDS values varied from 300 to 1050 ppm and hardness of all the water samples ranged from 200 to 600ppm respectively.

Similarly pH of all the soil samples analyzed in Babaleshwar ranged from 6.8-9, organic carbon values varied from .5 to 2.2 ct/acre indicating that most of the soil samples deficient in organic carbon, Nitrogen content of all the samples in low to medium range, phosphorous is also found to be from low to medium in most of the samples. Potassium is found to be in high range no need to add or supplement potassium fertilizer.

**Recommendation;** Water samples need to desalinate and some samples require to add coagulants. Organic manure need to be supplied regularly. Most of the soil samples deficient in nitrogen and phosphorus content hence nitrogenous and phosphate fertilizer should be added to soil samples.

**END**