

SOIL HEALTH CARD SCHEME AND ITS IMPORTANCE IN NORTHEAST REGION

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WHAT IS A SOIL HEALTH CARD AND HOW DOES IT WORK FOR FARMERS?

SHC is a printed report containing the status of the soil with respect to the 12 parameters, namely N,P,K (Macro-nutrients); S (Secondary- nutrient) ; Zn, Fe, Cu, Mn, Bo (Micro - nutrients); and pH, EC, OC (Physical parameters). Based on these parameters, the SHC will indicate fertilizer recommendations and soil amendment required for the rejuvenation of the farmer's field. The card will contain crucial information based on the soil nutrient status of a farmer's holding which will show recommendations on dosage of different nutrients needed. Further, it will advise the farmer on the fertilizers and their quantities he/she should apply, and also the soil amendments that will be necessary to undertake, so as to achieve optimal yields.

WHAT IS A SOIL HEALTH CARD SCHEME?

It is a Government of India's initiated by the Department of Agricultural and Co-operation under the Ministry of Agriculture and implemented through the Department of Agriculture to all the states and UT Governments. The primary motto of its introduction is to facilitate the farmer for better understandings of soil and Integrated Nutrient Management. Soil Health and Fertility is the first step towards maintaining the sustainable profitability of the farmers. Usage of fertilizers at an optimum dose also plays an important role under this scheme. In India the current consumption

SOIL HEALTH CARD		Name of Laboratory	SOIL TEST RESULTS		
Farmer's Details					
Name		S. No.	Parameter	Test Value	Unit
Address		1	pH		
Village		2	EC		
Sub-District		3	Organic Carbon (OC)		
District		4	Available Nitrogen (N)		
PIN		5	Available Phosphorus (P)		
Aadhaar Number		6	Available Potassium (K)		
Mobile Number		7	Available Sulphur (S)		
Soil Sample Details		8	Available Zinc (Zn)		
Soil Sample Number		9	Available Boron (B)		
Sample Collected on		10	Available Iron (Fe)		
Survey No.		11	Available Manganese (Mn)		
Khasra No. / Dag No.		12	Available Copper (Cu)		
Farm Size					
Geo Position (GPS): Latitude: Longitude:					
Irrigated / Rainfed					

Sl. No.	Parameter	Recommendations for Soil Applications
1	Sulphur (S)	
2	Zinc (Zn)	
3	Boron (B)	
4	Iron (Fe)	
5	Manganese (Mn)	
6	Copper (Cu)	

Sl. No.	Crop & Variety	Reference Yield	Fertilizer Combination-1 for N P K	Fertilizer Combination-2 for N P K
1	Paddy (Dhaan)			
2				
3				
4				
5				
6				

of NPK ratio is 6.7:2.4:1 which is skewed towards Nitrogen as against the ideal ratio of 4:2:1. Hence there is a need of balanced use of fertilizer, keeping this Government of India introduced SHC scheme across India (GOI, 2017).

OBJECTIVES OF SOIL HEALTH CARD SCHEME:

- To improve the soil quality and profitability of farmers
- Generating employment for the rural youths
- To improve timelines in the analysis of soil samples
- Introduction of single window approach from collection of issue of SHC minimizing delays and maximise convenience to farmers
- Improved and online delivery of SHC to the farmers using soil health card portal
- Providing soil testing facilities to farmers at their doorstep.



SOIL HEALTH STATUS AND ITS IMPORTANCE IN NORTHEAST REGION:

On 5th December 2015 the ministry of agriculture introduced the soil health card (SHC) scheme with a mission for providing SHC to all farmers in the country within a period of 2 years. It enable the farmers to apply recommended doses of nutrients based on soil test result for improved and sustainable soil health and fertility at, lower costs and higher profits. The ICAR report estimates that 6.98 million hectares or 2% of India's total geographical area have acidic soils. These are mostly in North East India, south Chhattisgarh and Kerala. In Northeast region the soil health card hold of more importance mostly as the region has widespread deficiencies and toxicities of most nutrients in the soil. Aluminium (Al) and Iron (Fe) toxicities are highly prevalent in this region which severely affects the plant growth and crop productivity and further makes the soil more acidic in nature. Other major nutrients which seem to be deficient in these soils are Phosphorus (P), Calcium (Ca), and Magnesium (Mg) while Zinc (Zn), Boron (B) and Molybdenum (Mo) are the micronutrient deficient in the soils of Northeast Region. Therefore Amelioration of these fertility constraints along with proper nutrient recommendation for the soils of these regions is necessary for improving soil health as well as crop productivity and that's where SHC comes into action.



SOIL SAMPLING METHODOLOGY FOR SOIL HEALTH CARD:

- Soil samples will be drawn in a grid of 2.5 ha in irrigated area and 10 ha in rain-fed area with the help of GPS tools and revenue maps.
- The ideal time for collection of soil samples is between sowing/planting of other crop i.e., when fields are vacant. Mostly in the months of March to June.
- The sampling depth for field crops should be at 0 to 15 cm.
- Samples have to be collected preferably with the help of stainless steel tube augur, or with a khurpi / spade or kassi.
- For plantation and fruit crops, composite sample from 0-30, 30-60, 60-90 cm depth should be taken and 4-5 pits dug out in about 0.5ha of the field.
- The samples will be collected by the State Government through the staff of their Department of Agriculture.

SOIL SAMPLING PROCEDURE:

- The soils are collected from different spot in the field usually following a zigzag pattern the soils are scrapped from the surface up to desired depth of 0-15 cm for making composite soil samples.
- In case the crop is standing in the time of sampling then the soils can be collected from in between the rows of the field.
- After the soil collection from various spots it is mixed thoroughly with hands and place properly in a paper or plastic sheet letting it to dry under room temperature.
- The bulk soil is reduced to 500 g by quartering process and spread in a plastic sheet dividing into 4 quarter, two opposite quarter should be discarded and remaining two should be remixed. The process is repeated until 500 g is obtained.

WHO AND WHERE WILL THE SOIL SAMPLE BE TESTED?

- The soil sample will be tested as per the approved standards for all the agreed 12 parameters in the following way:
- At the Soil Testing Laboratories owned by the Department of Agriculture and by their own staff.
- At the STLs owned by the Department of Agriculture but by the staff of the outsourced agency.
- At the STLs owned by the outsourced agency and by their staff.
- At ICAR Institutions including KVKs and SAUs. . At the laboratories of the Science Colleges/ Universities by the students under supervision of a Professor/ Scientist.

AWARENESS AND SHC SCHEME PARTICIPATION IN NORTHEAST REGION:

North east region has the lowest awareness of 31.8 percent in compare to the other states of India. The reason being the practice of traditional method such as jhoom cultivation/ slash and burn technique in mass scale and its prolonging attachment and also less use of fertilizer. It is also noted that people of Northeast Region mostly prefer organic farming over the use of fertilizers which pave the way for lesser priority of SHC at the official as well as farming level. The participation of farmers from Northeast Region and the state as whole about the SHC scheme found to be less than 10%. These data necessitate the need for general sensitization among the rural farmers especially in the NER about the SHC, the perception that its utility is not limited only till the fertilizer application but the ways for improving soil health.

CONCLUSION:

This scheme is very useful for farmers at all the levels however there may be some constraints which are being looked upon effectively. It is too short a time for the scheme (only 2 years old) to carry out a full-fledged impact assessment. Given the short duration of the scheme, awareness levels are good. At the same time participation of farmers in meetings, exposure visits are not high. Awareness campaigns need to be organized on content of SHCs, use of recommended practices, reduction in fertilizer use and costs and increase in profitability. Also in the states like NER it is important to address these issues to gain confidence of the farmers in adoption of the fertilizers as per the recommendation in the SHC. There is a need for strengthening the soil health card related extension services to provide better advisories.

