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## Awareness of Farmers towards Soil Health Card Scheme in Anantapur district of Andhra Pradesh

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#### Abstract

Soil test based nutrient management has emerged as a key issue in efforts to increase agricultural productivity and production since optimal use of nutrients, based on soil and improve crop productivity and minimize wastage of these nutrients, thus minimizing impact on environment leading to bias through optimal production. Governments do efforts towards these through Soil Health Cards. The study was conducted in Anantapur district of Andhra Pradesh (2018- 2019). A total of 240 SHC beneficiaries were selected from six mandals. The results revealed that, majority (67.91 %) of SHC scheme farmers had possessed medium level of awareness about SHC scheme followed by high (17.92%) and low (14.17%) levels of awareness about SHC scheme respectively. Majority of SHC scheme farmers possessed medium level of awareness about SHC scheme. The possible reason behind medium level of awareness may be due to different factors namely medium level of education, extension contact, risk orientation, exposure to mass media, social participation and farmers' interest in new technology. Now a day's farmers are feeling the need of balanced utilization of fertilizers which made them to fetch requisite information regarding the SHC scheme.

**Keywords:** Soil health card, awareness, soil health, soil health management

#### Introduction

Soil is one of the elements required for farming as it provides nutrients to the plant. Soil health plays a vital role to ensure sustainable agricultural production. Soil health, also referred to as soil quality, is defined as the continued capacity of soil to function as a vital living ecosystem that sustains plants, animals, and humans. This definition speaks to the importance of managing soils so they are sustainable for future generations. To do this, we need to remember that soil contains living organisms that when provided the basic necessities of life - food, shelter, and water - perform functions required to produce food and fiber. The components of soils are mineral, organic matter, water and air, the proportions of which vary and together form a system for plant growth (<https://www.nrcs.usda.gov/in>) Farmers are resorting to addition of more and more fertilizers to obtain yields but as a result continued degradation of natural resources under intensive agriculture and also declining the productivity and stagnation in food grains production in the country. Soil works for you if you work for the soil by using management practices that improve soil health and increase productivity and profitability immediately and into the future. That's why understanding soil health condition is essential to the sustainability and stability of the entire ecosystem of farmland (Xue. *et al.*, 2019) [4]. A fully functioning soil produces the maximum amount of products at the least cost. Maximizing soil health is essential to maximizing profitability. Soil will not work for you if you abuse it. Managing for soil health (improved soil function) is mostly a matter of maintaining suitable habitat for the myriad of creatures that comprise the soil food web. This can be accomplished by disturbing the soil as little as possible, growing as many different species of plants as practical, keeping living plants in the soil as often as possible, and keeping the soil covered all the time.

By keeping all the above points in view Government of India have launched Soil health card scheme on 19 February 2015. Under the scheme, the government plans to issue soil cards to farmers which will carry crop-wise recommendations of nutrients and fertilizers required for the individual farms to help farmers to improve productivity through judicious use of inputs. All soil samples are to be tested in various soil testing labs across the country. Thereafter the experts will analyze the strength and weaknesses (micro-nutrients deficiency) of the soil and suggest measures to deal with it. The result and suggestion will be displayed in the cards.

The scheme aims at promoting soil test based and balanced use of fertilizers to enable farmers to realize higher yields at lower cost. SHC is a printed report that a farmer will be handed over for each of his holdings. It will contain the status of his soil with respect to 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 this, the SHC will also indicate fertilizer recommendations and soil amendment required for the farm. ([www.soilhealth.dac.gov.in](http://www.soilhealth.dac.gov.in)). Government is promoting and recommending soil test based balanced and integrated nutrient management through conjunctive use of both inorganic and organic sources of plant nutrient management to sustain good soil health and higher crop productivity (Patel, 2013) <sup>[1]</sup>. The present study was conducted in anantapur district in order to assess awareness of the farmers towards soil health card scheme.

### Materials and methods

The study was conducted in Rayalaseema region of Andhra Pradesh state. Anantapuramu district was selected for the study because there exists diversified crops which require different types of soils. Six mandals from Anantapuramu district were selected randomly by following lottery method of simple random sampling. Six mandals namely Raptadu, Kanekal, Tadipatri, Gudibanda, Dharmavaram, Gorantla were selected randomly by following lottery method of sampling. Two villages were selected from each of the 6 mandals by following simple random sampling thus making a total of 12 villages. From each village, 20 farmers were selected by following simple random sampling procedure, thus making a total of 240 respondents who were having soil health cards had been selected for the study. The data were collected through personal interview method with the help of pre-structured scheduled from October 2018 to December 2018 designed with the objective of finding out the benefits derived by soil health card scheme as perceived by farmers. The

collected data was analysed and frequency and percentage were calculated and tabulated.

### Results and discussions

Awareness is the ability to directly know and perceive, to feel or to be conscious of events, objects, thoughts, emotions or sensory pattern. For the present investigation, it was operationalized as awareness level of farmers about usefulness of soil health card. For quantifying this variable, the farmers were queried whether they are aware about SHC and its benefits. Accordingly, the feedback from farmers was recorded as yes with score of '1' and no with score '0'. The farmers were grouped into three categories namely low, medium and high on the basis of mean and S.D.

**Table 1:** Distribution of SHC scheme farmers according to their awareness about SHC scheme (n=240)

S.No	Level of awareness	Frequency	Percentage
1	Low awareness	34.00	14.17
2	Medium awareness	163.00	67.91
3	High awareness	43.00	17.92
	<b>Total</b>	<b>240</b>	<b>100.00</b>
		<b>Mean = 27.79</b>	<b>SD= 5.57</b>

It was clear from the data manifested in table 1, that, majority (67.91 %) of SHC scheme farmers had possessed medium level of awareness about SHC scheme followed by high (17.92%) and low (14.17%) levels of awareness about SHC scheme respectively. Majority of SHC scheme farmers possessed medium level of awareness about SHC scheme. The possible reason behind medium level of awareness may be due to different factors namely medium level of education, extension contact, risk orientation, exposure to mass media, social participation and farmers' interest in new technology. Now a day's farmers are feeling the need of balanced utilization of fertilizers which made them to fetch requisite information regarding the SHC scheme.

**Table 2:** Item wise awareness of farmers towards SHC scheme (n=240)

S.No	Awareness about soil health card	Answers			
		Yes (1)		No (0)	
		f	%	f	%
1	S.H.C is worth for balance use of chemical fertilizer	234	97.5	6	2.5
2	S.H.C is useful scheme to understand fertility status of the soil	195	81.	45	18.8
3	S.H.C scheme is not useful for illiterate farmers	176	73.3	64	26.7
4	S.H.C is useful to know the physical properties of the soil influence the soil production	178	74.2	62	25.8
5	Are the results discussed among farmers in the village?	184	76.7	56	23.3
6	Do you follow the recommended dosage of fertilizers as per soil health card	172	71.7	68	28.3
7	It is important to read instructions present on Soil health card	191	79.6	49	20.4
8	S.H. C lowers the cost of cultivation	172	71.7	68	28.3
9	S.H.C helps in increasing the agricultural productivity	174	72.5	66	27.5
10	S.H.C helps in providing the site specific nutrient management	179	74.	61	25.4
11	Soil samples from irrigated areas for testing are drawn in a grid of 2.5hac.	186	77.5	54	22.5
12	SHC scheme was started in the year 2015.	164	68.3	76	31.7
13	SHC scheme was first started by Rajasthan state	186	77.5	54	22.5
14	The web portal for SHC is <a href="http://www.soilhealth.dac.gov.in">www.soilhealth.dac.gov.in</a>	183	76.3	57	23.8
15	There are totally 91 soil testing laboratories in Andhra Pradesh	175	72.9	65	27.1
16	Soil health card consist of details about 12 parameters.	181	75.4	59	24.6
17	Soil samples from rainfed areas for testing are drawn in a grid of 10 hac	172	71.7	68	28.3
18	Soil samples will be collected by staff of state department of agriculture	163	67.9	77	32.1
19	Soil samples are taken after harvesting of kharif and rabi crop	184	76.7	56	23.3
20	The payment given to state government by central government per sample is Rs.190/-	176	73.3	64	26.7
21	The international year of soils is 2015.	201	83.8	39	16.3
22	SHC helps to improve soil quality and profitability of farmers	185	77.1	55	22.9
23	SHC provides online delivery of SHC to the farmers using soil health card portal	165	68.8	75	31.3

24	SHC scheme provides soil testing facilities to farmers at their doorstep	177	73.8	62	25.8
25	S.H.C is useful to adopt integrate nutrient management practices in the crop	171	71.3	69	28.8
26	SHC will be distributed to farmers once in three years cycle.	177	73.8	63	26.3
27	The physical parameters which are being reported in SHC are colour, Ph, EC,OC	187	77.9	53	22.1
28	The macro nutrients being tested under SHC scheme are N, P and K	170	70.8	70	29.2
29	The secondary nutrient being tested under SHC scheme is Sulphur	175	72.9	65	27.1
30	The micro nutrients being tested under SHC scheme are Zn, Fe, Cu, Mn and Bo	182	75.8	57	23.8
31	SHC provides recommendations for reclamation of acidic and alkaline soils	167	69.6	73	30.4
32	SHC provides guidelines for integrated nutrient management	187	77.9	53	22.1
33	Are you aware of recommended dosages of fertilizers for paddy crop as per soil health card?	191	79.6	49	20.4
34	Are you aware of recommended dosages of fertilizers for Bengal gram crop as per soil health card?	174	72.5	66	27.5
35	Are you aware of recommended dosages of fertilizers for ground nut crop as per soil health card?	173	72.1	67	27.9
36	Are you aware of recommended dosages of fertilizers for cotton crop as per soil health card?	182	75.8	58	24.2
37	Soil health card provides the farmers a well-monitored report of the soil which is chosen for cultivation of crops.	162	67.5	78	32.5
38	Are you aware of deficiencies of nutrients in your soil as per soil health card?	203	84.6	37	15.4
39	Are you aware of precautions to be taken while taking soil sample?	146	60.8	94	39.2
40	Are you aware of method of taking soil sample?	154	64.2	86	35.8

### Conclusion

In the present study it was found that majority of farmers were aware about Soil Health Card that it provides information on nutrient status of soil and provide a recommended dose of fertilizers according to the present need of crop and soil. Most of the farmers are aware that S.H.C is worth for balance use of chemical fertilizer, Soil Health Card provides corrective measure for improving soil health and for getting better yield by reducing extra expenditure by supplying required nutrients status in the soil. Though more than fifty percent of the respondents are aware about soil health card scheme still more respondents should be made aware regarding the soil health card scheme. Since soil health card is a beneficial programme it will be successful when card is given in the right time to the right respondent. Hence government should take few measures to raise awareness among farmers towards soil health card scheme and ensure proper delivery of the card in time to the respondent.

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