

Original Research Article

Attitude and Knowledge of Farmers towards Soil Analyzing

Comment [ZA1]: Analysis

Comment [ZA2]: Modify title as "Knowledge and Attitude of Farmers for Conducting Soil Analysis"

Abstract

Comment [ZA3]: Delete instead add colon

Judicious application of chemical fertilizers by the farmers in crops is very much essential to achieve maximum production and to earn maximum profit. Soil testing is a comprehensive soil fertility evaluation programme, which helps the farmer's injudicious application of chemical fertilizers. The farmers will be able to know how much nutrients are already available in the soil and how much will have to be provided additionally for a particular crop. The majority of farmers had knowledge about soil testing practices. Majority of respondents were using the knowledge gained from scientists working in Krishi Vigyan Kendra in the operational area and the personnel of State Deptt. of Agriculture. Most of the respondents were in disagreement with the statements and mostly adaptors possessed unfavourable attitude towards soil testing practices. Majority of farmers agreed with the statement "Soil testing is necessary for better crop production". The efforts should be made by KVK and Deptt. of Ag. to encourage the farmers in adoption of soil testing practices by organising training programmes and campaigns specially on soil testing process.

Comment [ZA4]: To apply chemical fertilizers in a judicious way

Comment [ZA5]: Delete it

Comment [ZA6]: Rewrite this sentence like The farmers should be able to know the exact quantity of nutrient to be applied for a particular crop based on soil test analysis

Comment [ZA7]: Replace it with have

Comment [ZA8]: Delete it

Comment [ZA9]: Replace it with "experts"

Comment [ZA10]: Write this sentence in a better way to make it more meaningful

Comment [ZA11]: Write full form

Comment [ZA12]: Delete it

(Key words : Soil, Nutrient, Testing, Fertilizer etc.)

Introduction

Comment [ZA13]: Put all the headings as per journal format

Comment [ZA14]: Add "essential"

Comment [ZA15]: Write like this " as it not only a medium for plant growth but also supplies nutrients to plants.

Comment [ZA16]: Replace it with the sentence in mentioned comment

Comment [ZA17]: Write nutrients instead of elements

Comment [ZA18]: Delete it

Comment [ZA19]: Write it after continuously

Comment [ZA20]: Delete it

Comment [ZA21]: Delete it

Comment [ZA22]: Add "the"

Comment [ZA23]: Replace with capacity

Soil is one of the elements required for farming as it provides nutrients to the plant. Healthy soil contain all the elements for growth and development of crop. The soil deprived from one or more nutrient either reduces the production or degrades the quality of crops. Therefore, proportion and quantity of macro and micro nutrients all together 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. Judicious application of chemical fertilizers by the farmers in crops is very much essential to achieve maximum production and earn maximum profit. The research studies revealed that most of the farmers are using continuously larger quantities of unbalanced chemical fertilizers to increase production without knowing the fertility status of the soils of their fields (Srivastava and Pandey, 1999). Soil Testing is well recognized as a sound scientific tool to assess inherent power of soil to supply plant nutrients. The benefits of soil testing have been

established through scientific research, extensive field demonstrations and on the basis of actual fertilizer use by the farmers on follow recommendations. Neufeld and Davison (2000) stated that soil testing is the only necessary and available tool for determining the amount of soil nutrients. Hence, to avoid deterioration of soil in long run and visualizing the importance of balance nutrient in crop production, government of India commenced soil health card programme. The soil health card is a simple document, which contains useful data on soil based chemical analysis of the soil test to describe soil health in term of its nutrient availability and its physical and chemical properties. Soil health card (soil test result) can be used to optimize the use of fertilizer in the integrated nutrient management (INM) system. The soil test /soil health card programme brings together the scientific community in the field of agriculture, the information repository of latest tool, techniques and cropping practices, the farmers and the Government for the economics upliftment of the people at large. Since, change in knowledge preceded acceptance and application of an innovation, it is therefore, always important to find out the factor responsible for positive or negative disposition associated with farmer toward the usefulness and application of soil test / soil health card programme (Patel et al. 2017). Soil testing is a comprehensive soil fertility evaluation programme which helps the farmer's in judicious application of chemical fertilizers in a balanced form to the crops. The soil testing of a particular field gives reliable information about the deficiency of major and micro nutrients in the soils as well as hazards such as soil acidity, alkalinity and salinity. After testing the soil, farmers can know the exact amount of nutrients to be applied for a particular crop in a particular field. The farmers will be able to know how much quantities of nutrients are already available in the soil and how much quantities will have to be provided additionally for a particular crop in a particular field. Therefore, soil testing will definitely be advantageous to the farmers in achieving maximum production and in earning max profit. So it is essential to create maximum awareness among farmers about judicious use of chemical fertilizers. Keeping in view the importance of soil testing towards optimum production of crop and maximum net profit of farmers, with the following objectives: 1) To find out the knowledge of farmers toward soil testing practices. 2) To study the attitude of farmers towards soil testing practices.

A fertilizer is very much essential to achieve maximum production and to earn maximum profit. The research studies revealed that most of the farmers are using continuously larger quantities of chemical fertilizers to increase production without knowing the fertility status of the soils of their field (Srivastava and Pandey, 1999). Soil testing is a comprehensive soil fertility evaluation programme which helps the farmers in judicious application of chemical fertilizers to the crops. The soil testing of a particular field gives reliable information about the deficiency of

Comment [ZA24]: Replace with "by"

Comment [ZA25]: Write "following"

Comment [ZA26]: Write "balanced"

Comment [ZA27]: Replace with "nutrition"

Comment [ZA28]: Replace with "for"

Comment [ZA29]: Government

Comment [ZA30]: Write "started"

Comment [ZA31]: Delete it

Comment [ZA32]: delete

Comment [ZA33]: no need to write it

Comment [ZA34]: Delete it

Comment [ZA35]: Write as per journal format

Comment [ZA36]: This is repetition as it is already written in introduction

Comment [ZA37]: Delete it

Comment [ZA38]: Add "This study was carried out in the district Barmer of Rajasthan with the following objectives"

Comment [ZA39]: And to observe the

Comment [ZA40]: Delete it

nutrient in the soil as well as hazard such as soil acidity, alkalinity and salinity etc. After analyzing the soil, farmer can know the exact amount of available nutrients and how much will have to be applied additionally for a particular crop. So it is essential to create maximum awareness among farmers about judicious use of chemical fertilizers (Kumar *et al.* 2010). Keeping in view the importance of soil testing towards optimum production of crop and maximum net profit of farmers, this study was carried out in the district Barmer of Rajasthan to know the status of present knowledge of the farmers.

Material and Methods

The study was conducted in ten randomly selected villages of district Barmer in 2018-19. Twenty farmers were randomly selected from each village who have availed soil testing technique. The data were collected by personal interview method using a schedule designed for this purpose. Majority of farmers (92 percent) had knowledge about soil testing.

Result and Discussion

The data given in the Table 1 indicate that majority of respondents (35.6 and 25.2 %) were using the knowledge gained from scientist working in Krishi Vigyan Kendra in the operation area and the personnel of State Department of Agriculture. Four percent respondents gained knowledge through television. Only three percent respondents collected knowledge from radio and farm magazines, extension literature about soil testing and seven percent farmers had no knowledge of soil testing.

Table 1: Distribution of respondents according to utilization of source of knowledge.

S. No.	Source of knowledge	Frequency	Percentage
1	KVK Scientist	89	35.6
2	Personnel of State Deptt. of Ag.	63	25.2
3	Fellow Farmers	15	6
4	Farm Magazines/Ag. Ex. Literature	07	2.8
5	Radio	06	2.4
6	T.V. Talk	10	4
7	Kisan Gosthis	14	5.6
8	Kisan Mela	26	10.4
9	No Knowledge	20	8

Comment [ZA41]: Delete it as it is written unnecessarily

Comment [ZA42]: Mention the name of villages and the criteria used for selecting the respondents in a comprehensive way

Comment [ZA43]: was

Comment [ZA44]: mention the statistical tool and procedure used for analyzing the data generated

Comment [ZA45]: delete

Comment [ZA46]: indicated

Comment [ZA47]: have

Comment [ZA48]: used

Comment [ZA49]: delete it

Comment [ZA50]: experts

Comment [ZA51]: from

Comment [ZA52]: whereas only

Comment [ZA53]: only

Comment [ZA54]: full form

Total	250	100
-------	-----	-----

Comment [ZA55]: write in a proper way I mean write 6.0, 4.0 like this for whole data

The results in Table 2 show that the majority of respondents were in the disagreement with the statements and mostly adoptors possessed unfavourable attitude towards soil testing but it could also be noted that sometimes they had showed positive attitude because some of them (2.4%) undecided with the statement that “Soil testing is wastage” of time and money. When the respondents were asked about the “Result of Soil testing is reliable” only 38 percent agreed with the statement whereas 58 percent disagreed with it. 43.2 Percent adoptors said that “soil testing is very long process”. This means the results of soil testing agencies are not working properly in the area and the farmers did not show much faith on the results of soil testing. It was also observed that majority of farmers agreed (78.4%) with the statement “Soil testing is necessary for better crop production”. It means the farmer’s attitude was generally conservative.

Comment [ZA56]: results presented in

Comment [ZA57]: showed

Comment [ZA58]: write as “ 2.4 % respondents

Comment [ZA59]: did not have any decision for the statement

Comment [ZA60]: delete

Comment [ZA61]: Add “Moreover”

Comment [ZA62]: P should be small

Comment [ZA63]: Showed that

Comment [ZA64]: delete

Comment [ZA65]: delete full stop and write “ indicating”

Table 2: Distribution of respondents according to their attitude.

S. No.	Statements	Response						Total
		Agree		Undecided		Disagree		
			%		%		%	
1.	Results are given timely	75	30	25	10	150	60	250
2.	Results of soil testing are reliable	95	38	10	4	145	58	250
3.	Behaviour of soil testing staff is good	103	41.2	25	10	122	48.8	250
4.	Number of crops increased in one year after soil testing.	92	36.8	20	8	138	55.2	250
5.	Soil testing is necessary for better crop production.	196	78.4	5	2	49	19.6	250
6.	It is very long process.	108	43.2	15	6	127	50.8	250

7.	Soil testing is wastage of time and money	34	13.6	6	2.4	210	84	250
8.	Expenditure of crop production decreases after soil testing.	98	39.2	11	4.4	141	56.4	250

CONCLUSION

The study indicated that the majority of respondents had poor knowledge and maximum knowledge gap was observed in proper technique of sampling for fruit plantation and normal crops. the study also shows positive attitude because most of adaptors did not agree with the statement that “soil testing is wastage” of time and money and it was also observed that majority of farmers agreed (78.4 %) with the statement “soil testing is necessary for better crop production. The efforts should be made by KVK and Department of agriculture to encourage the farmers in adoption of soil testing practices by organising training programmes on importance of soil testing or soil health card and its utility and campaigns especially on soil testing process. By adopting the soil testing practices the farmers also reduced the large unnecessary chemical fertilizer consumption and the judicious use of chemical fertilizers could be popularized. Therefore, as per problem faced and suggested by the farmers more scientific and educational trainings and facilities are required to disseminate the technology at large. Extension worker can take their lead in this to overcome the barriers in adoption of the soil test technology.

Reference :

- Jackson, M.L., 1973, Soil Chemical Analysis, Prentice Hall of India Pvt. Ltd., New Delhi, p. 38-56.
- Kumar P., Singh A.K., Singh A and Singh R.K.2010. Knowledge and Attitude of Farmers towards Soil Testing. *A Journal of Multidisciplinary Advance Research*. 12-14.
- Lindsay W L and Norvell W A (1978). Development of DTPA soil test for zinc, iron, manganese and cooper. *Soil Science Society America Journal* **42**: 421-428.
- Olsen, S.R., Cole, C.V., Watanabe, F.S. and Dean, L.A. 1954. Estimation of available phosphorus in soil by extraction with sodium bicarbonate. *Circular 939*, USDA, Washington, DC, USA.

Comment [ZA66]: soil

Comment [ZA67]: The

Comment [ZA68]: Agriculture

Comment [ZA69]: Delete it

Comment [ZA70]: Add comma

Comment [ZA71]: properly

Comment [ZA72]: delete it

Comment [ZA73]: workers

Comment [ZA74]: prove to be very useful in

Comment [ZA75]: delete

Comment [ZA76]: bridging

Comment [ZA77]: References should be written as per journal format

- Pagaria, P. (2011). Knowledge and attitude of small and marginal farmers towards soil testing. *Journal of Advances in Developmental Research*. 2(2): 171-173.
- Patel, J. K., and Chauhan, N. B. (2012). Attitude of farmers towards soil health card (SHC) programme. *Asian Journal of Soil Science*. 7(1): 114-116.
- Patel, G.G., Y.C. Lakum, Aakash Mishra and J.H. Bhatt (2017). Awareness and Knowledge Regarding Soil Testing and Utility Perception of Soil Health Card. *IJCMAS*. Vol.6 (10):329-334.
- Patodiya, R.S. and R.H. Meena (2016). Knowledge and attitude of farmers regarding soil testing in district Rajsamand. *Indian Journal of Extension Education and Rural Development*. Vol.24:60-61
- Rajput, H. D., and Chinchmalatpure, Umesh R. (2016). Knowledge and Adoption of Bt Cotton Cultivation Practices. *Indian Journal of Extension Education*. 52(1&2):121-123.
- Solanki RL, Nagar KC, Indoria D (2020). Knowledge and Attitude of Farmers Regarding Soil Testing in Chittorgarh (Rajasthan). *International Journal of Agricultural Education and Extension*, 6(2): 379-381.
- Srivastava, Y.C. and Pandey, A.P. 1999. Knowledge and attitude of small and marginal farmers towards soil testing. *Agril. Extn. Review*. 11 (6).
- Subbiah, B.V. and Asija, G.L. 1956. A rapid procedure for the estimation of available nitrogen in soils. *Current Science* 25(7): 259-260.
- Walkley A J and Black I A (1934). Estimation of soil organic carbon by the chromic acid titration method. *Soil Science* 37: 29- 38.