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Knowledge and attitude of farmers towards soil testing practices in Saharsa district of Bihar

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Abstract
Soil testing is considered an important tool to assess plant nutrients needs and is also a very useful strategy to formulate crop and site specific nutrient recommendations. Soil based chemical data to describe the soil health in terms of nutrient availability and its physical and chemical properties, is an useful contains of soil health. The present investing was undertaken in Saharsa district of Bihar. The majority of the farmers had knowledge about soil testing practices. Majority of respondents were using the knowledge gained from scientist working in the department of soil science and agricultural chemistry of Mandan Bharti Agriculture College, Agwanpur, Saharsa and the personnel if State Department of Agriculture. Most of the respondents were in disagreement with the statement and mostly adaptors, possessed unfavourable attitude towards soil testing practices. Majority of farmers agreed with the statement "Soil testing is essential for higher crop production". The efforts should be made by Mandan Bharti Agriculture College, Agwanpur, Saharsa, Bihar and Department of Agriculture to encourage the farmers in adoption of soil testing practices by ongoing training programme and campaign specially on soil testing process.

Keywords: Knowledge, attitude, soil testing, bihar.

Introduction
Soil health play vital role in ensuring sustainable production with optimizing the utilization of fertilizer and reducing its waste. Healthy soil contains 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. Therefore, proportion and quantity of macro and micro nutrient altogether refers to soil health. Most of the farmers are using continuously larger quantities of chemical fertilizers to increase production without knowing the fertility status of soil if their field (Srivastava and Pandey, 1999) [2]. It is found that lot if area is under problematic soil. Farmers could be educated that they can know the condition of their soil. It can be possible only through soil testing exercises. Soil testing is a comprehensive soil fertility evaluation programme through which farmers can help themselves in better management of their agricultural operation and use of fertilizers for optimum production. It is also helpful in the solution if the crops. Vaish (1998) [3] reputed that there is lack of knowledge among farmers about fertilizers and absence of soil testing fertilizers and crop wise consumption of fertilizers. To encourage more soil testing as the best management practices, the information must flow from farmers to laboratory and back to farmers (Voughan, 2000) [4]. Singh and Ray (1985) [1] reputed that attitude towards fertilizers use in better farming were essential in influencing the level of fertilizer use of farmers. Taking these facts into consideration the study was conducted to study the knowledge and attitude of farmers about soil testing practices.

Methodology
The present study was conducted in Saharsa district of Bihar which was selected purposively because in Koshi region soil testing practices is being adopted mainly in this district. Five villages namely Barahsher, Purusottampur Purikh, Rahua Mani, Rakia and Menha from the district were selected because these villages had been adopted by Mandan Bharti Agriculture College, Agwanpur, Saharsa at one time or the others for certain extension activities. Forty farmers randomly selected from each village who have availed soil testing techniques. Thus the sample size comprised of two hundred respondents for the present study.

Result and discussion
The data in the Table 1 indicated the knowledge of the respondents about soil testing practices revealed that majority of the farmers (83 percent) had knowledge about soil testing. Only (17 percent) respondents have no knowledge of soil testing. The knowledge about soil testing had

been found satisfactory. Most of the farmers did not know the location of soil testing laboratories distribution of respondents according to utilization of source of knowledge has been presented in the Table 2. The data indicated that majority of respondents (37 and 29 percent) were using the knowledge gained from scientist of Mandan Bharti Agriculture College, Agwanpur, Saharsa and the personnel of Department of Agriculture, Government of Bihar. Ten per cent respondents acquired knowledge about soil testing through Kishan Chaupal and seven per cent respondents gained knowledge about soil testing through Kishan gosthi organized by Mandan Bharti Agriculture College, Agwanpur, Saharsa. Five per cent respondents gathered knowledge about soil testing practices from fellow farmers while two per cent respondents collected knowledge through watching television. Only one per cent and three percent respondents gathered knowledge about soil testing through radio and extension literature, respectively. Six per cent respondents had no ideas of soil testing.

Majority of the farmers were in disagreement with the statement and mostly adaptors possessed unfavourable attitude towards soil testing but it could also be noticed that sometimes they had showed positive attitude because most of the adaptors (89 per cent) did not agree with the statement that "soil testing is wastage of time and money". When the farmers were asked that results of soil testing is authentic only 36 per cent adopters agreed with the statement whereas 60 per cent adopters disagreed with the statement. Sixty per cent farmers state "soil testing is a lengthy process". This mean the soil testing agencies are not work properly in the area by one and another reason and the farmers did not show much interest on soil testing and they observed that it is very lengthy process. It was also observed that majority of respondents (78 per cent) agreed with the statement (Table 3). Soil testing is essential for higher crop yield. It strongly advocated that farmer's attitude was generally conservative.

Table 1: Knowledge of farmers about soil testing practices

S. No.	Response	No. of Respondents	Percentage
1.	Positive	166	83.00
2.	Negative	34	17.00

Table 2: Distribution of respondents according to utilization of source of knowledge

S. No.	Source of knowledge	Frequency	Percentage
1.	Personnel of State Department of Agriculture	58	29
2.	Fellow Farmers	10	05
3.	Scientist of Mandan Bharti Agriculture College, Agwanpur, Saharsa	74	37
4.	Extension literatures	06	03
5.	Radio	02	01
6.	Television	04	02
7.	Kishan Chaupal	20	10
8.	Kishan Gosthi	14	07
9.	No knowledge	12	06

Table 3: Distribution of respondents according to their attitude towards soil testing practices

S. No.	Statement	Response			
		Agree	Disagree	Undesired	Total
1.	Soil testing response are given timely	46 (23%)	122 (61%)	32 (16%)	200
2.	Results of soil testing is authentic	72 (36%)	120 (60%)	8 (4%)	200
3.	Behaviours of personal associated with soil testing is good	74 (37%)	108 (54%)	18 (9%)	200
4.	Number of crops increased in one year after soil testing	58 (29%)	126 (63%)	16 (8%)	200
5.	Soil testing is essential for higher crop yield	156 (78%)	42 (21%)	2 (1%)	200
6.	It is a lengthy process	120 (60%)	70 (35%)	10 (5%)	200
7.	It is wastage of time and money	20 (10%)	178 (89%)	2 (1%)	200
8.	Cost of cultivation of crop decreased after soil testing	86 (43%)	104 (52%)	10 (5%)	200

Conclusion

The study revealed that adopters have good knowledge of soil testing practices and they also knew its importance. But the attitude of farmers about soil testing practices was unfavourable. The efforts should be made by scientist of Mandan Bharti Agriculture College, Agwanpur, Saharsa and Department of Agriculture, Government of Bihar to organize training programme to convenience/ aware farmers about soil testing practices before each season (*Kharif*/*Rabi*). Extension efforts are required to popularize soil testing through demonstration, use of mass media like radio, television and farm literatures. Unemployed youth should be trained for soil testing, who could work at village level. The services of mobile soil testing laboratory need to be improve.

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