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Farmers' perception about the impact of plant clinic on potato productivity: Implications for agriculture extension service in Punjab Pakistan

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Abstract
Agricultural Extension is working on various projects to develop agriculture and make positive decisions for the future. Now a day agricultural extension adopted the latest approach to plant clinics. Therefore, the present study was designed to identify the farmers' perception about the impact of plant clinics on potato productivity in Tehsil Depalpur, District Okara. A sample of about 120 farmers was randomly selected to gather information about the underlying research. It was found that farmers had the perception that the plant clinics provided skills about productivity for potato is ranked 1st. However, retention about plant productivity and awareness about the planted area were ranked as 2nd to 3rd, respectively. It was found that farmers had the perception that the plant clinics provided information sources of funding provide government and this information was ranked 1st, information about funding policies/ level of self-funding and available of funds were ranked as 2nd to 3rd, respectively. However, plant clinics provided information about central level support leadership, follow policy and governance framework was ranked as 2nd to 3rd, respectively.

Keywords: Agricultural extension, plant clinics. Farmers', perception, information sources

Introduction

Plant wisdom is a standardized system led by CABI that helps farmers lose a smaller amount of what they produce because of plant health disorders. They establish and encourage plant clinics set up in the company of national agricultural advisory services. Trained plant doctors have been named to run these clinics, where farmers can get the best advice and practical demonstration for their plants as well. Based on the concept of human health clinics, plant clinics are developed; farmers come to the clinic with their harmed plant sample and clinic doctors diagnose the disease and give plant prescriptions for practically applied science base (Bezabih and Hadera. 2007) [1].

Plant clinics are linked to a plant-wise knowledge bank, a portal for getting practical information on plant health online and offline, including diagnostic tools, advice on best practice pest control and even plant clinic data analysis for needed crop protection. They are both plant-wise approach tools intended to help the national plant health program. Stronger the country's plant health program will be encouraged to support farmers and provide a secure, continuous food supply and improve their livelihoods.

The available literature has been investigated carefully and no such study has been found, and it is stated that the establishment of a monitoring and evaluation system at the district level is a national challenge for Pakistan to improve local level performance (Plant-wise Annual Report, 2016; MOE. 2009) [9, 6]. First, an impact assessment study was done in Kenya which was not yet completed due to final data collection and the second study has been planned for Pakistan in 2017(Plant-wise Annual Report, 2016) [9].

In addition to promoting plant clinics and information banks but also plant-wise, the goal is to improve the national plant health network by bringing in many other people who play an important role in jointly providing knowledge to farmers under a single strategy. It involves extensionists (Khurshid, 2015: Khatam, 2011) [10, 4], academics, educators, policy-makers, suppliers of agricultural inputs, farmer organizations i.e. NGOs (Munawar, 2012) [8]. It is the thought that the plant health program was able to build and support a country for future sustainable agricultural development.

They help stakeholders develop awareness, expertise and long-term relationships with potato farmers to have less loss awareness and feed more (Muhammad *et al.*, 2008; Endale *et al.*, 2008; FAO. 2010) [7, 2, 5].

So, that the present study was designed to identify the farmers' perception about the impact of plant clinics on potato productivity in Tehsil Depalpur, District Okara. The results of the current study are used for taking some effective steps to improve plant clinics activities to achieve the broader objective of increasing agricultural productivity.

Methodology
The list of visitors was collected from the office and it was found that there was a total of 175 farmers who were considered as population. A sample of about 120 farmers was randomly selected to gather information about the underlying research. The list of the last three months (January -March 2020) of visiting farmers was taken from the extension office Tehsil Depalpur. The list was recognized according to village wise for contacting with farmers easily. The researcher used a well-structured questionnaire for the collection of data from the farmers taking advisory services. This questionnaire was prepared with great care and with the consultation of the experts. The data were analyzed through PC program SPSS (Social Packages for Social Sciences).

Results and Discussion

Table 1: Farmers' perception about plant health workforce productivity

Perception about plant health work force productivity	Yes		No		Very low		Low		Medium		High		Very-high	
	f	%	*F*	%	*f*	%	*f*	%	*f*	%	*f*	%	*f*	%
Awareness of potato clinic meaning	68	56.7	52	43.3	7	5.8	11	9.2	16	13.3	20	16.7	14	11.7
Skills about productivity	70	58.3	50	41.7	4	3.3	6	5.0	12	10.0	22	18.3	26	21.7
Knowledge about work load control	54	45.0	66	55.0	8	6.7	10	8.3	14	11.7	17	14.2	5	4.2
Retention about plant productivity	70	58.3	50	41.7	5	4.2	8	6.7	11	9.2	24	20.0	22	18.3
Awareness about planted area	70	58.3	50	41.7	6	5.0	9	7.5	13	10.8	23	19.2	19	15.8

The respondents were asked about farmers' perception of plant health workforce productivity and their responses in this regard are presented in Table 1. Majority (56.7%) of the respondents have awareness of potato clinic and 58.3% are aware of skills about productivity. However, 45.0% of respondents had knowledge about work load control and 58.3% are aware of retention about plant productivity and 58.3% people are awareness about planted area. However, weighted score, mean value, standard deviation and ranked order are presented in Table 1.

Table 2: Ranking order of farmers perception about plant health work force productivity

Perception about Plant health work force productivity	W.S.	Mean	S.D.	Rank
Skills about productivity	270	3.86	.97	1
Retention about plant productivity	260	3.71	.95	2
Awareness about planted area	250	3.57	.88	3
Awareness of potato Clinic meaning	227	3.34	1.12	4
Knowledge about work load control	163	3.02	1.04	5

The above table represents the ranking order of level of farmers perception about plant health work force productivity. It was found that farmers had perception that the plant clinics provided skills about productivity for potato is ranked first with mean value 3.86 and standard deviation 0.97. However, retention about plant productivity (3.71±.95) and awareness about planted area (3.57±.95) were ranked as 2nd to 3rd, respectively and mean values are fell in between the medium and high categories but were closer toward high category. Furthermore, awareness of potato Clinic meaning (3.34±1.12) and knowledge about workload control (3.02±1.04) were ranked as 4th to 5th, respectively. Mean values are fell in between the medium and high categories but were closer toward medium category.

Table 3: Farmers' perception about plant health information and Input supply and technology *n* = 120

Farmer perception	Yes		No		Very low		Low		Medium		High		Very high	
	f	%	*f*	%	*f*	%	*f*	%	*f*	%	*f*	%	*F*	%
Plant health information														
Information and surveillance system	68	56.7	52	43.3	7	5.8	8	6.7	19	15.8	24	20.0	10	8.3
Input supply and technology														
Availability of resources	59	49.2	61	50.8	4	3.3	13	10.8	15	12.5	17	14.2	10	8.3
Quality	63	52.5	57	47.5	8	6.7	9	7.5	10	8.3	18	15.0	18	15.0
Soil testing	44	36.7	76	63.3	10	8.3	7	5.8	14	11.7	8	6.7	5	4.2
Use of manure	70	58.3	50	41.7	5	4.2	7	5.8	11	9.2	28	23.3	19	15.8
Changing in productivity uses	70	58.3	50	41.7	3	2.5	5	4.2	12	10.0	26	21.7	24	20.0

The respondents were asked about farmers' perception about plant health information and Input supply and technology and their responses in this regard are presented in Table 4. However, weighted score, mean value, standard deviation and ranked order are presented in Table 4.

In the light of study outcome, majority (56.7%) farmers reported that plant clinics provided information and surveillance system. About 15.8%, 20.0% and 8.3% farmers had perception that plant clinics provided information and surveillance system medium, high and very high level,

respectively. In the light of input supply and technology, mostly farmers reported that they had Availability of resources (49.2%), Quality (52.5%), Soil testing (36.7%),

Use of manure (58.3%) and Changing in productivity uses (58.3%).

Table 4: Ranking order of farmers perception about plant health information and input supply and technology

Perception about Plant health work force productivity	W.S.	Mean	S.D.	Rank
Input supply and technology				
Plant health information				
Information and surveillance system	226	3.32	1.06	4
Availability of resources	193	3.27	1.14	5
Quality	218	3.46	1.03	3
Soil testing	123	2.80	1.18	6
Use of manure	259	3.70	.98	2
Changing in productivity uses	273	3.90	.84	1

The above table represents the farmers' perception about plant health information. It was found that farmers had the perception that the plant clinics provided information and surveillance system (3.32±1.06) and mean value tending towards medium category. It was found that changes in productivity uses were ranked first with mean value 3.90

and standard deviation .84 and use of manure (3.70±.98) was ranked as second and these mean values are fell in between the medium and high categories but were closer toward high category. However, Quality (3.46±1.03), availability of resources (3.27±1.14) and soil testing (2.80±1.18) were ranked as 3rd to fifth, respectively.

Table 5: Farmers' perception about role of plant clinics in providing information related financing $n = 120$

Role of plant clinics in providing information related to financing	Yes		No		Very low		Low		Medium		High		Very high	
	f	%	f	%	f	%	f	%	f	%	f	%	f	%
Availability of funds	61	50.8	59	49.2	9	7.5	10	8.3	16	13.3	19	15.8	7	5.8
Sources of funding provide government	70	58.3	50	41.7	4	3.3	8	6.7	17	14.2	29	24.2	12	10.0
Funding policies/ level of self-funding	66	55.0	54	45.0	8	6.7	7	5.8	20	16.7	22	18.3	9	7.5

The respondents were asked about farmers' perception about role of plant clinics in providing information related to financing and their responses in this regard are presented

in Table 6. However, weighted score, mean value, standard deviation and ranked order are presented in Table 6.

Table 7: Ranking order of farmers perception about role of plant clinics in providing information related to financing

Financing information	W.S.	Mean	S.D.	Rank
Provided by government	247	3.53	1.08	1
Funding policies/ level of self-funding	215	3.26	1.02	2
Available of funds	188	3.08	1.12	3

Table 7 represents the farmers' perception about role of plant clinics in providing information related to financing. It was found that farmers had perception that the plant clinics provided information sources of funding provide government and this information is ranked first with mean

value 3.53 with standard deviation 1.08. However, information about funding policies/ level of self-funding (3.26±1.02) and availability of funds (3.08±1.12) were ranked as 2nd to 3rd, respectively.

Table 8: Farmers' perception about role of plant clinics in providing information related policy and leadership $n = 120$

Policy and leadership	Yes		No		Very low		Low		Medium		High		Very high	
	f	%	f	%	f	%	f	%	f	%	f	%	f	%
Follow policy and governance framework	48	40.0	72	60.0	10	8.3	7	5.8	21	17.5	8	6.7	2	1.7
Local level support leadership	55	45.8	65	54.2	5	4.2	8	6.7	18	15.0	16	13.3	8	6.7
Central level support leadership	51	42.5	69	57.5	7	5.8	9	7.5	22	18.3	8	6.7	5	4.2

The respondents were asked about farmers' perception of the role of plant clinics in providing information related to policy and leadership and their responses in this regard are presented in Table 8. The 40.0% people have followed policy and governance framework and 45.8% have local

level and support leadership and 42.5% have central level support leadership. However, weighted score, mean value, standard deviation and ranked order are presented in Table 8.

Table 9: Ranking order of farmers perception about role of plant clinics in providing information related policy and leadership

Policy and leadership	W.S.	Mean	S.D.	Rank
Local level support leadership	179	3.25	.95	1
Central level support leadership	148	2.90	1.07	2
Follow policy and governance framework	129	2.69	1.11	3

Above table represents the farmers' perception of role of plant clinics in providing information-related policy and leadership. It was found that farmers had the perception that the plant clinics provided information related to local level support leadership and this information is ranked first with mean value 3.25 with standard deviation .95. However, plant clinics provided information about central level support leadership (2.90±1.07) and follow policy and governance framework (2.69±1.11) were ranked as 2nd to 3rd, respectively. The mean values are in between the medium and high categories but were closer toward medium category.

Conclusion

It was found that farmers had the perception that the plant clinics provided skills, retention and awareness about productivity for potato. It may also be concluded that majority of the farmers were aware with the impact of plant clinic on potato productivity as they were getting awareness about seed, varieties, use of internet and productivity-related other aspects. Service delivery perception was also in high awareness and they were aware about material and equipment, quality control and technical knowledge regarding potato clinics. Farmers in majority were also agreed that they were getting information regarding plant health service and input supply due to the plant clinics. They were also aware about the availability of funding because of these plant clinics. The most prominently, efficient extension system and services should be launched for enriching farmers' technical knowledge, a skill necessary for managing farms, better production, increase in economic output and raise the national as well as global economy. In adding agricultural extension service is used to boost the production of agriculture with the interaction of institution and helping the farmers by educating the farmers regarding plant clinic.

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