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AN ANALYSIS OF THE EFFECTIVENESS OF EXTENSION WORK CONDUCTED BY PUBLIC SECTOR WITH SPECIAL REFERENCE TO MANGO IN THE SOUTHERN PUNJAB, PAKISTAN

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Fruits can play a significant role in human nutrition, especially as a source of vitamins, minerals, and dietary fiber. The total area under mango in Punjab is 104.9 thousand hectares with the average production of 937 thousand tones with average yield of 7.51 tones/ha, which is quite low than that of other mango producing countries in the world. The present study was designed to analyze the increase in knowledge level of the mango growers regarding latest mango production technology. The study was conducted in tehsil & district Rahim Yar Khan, which consists of 40 Union Councils, out of which 31 are rural and 9 are urban. Out of 31 rural Union Councils, 5 were selected at random. Three villages were selected randomly from each selected Union Councils. A sample of 150 respondents was selected by using simple random sampling technique. The data, thus, collected were statistically analyzed by using computer software Statistical Package for Social Sciences (SPSS). The results indicate that majority of the respondents perceived that public sector extension personnel provide the information regarding mango production technology. The information regarding fertilizer application, irrigation and insect-pest control was ranked 1st, 2nd and 3rd position with mean value 2.84, 2.76 & 2.74 respectively. The information regarding processing and value addition was perceived at the bottom with mean value 1.46. It was recommended that public sector extension should also devise the strategy to strengthen the technical competencies of their field staff to provide latest technology to mango growers concerning processing and value addition.
Keywords: Extension, Mango growers, public sector, Southern Punjab, Pakistan

INTRODUCTION

Globally, fruits are considered as an essential part of human diet. Fruits in the daily diet have been strongly associated with reduced risk for some forms of serious diseases like cancer, heart attack, stroke, and other chronic diseases (Kalt, 2002). Fruits can play a significant role in human nutrition, especially as a source of vitamins, minerals, and dietary fiber. The major contribution among vitamins is of vitamin C, which is 91% (Craig and Beck, 1999; Wargovich, 2000). Besides the importance of fruits in the diet of human being, it is the main sub-sector of agriculture contributing a large amount of foreign earning in developing and low income countries including Pakistan (Johnson, 2000; Lanjouw and Lanjouw, 2001). High value fruit such as apples, mangoes, guavas, dates, citrus, peaches and grapes are grown on thousands of hectares of land. (Govt. of Pakistan, 2006a). Fruits represent a dynamic segment of Pakistan's agriculture sector. During the last five years , the area under fruit increased and fruit production has also increased due to good economic returns received by the fruit growers but the production is still low than that of other countries (Govt. of Pakistan, 2006b).

Mango (*Mangifera indica* L.) is an important fruit tree of the tropical and subtropical regions of the world. Generally, mango is one of fruits liked by people in many parts of the world. It has typical fragrance and delighted taste. Because of these typical qualities, it bears the title of "King of fruits" and "Nectar of God" (Tasneem, 1989). Mango has excellent nutritional properties. High vitamin A and C contents, both being anti-oxidants help reduce risk of cancer as well as reduce the fast process of aging (Balal *et al.*, 2011).

World over production of mango is 25 million tones. In Pakistan area under mango cultivation is 167.5 thousand hectares with the average production of 1,732 thousand tones with average yield of 11.20 tones/ha. The total area under mango in Punjab is 104.9 thousand hectares with the average production of 937 thousand tones with average yield 7.51 tones/ha. This production of mango is quite low as compared to the other major mango producing countries of the world (Balal *et al.*, 2011). This situation can be rectified through the application of latest mango production technologies by the mango growers.

The latest mango production technologies need not only to be made available at the doorsteps of the growers but they should also be educated how to use effective. This is an essential job of extension worker. It is important to note here

that unless the research achievements are conveyed to the farmers in the most suitable and understandable manners, the desired goals of enhancing quality production of mango in the country cannot be achieved to meet the growing demands of global market (FAO, 2005). It is very strange that a nominal portion (3.28%) of Pakistani fruit has potential for export because major part of the production do not meet the export standards like cosmetic look, physical appearance, quality storage life etc. due to lack of knowledge, training and skills of improved cultural practices and new technologies (Miano and Jokhio, 2007).

This meager share of mango in export earning can be enhanced through the application of latest mango production technologies. Considering the importance of mango, the Govt. of Punjab initiated a project worth 643.710 million rupees for a period of five years with special emphasis to increase fruit yield/acre especially the mango. It is claimed by the public sector that it had initiated campaign for educating farmers regarding the mango production technologies in southern part of Punjab. But, how do the target beneficiaries, mango growers, view the performance is the forehand question which needs to be assessed. For this purpose the research study was conducted to find out the answer in this study.

MATERIALS AND METHODS

The present study was designed to analyze the increase in knowledge level of the mango growers regarding latest mango production technology. The study was conducted in tehsil & district Rahim Yar Khan, which consists of 40 Union Councils, out of which 31 are rural and 9 are urban. Out of 31 rural Union Councils, 5 were selected at random and from each selected Union Councils, 3 villages were selected randomly. A well designed interview schedule was developed for the purpose of collection of data from the mango growers. A sample of 150 respondents was selected by using simple random sampling technique. The data, thus, collected were statistically analyzed by computing descriptive statistics such as percentage, mean, std. deviation etc. using computer software Statistical Package for Social Sciences (SPSS).

RESULTS AND DISCUSSION

Respondents were asked about the technologies which were being transferred to them by the extension personnels and the data collected are given in the Table 1.

The information regarding nursery transplanting, weed control, marketing of produce, package storage and processing and value addition was rated as least effective by 18.7%, 15.3%, 19.3%, 17.3% and 20% of the respondents, respectively. Similarly Hassan *et al.* (2007) narrated that to enhance performance in agricultural operations, the professional education and improvement in skills is need of the hours and Extension Agencies/Organizations are responsible to provide such technical guidance to them so that they can develop their abilities to perform different agricultural activities effectively and efficiently for the achievement of Green Revolution objectives. The respondents rated the effectiveness of information regarding fertilizers application technologies as highly effective by 61.3% followed by high yielding varieties (58.7%), insect pest control (46.7%) and irrigation (45.3%).

Table 1. Distribution of the respondents according to the perceived effectiveness of the mango production technologies transferred to mango growers by the extension personnel

Mango production technology	Response									
	Yes		No		Least effective		Effective		Highly effective	
	Freq.	%age	Freq.	%age	Freq.	%age	Freq.	%age	Freq.	%age
High yielding varieties	113	75.3	37	24.7	8	5.3	17	11.3	88	58.7
Nursery raising	100	66.7	50	33.3	14	9.3	41	27.3	45	30.0
Nursery transplanting	77	51.3	73	48.7	28	18.7	21	14.0	28	18.7
Fertilizer application	107	71.3	43	28.7	2	1.3	13	8.7	92	61.3
Irrigation	89	59.3	61	40.7	-	-	21	14.0	68	45.3
Weed control	68	45.3	82	54.7	23	15.3	25	16.7	20	13.3
Insect-pest control	91	60.7	59	39.3	3	2.0	18	12.0	70	46.7
Disease control	82	54.7	68	45.3	11	7.3	35	23.3	36	24.0
Harvest and post harvest technology	62	41.3	88	58.7	18	12.0	36	24.0	8	5.3
Marketing of produce	51	34.0	99	66.0	29	19.3	22	14.7	-	-
Package & Storage	45	30.0	105	70.0	26	17.3	16	10.7	3	2.0
Processing & value addition	41	27.3	109	72.7	30	20.0	3	2.0	8	5.3

Scale: 1= Least effective; 2= Effective; 3= Highly effective

Table 2. Mean, standard deviation and rank order of perceived effectiveness of the mango production technologies transferred to mango growers by the extension personal

Name of technology	Weight score	Mean	Std. Deviation	Rank
Fertilizer application	304	2.84	0.42	1
Irrigation	246	2.76	0.43	2
Insect-pest control	249	2.74	0.51	3
High yielding varieties	306	2.71	0.59	4
Nursery raising	231	2.31	0.71	5
Disease control	189	2.30	0.70	6
Nursery transplanting	154	2.00	0.86	7
Weed control	133	1.96	0.80	8
Harvest and post harvest technology	114	1.84	0.63	9
Package & Storage	67	1.49	0.63	10
Marketing of products	73	1.43	0.50	11
Processing & value addition	60	1.46	0.81	12

Scale: 1 = Least effective; 2 = Effective; 3 = Highly effective

The results of the Table 2 support the data of Table 1, which indicate that the fertilizers application, irrigation and insect-pest control were ranked as 1st , 2nd and 3rd, respectively. This may be due to the factor that no technical/formal education/degree/diploma is required to do farming in Pakistan. Mostly, farmers engaged in Agri. Business/farming are illiterate or they are poorly educated. The mango production technology especially use of fertilizers and insect-pests control are highly technical areas and mango growers mostly have lack of information in those areas and contact the extension personnel for same and might be due to this factor they reported that not only the extension personnel provide information to them about the same but also they rated it as highly effective and perceived as useful. The results are in line with the findings of Iftikhar *et al.* (2007) that farmers needed training in proper selection of variety, gap filling, plant protection measures, irrigation techniques etc.

CONCLUSIONS

It can be inferred from the results of the study that public sector extension personnel were providing latest mango production technologies to the respondents in their area. However, their information related to fertilizer application, high yielding varieties, insect pest control and irrigation was rated highly effective and useful for them.

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