

Role of Agricultural Extension Services in Expansion of Date Palm Orchards in District Dera Ismail Khan

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Abstract

The present study was carried to assess the role of agricultural extension in expansion of date palm orchards in district Dera Ismail Khan of Khyber Pakhtunkhwa, Pakistan. The total number of sampled respondents was 104 which were selected randomly on the basis of proportional sampling allocation technique from four different villages of the study area. The respondents were categorized in different groups on the basis of their age, education land holding size and tenancy status etc. It was found that majority (44.2%) of the farmers were of age above 45 years. The educational level of majority (32.7%) of the farmers was upto primary. It was found from the study that the agriculture extension was not playing its role vitally in the study area and the farmers were getting most of the information from other sources such as media and fellow farmers etc. Though the role of agriculture extension was limited, the farmers were anticipative about the actinoid future of date in the study area.

Keywords: Agricultural Extension, Expansion, Date Palm, Orchards

INTRODUCTION

Date palm local name “Khajjur” and scientific name *Phoenix dactylifera* Linn. Belongs to the family Palmaceae or Palmae. It is dieceous plant; the female plant normally begin to bear fruit (Dates) at an age varying from three to seven years with an average of five years from the time of planting of the sucker and continue bearing until their death. The date palm is a feather palm and has pinnate leaves called fronds up to five meter long. The trunk is vertical having almost the same girth 100-150 cm all the up. Being a monocot, the tree has adventitious roots of roughly uniform thickness along their length (Al-Bakar 1972).

According to the Pakistan Agricultural and research Council, 4.9 million tones of dates are grown per year in more than 40 countries around the world. Iran is the biggest in terms of production at 60 per cent, followed by Egypt at 12 per cent, Iraq at 11 per cent, Saudi Arabia at nine per cent with Pakistan at seven percent taking the fifth position in the world date production (Daily, Dawn. 21st May, 2011).

Dates produced in D.I.Khan are known for its quality all over Pakistan and in national and international market. District D I Khan is one of the largest producers of fresh and dried Dates in Pakistan and on top in Khyber Pakhtunkhwa. There are many varieties of Dates produced in D I Khan but Dhakki Dates are well known beside all other varieties. Approximate yield of Dhakki-Dates per annum ranges from 6.5 thousand to 7.0 thousand tons that is 75 % of the total production of Dates in district D. I. Khan and dried Dates production ranges from 0.8 tons to 1.0 thousand tons per annum approximately. Approximate production of regional varieties in Dera Ismail Khan is 3.0 thousand tons that is 25% of total production in Dera Ismail Khan and its surrounding areas (SMEDA, 2009).

The major role of agricultural extension are “transferring information from the local researchers to farmers, enabling them to clarify their own goals and possibilities, educating them on how to make better decisions, and stimulating desirable agricultural development” (Van den Ban, 1996). Extension is a series of embedded communicative interventions that are meant, among others, to develop and/or induce innovations which supposedly help to solve (usually multy-actor) problematic situations (Leeuwse and Ban, 2004).

Agricultural productivity can rapidly be increased through the appropriate application of modern techniques in agriculture. It is therefore, essential that the farming community must be made familiar with the scientific knowledge and improved practices and techniques relating to agriculture.

MATERIALS AND METHODS

Universe of the study

In Dera Ismail Khan District majority of the people depends on agriculture directly and indirectly. This area is very suitable for cultivation of date, mango, wheat, and sugarcane due to its suitable climatic conditions. However, D. I. Khan district is very well known for the production of dates.

Selection of respondents

A list of farmers was prepared from four selected villages. This list was important in order to exclude other professionals, such as carpenter, shopkeeper, and gold smith etc. From each village different number of farmers

was selected through proportional allocation method. Thus, the total sample of the study consisted of one hundred and four farmers.

The formula for proportional sampling technique is as follows;

$$n_i = \frac{N_i}{N} \times n$$

where:

n_i	=	Number of Sampled Farmers in i th Village
i	=	Number of Villages in the Study Area
n	=	Total Sample Size
N	=	Total Number of farmers in the Research Area
N_i	=	Total Number of farmers in i th Village

Analysis of data

The collected data were put into the computer and analyzed using statistical package for social sciences (SPSS) depending on the nature of the study and data.

Chi square test

The Chi-square test was applied to find out relationship of the variables like age, education and size of land holding of farmers with variables like extension activities.

RESULTS AND DISCUSSIONS

This section deals with the findings of the research study obtained from the analysis of the collected data from the study area.

Age of the respondents

It is generally observed that age factor mostly counts in maturity, but we cannot mention with surety that its effects will always be significant. In some occasions, the lower age may be more effective but ineffective other occasions. It was therefore, important to collect the information about the age of the respondents. Age plays an important role in the achievements of various targets. Age also affects individual's behavior in identification of different agriculture information sources and their approach in getting valuable information from these sources and their applications.

Table I show that 5.8% of respondents were below 25 years of age, while 13.5% of them were between 25-35 years. The respondents of 36-45 years of age were 36.5% and above 45 years of age respondents were 44.2%. The data in the above table indicate that the majority of the respondents are above 45 years of age were involved in date farming that is 44.2%.

The present research results are confirmed by Chaudhry (2004) who found that 44.2% of the respondents were with age group of above 40 years.

Literacy status of the respondents

Education is positively correlated with economic development. All the developed nations history shows that their development was the net result of education. For faster diffusion and quick adoption of the new agricultural technology education can play vital role. Moreover education is the most important factor in acquisition of latest agricultural information and innovations.

The data set out in table II shows that only 25% of the total respondents were illiterate. Whereas the remaining 75% were educated. Illiteracy and low education is a big obstacle in scientific Date palm farming.

The present research results are bit higher than those of Amjad (2002) who stated that majority 74.2% of the respondents were literate or educated while the remaining 25.8% were illiterate. Most of the literate respondents 32.7% belonged to primary category. Only 8.7% respondents were graduate.

Chi Square Tests

Chi square test was applied to test the hypothesis of significance between two variables. Literacy status, age and experiences of the respondents were tested with respondent's opinion about agriculture extension services and extension methods used by Agriculture extension department.

Ho: There is no significant association between experience of the respondents and respondents' opinions about field days arranged field assistants.

H1: There is significant association between educational status of the respondents and respondents' opinions about field days arranged field assistants.

Degree of freedom	=	4
Chi square	=	3.7
Alpha	=	0.05
P value	=	0.4

Result: we accept the null hypothesis and reject alternate hypothesis and concluded that there is no association between these two variables.

Ho: There is no significant association between educational status of the respondents and respondents' opinions about extension services provided by agriculture department.

H1: There is significant association between educational status of the respondents and respondents' opinions about extension services provided by agriculture department.

Degree of freedom = 2
Chi square = 0.34
Alpha = 0.05
P value = 0.8

Result: we accept the null hypothesis and reject alternate hypothesis and concluded that there is no significant association between these two variables.

Ho: There is no significant association between educational status of the respondents and respondents' opinions about meetings.

H1: There is significant association between educational status of the respondents and respondents' opinions about meetings.

Degree of freedom = 5
Chi square = 9.6
Alpha = 0.05
P value = 0.85

Result: we accept the null hypothesis and reject alternate hypothesis and concluded that there is no association between these two variables.

Ho: There is no significant association between age of the respondents and respondents' opinions about meetings.

H1: There is significant association between age of the respondents and respondents' opinions about meetings.

Degree of freedom = 3
Chi square = 5.8
Alpha = 0.05
P value = 0.11

Result: we accept the null hypothesis and reject alternate hypothesis and concluded that there is no association between these two variables.

Ho: There is no significant association between educational status of the respondents and respondents' opinions about field days arranged by the field assistants.

H1: There is significant association between educational status of the respondents and respondents' opinions about field days arranged by the field assistants.

Degree of freedom = 5
Chi square = 17.05
Alpha = 0.05
P value = 0.004

Result: we accept the alternate hypothesis and reject the null hypothesis and concluded that there is significant association between these two variables.

Ho: There is no significant association between educational status of the respondents and respondents' opinions about services provided by the agriculture department

H1: There is significant association between educational status of the respondents and respondents' opinions about services provided by the agriculture department.

Degree of freedom = 5
Chi square = 11.35
Alpha = 0.05
P value = 0.04

Result: we accept the alternate hypothesis and reject the null hypothesis and concluded that there is significant association between these two variables

Ho: There is no significant association between age of the respondents and respondents' opinions about field days arranged by the field assistants.

H1: There is significant association between age of the respondents and respondents' opinions about field days arranged by the field assistants.

Degree of freedom = 3
Chi square = 15.71
Alpha = 0.05
P value = 0.001

Result: we accept the alternate hypothesis and reject the null hypothesis and concluded that there is significant association between these two variables.

CONCLUSION AND RECOMMENDATIONS

Age affects individual's behavior in identification of different information sources and their approach in getting valuable information. The result shows that highest percentage was above 45 years of age. Education is the fabric on which the building of development can be built. Twenty five percent of the respondents were illiterate. This is one of the obstacles in transferring of scientific and new information to the farmers. Majority of the farmers argued that agriculture extension department did not arrange any lecture/field day for them. More over farmers were not satisfied with the work of extension agents. They complained about their nonfunctional role in the area. They said that extension agents are not honest in rendering their duties and responsibilities regularly. Most of the farmers reported that they were facing marketing problems in date palm. According to research findings the major problem in research area is un-availability of marketing facilities i.e. cold storage, roads, packing and grading facilities.

On the basis of conclusion and observation during the study, following recommendations are made: (i) Regular and frequent visit of agriculture extension personnel is much needed and must be well organized and well equipped to provide sound solutions to the problems faced by date growers. In this connection literature should be provided to farmers (ii) Provision of agriculture inputs like high yielding date varieties, pesticides and marketing information must be ensured for organized and formal production and marketing that will not only enhance productivity but will also raise farmers gains (iii) Date plants should be provided by research from the progeny and germplasm unit D. I. Khan (iv) It is also suggested to provide short term loans through different financial institutions and commercial banks on reasonable interest rate to farmers for investment in this particular task and (v) Publicity and promotion of dates on nutritional values on television and other media to increase consumption behavior of dates should be promoted.

Table 1 Age-wise distributions of respondents

Village Name	Age of the respondents in years				Total
	Below 25	25-35	36-45	Above 45	
Dakki	2(1.9)	5(4.8)	12(11.5)	22(21.2)	41(39.4)
Mithra Abad	2(1.9)	7(6.7)	10(9.6)	7(6.7)	26(25.0)
New Choorā	1(1.0)	-	6(5.8)	10 (9.6)	17(16.4)
Chahmal Vana	1(1.0)	2(1.9)	10(9.6)	7(6.7)	20(19.2)
Total	6(5.8)	14(13.5)	38(36.5)	46(44.2)	104(100)

Source: Survey Data 2011-2012; the values in parenthesis are percentages

Table 2 Distribution of the respondents regarding to their level of education

Village Name	Level of Education						Total
	Illiterate	Primary	Middle	Matric	Intermediate	Graduate	
Dhakki	12 (11.5)	9 (8.7)	9 (8.7)	3 (2.9)	4 (3.8)	4 (3.8)	41 (39.4)
Mithra Abad	3 (2.9)	14 (13.5)	4 (3.8)	3 (2.9)	1 (1.0)	1 (1.0)	26 (25.0)
New Choorā	5 (4.8)	4 (3.8)	2 (1.9)	1 (1.0)	2 (1.9)	3 (2.9)	17 (16.4)
Chahmal Vana	6 (5.8)	7 (6.7)	3 (2.9)	3 (2.9)	-	1 (1.0)	20 (19.2)
Total	26 (25.0)	34 (32.7)	18 (17.3)	10 (9.6)	7 (6.7)	9 (8.7)	104 (100)

Source: Survey Data 2011-2012; the values in parenthesis are percentages

Table 3 Chi square test was applied to test the hypothesis between farmer's experiences with field days arranged by field assistants.

Experience	Field Days		Total
	Yes	No	
up to 10	8(7.7)	11(10.6)	19(18.3)
11-20	19(18.3)	36(34.6)	55(52.9)
21-30	7(6.7)	12(11.5)	19(18.3)
31-40	1(1.0)	8(7.7)	9(8.7)
above 40	-	2(1.9)	2(1.9)
Total	35(33.7)	69(66.3)	104(100)

Source: Survey Data 2011-2012 values in parenthesis are percentages.

Table 4 Chi square test was applied to test the hypothesis between respondents opinions about Date Future and Extension Services satisfaction.

Date Future	Extension Services satisfaction		Total
	Yes	No	
Good	25(24.0)	36(34.6)	61(58.7)
Average	14(13.5)	23(22.1)	37(35.6)
Less	3(2.9)	3(2.9)	6(5.7)
Total	42(40.4)	62(59.6)	104(100)

Source: Survey Data 2011-2012; values in parenthesis are percentages

Table 5 Chi square test was applied to test the hypothesis of significance between farmers' educational level and meeting with field assistants.

Education	Meeting FA		Total
	Yes	No	
Illiterate	6(5.8)	20(19.2)	26(25.0)
Primary	8(7.7)	26(25.0)	34(32.7)
Middle	9(8.7)	9(8.7)	18(17.3)
Matric	4(3.8)	6(5.8)	10(9.6)
Intermediat	5(4.8)	2(1.9)	7(6.7)
Graduate	3(2.9)	6(5.8)	9(8.7)
Total	35(33.7)	69(66.3)	104(100)

Source: Survey Data 2011-2012; values in parenthesis are percentages

Table 6 Chi square test was applied to test the hypothesis of significance between farmers' age and meeting with field assistants

Age	Meeting FA		Total
	Yes	No	
Below 25	3(2.9)	3(2.9)	6(5.8)
25-35	7(6.7)	7(6.7)	14(13.5)
36-45	15(14.4)	23(22.1)	38(36.5)
Above 45	10(9.6)	36(34.6)	46(44.2)
Total	35(33.7)	69(66.3)	104(100)

Source: Survey Data 2011-2012 values in the parenthesis are percentages.

Table 7 Chi square test was applied to test the hypothesis of significance between literacy status of the respondents and field days arranged by the field assistants.

Education	Field days		Total
	Yes	No	
Illiterate	6(5.7)	20(19.2)	26(25)
Primary	6(5.7)	28(26.9)	34(32.7)
Middle	9(8.6)	9(8.6)	18(17.3)
Matric	5(4.8)	5(4.8)	10(9.6)
Intermediat	6(5.7)	1(0.9)	7(6.7)
Graduate	3(2.8)	6(5.7)	9(8.6)
Total	35(33.6)	69(66.3)	104(100)

Source: Survey Data 2011-2012; values in parenthesis are percentages

Table 8 Chi square test was applied to test the hypothesis of significance between literacy status of the respondents and services provided by the agriculture department

.Education	Extension services		Total
	Yes	No	
Illiterate	9(8.6)	17(16.3)	26(25)
Primary	9(8.6)	25(24)	34(32.7)
Middle	10(9.6)	8(7.7)	18(17.3)
Matric	5(4.8)	5(4.8)	10(9.6)
Intermidiat	6(5.7)	1(0.9)	7(6.7)
Graduate	3(2.8)	6(5.7)	9(8.6)
Total	42(40.3)	62(59.7)	104(100)

Source: Survey Data 2011-2012; values in parenthesis are percentages

Table 9 Chi square test was applied to test the hypothesis of significance between age of the respondents and field days arranged by the field assistants

Age	Yes	No	Total
Below 25	5(4.8)	1(0.9)	6(5.7)
25-35	8(7.7)	6(5.7)	14(13.4)
36-45	14(13.4)	24(23.1)	38(36.6)
Above 45	8(7.7)	38(36.5)	46(44.3)
Total	35(33.6)	69(66.4)	104(100)

Source: Survey Data 2011-2012; values in parenthesis are percentages

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