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FACTORS HAMPERING DATE PALM PRODUCTION IN THE PUNJAB: A CASE STUDY OF D.G. KHAN DISTRICT

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This study was conducted to assess some of the factors hindering the production of dates in one of the major date-palm growing regions of the Punjab, Pakistan. Dera Ghazi Khan district was selected as case study area and a structured interview schedule was used to collect quantitative data from 120 date growers. The qualitative data were collected through in-depth interviews with the key informants. This paper also assesses the awareness of farmers about date palm production technology and, consequently, identifies training needs of date palm growers of Dera Ghazi Khan district regarding production technology of date palm. Awareness about variety, irrigation practices, fertilizer application, sucker transplantation and insect/pest of date-palm were selected as variables of production technology. The results revealed that farmers had very low level of knowledge about the production technology of date palm. The unawareness about production technology of the date palm was found as one of the major factors hindering the yield and ultimately profit for the date growers. The agricultural extension staff was found to be ineffective in dissemination of date palm technology and most of the respondents reported that they had received no information from agricultural extension staff regarding date palm production technology. There is an urgent need to train farmers about irrigation and fertilizer application, disease and pest management, sucker transplanting and processing of dates.

Keywords: Date palm, Agri. extension, South Punjab, production technology

INTRODUCTION

The date palm (*Phoenix dactylifera* L.), being the tree of hot climate, grows well in harsh climatic conditions of the South Punjab region of Pakistan. Multiple usage patterns of date-palm tree, high nutritional composition, profitability as well as environmental advantages makes date palm a good choice for small and medium farmers (Hassan *et al*., 2006). Date palm is considered as an important constituent of farming systems in dry and semi-arid regions and is suitable for both small and large scale farming (Khushk *et al*., 2009). It is one of the fruit trees with highest production per hectare (Zaid and Wet, 2002). Being the tree of hot climate, it grows well in harsh climatic conditions of the South Punjab, Pakistan. The high nutritional composition, profitability as well as environmental advantages makes date palm an excellent choice for the farmers (Al-Shahib and Marshall, 2003). Its cultivation is a good alternative to improve the food and economic status of people (Hassan *et al.,* 2006). Similarly Chao and Krueger (2007) reported that date palm tree has numerous usages and has an important role in ecological improvement of the deserts. The tree has a great traditional importance in the Islamic world and with the increase of population in these countries; the demand is expected to increase in the future. This tree not only provides the food but also a large number of other products which have been extensively used in the rural as well as urban areas of Pakistan in general and South Punjab in particular. The main date palm growing areas in the South Punjab are D.G. Khan, Muzaffargarh and Multan (PARC, 2009). Unfortunately its actual yield at the farm level is low as compared to its potential yield (Govt. of Pakistan, 2009).

Training in the context of agriculture is a process of gaining new skills, attitude and knowledge to improve farmers' efficiency. Moreover, the human resources in the field of agriculture are strongly influenced by the help of training of farming community. In order to enhance the human performance in a specific situation, the role of training is vital. A logical progress in the knowledge and skills of trainees is possible through proper training (Sajeev and Singha, 2010) after training need assessment (Okorley *et al*., 2005). The present paper identifies some of the factors hindering the production of dates in D.G. khan district and, therefore, identifies training needs of date palm growers regarding date palm production technology. The results of the study provide a guideline for the future extension strategies in the study area.

MATERIALS AND METHODS

Dera Ghazi Khan District of the South Punjab was selected purposively because it is one of the leading districts within Punjab in terms of date production. D.G. Khan tehsil from the district was selected purposively because it is the largest

tehsil and has maximum concentration of date palm trees as compare to other tehsils of district (PHDEB, 2008). Out of 34 rural union councils of this tehsil, 4 union councils were selected randomly and from each selected union council, 3 villages were selected at random. A list of growers was prepared in each selected village with the participation of local residents. Ten (10) respondents from each village were selected through simple random sampling technique thereby making a sample size of 120 respondents. The growers having at least 20 date trees in their fields were considered as respondents. Structured interview schedule was prepared to collect quantitative data. Key informant interviews and focus group discussion were used to acquire qualitative data. Frequencies and percentages were calculated from quantitative data while direct quotes are given in the results from qualitative data.

RESULTS AND DISCUSSION

***Awareness about production technology*:** The data were collected from the farmers having at least 20 date palm trees in the study area. The respondents were asked to indicate their awareness level about date palm production technology (variety, irrigation practices, fertilizer application, insect/pests and diseases). Their responses in this regard are given in Table 1.

Moreover, the human resource in the field of agriculture is strongly influenced by the help of training of farming community (Table 1). 58.3% of the respondents were aware of Aseel variety while only 36.7% and 31.6% of the respondents were aware of Dhakki and Hillawi varieties, respectively. Begum Jhangi, Shamran, Khudrawi, Karbalain and Jaman are promising varieties of date, but our results indicate that most of the respondents had no idea about these date verities. A great majority (73.3%) of the respondents were aware of irrigation requirement just after transplanting while 56.7% and 50% of the respondents had knowledge about the irrigation interval during summer and winter. The time of fertilizer (DAP) application was known by only 20% of the respondents and similarly only 16.7% of the respondents were aware of time of farm yard manure (FYM) application. Only 10.8% and 5.0% were aware about exact time of Urea and SOP application. About 21% of the respondents were aware about recommended time (August-October) of sucker transplanting while 14.2% of the respondents were aware about recommended time (Feb-

Table 1. Distribution of the respondents according to their awareness regarding date palm production technology

Awareness about	Yes		No	
	Frequency	Percentage	Frequency	Percentage
a) Varieties				
Hillawi	38	31.6	82	68.3
Karbalain	4	3.3	116	96.7
Begum Jhangi	10	8.3	110	91.7
Dhakki	44	36.7	76	63.3
Khudrawi	5	4.2	115	95.8
Shamran	6	5.0	114	95.0
Aseel	70	58.3	50	41.7
Jaman	2	1.7	118	98.3
b) Irrigation				
Just after transplanting	88	73.3	32	26.7
Summer	68	56.7	52	43.3
Winter	66	55.0	54	45.0
c) Fertilizer				
Farm Yard Manure (FYM)	20	16.7	100	83.3
Diammonium Phosphate (DAP)	24	20.0	96	80.0
Sulphate of Potash (SOP)	6	5.0	114	95.0
Urea	13	10.8	107	89.2
d) Sucker transplanting				
August-Oct	25	20.8	95	79.2
Feb-March	17	14.2	103	85.8
e) Insect pests and diseases				
Aphids	3	2.5	117	97.5
Borer	11	9.2	109	90.8
Scales	6	5.0	114	95.0
Red palm weevil	3	2.5	117	97.5

March) of sucker transplanting. As far as diseases and pests of date palm are concerned, only 9.2% of the respondents were aware about borers while 5.0%, 2.5% and 2.5% of the respondents were aware about scales, aphids and red palm weevil.

The results indicate that awareness level of farmers was very low regarding date palm production technology such as knowledge about promising varieties, recommended irrigation and fertilizer applications and diseases. This was also evident from the qualitative research. A farmer during discussion said, "I tried to plant some date trees last year but they all died because I don't know how to transplant suckers and what their water and fertilizer requirements are? There is no one to tell me about it".

The above remarks indicate that farmers had little knowledge about production technology and didn't know from where they can get information about it. As a matter of fact, it is the responsibility of the Department of Agriculture (Extension), Government of the Punjab to provide appropriate training and information to the fruit growers about relevant production technology (Saleem *et al.*, 2011)

***Yield of date palm*:** The respondents were asked to indicate the average yield of their date palm trees. The responses in this regard are given in Table 2.

Table 2. Distribution of the respondents according to yield of date palm trees

Yield (kg per tree)	Frequency	Percentage
30-40	26	21.7
41-50	45	37.5
51-60	25	20.8
61-70	14	11.7
71-80	4	3.3
>80	6	5.0
Total	120	100.0

The data presented in Table 2 shows that vast majority (80.0%) of the respondents had yield not more than 60 kg per tree. In this connection Ahmad *et al*. (2004) reported yield of Hillawi, Aseel and Shamran varieties up to 81 kg, 79 kg and 71 kg per plant, respectively. It means that the yield of date palm in the study area was very low as compared to the potential yield of other promising varieties.

***Extension services*:** The role of extension agents is important in updating the farmers with new and better technology. The inappropriate and inefficient work of extension worker leads to the failure of dissemination process which ultimately affect the productivity (Rahim *et al*., 2003; Saleem *et al., 2010*) and rural livelihoods (Rivera and Qamar, 2003; Wattoo *et al.,* 2010).

The respondents were asked to specify the frequency of extension contact regarding date palm production technology, and the responses in this regard are presented in Table 3.

Table 3. Distribution of the respondents according to extension services (for date palm) provided by Agri. Extension Department

Duration	Yes		Yes	
	Frequency	%age	Frequency	%age
Last 1 month	0	0	120	100.0
6 months	0	0	120	100.0
1 year	1	0.8	119	99.2
2-4 years	1	0.8	119	99.2
Never	118	98.3	2	1.7

Table 3 shows that an overwhelming majority (98.3%) of the respondent reported that the agricultural extension staff never contacts them (regarding date palm production technology) and only 0.8% said that agricultural extension staff provides services during last 1 and 2-4 years. The agricultural extension department was found inefficient regarding provision of services about date palm production technology. Regarding contact of extension field staff with the date growers, one of the respondents stated that, "I had never received advisory service regarding date palm production and according to my knowledge there is no office of agriculture department in this area". Qualitative data indicate that many people were even unaware with the presence of agricultural extension department. An Agricultural Officer at Dera Ghazi Khan said, "Our work is on major crops and we don't include date palm in our training programs". The lack of interest of the agricultural extension department regarding dissemination of date palm production technology was reported by most of the respondents. The priorities of the extension field staff are on major crops and they completely neglect the date palm.

The problems which were being faced by the date growers were explored through qualitative interviews. The main problem faced by the farmers regarding date palm production were; unavailability of improved varieties, unawareness about production technology, lack of finance, large market distance and no proper place for date marketing, and low prices of dates at market. The respondents demanded that there should be provision of improved varieties, credit facilities, extension services and processing facilities.

CONCLUSIONS AND RECOMMENDATIONS

The farmers of the study area had very low level of knowledge about promising varieties of date, sucker transplanting technique, irrigation & fertilizer requirements, and pests/diseases of date palm. As a result the yield of date was very low as compared to potential yield. Majority of the respondents reported that the extension staff had never contacted them regarding date-palm, while priorities of the extension staff were towards major crops. There is an urgent need to train farmers about scientific methods of irrigation

and fertilizer application, disease and pest management, sucker transplanting and processing of dates. The extension field staff should give due importance to date-palm along with major crops. The Department of Agriculture (extension) should motivate small farmers to adopt recommended technologies and to educate them in overcoming the problems of unawareness about production technology of date-palm.

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