FARMERS PERCEPTION REGARDING PRODUCTION, PROTECTION AND MARKETING OF DATE PALM IN DISTRICT PANJGUR

Noor Hassan[1], Ashar Farooq[1], Arz Muhammad Umrani[1], Fida Hussain[2], Tanveer Hussain[1], Khalid Solangi[1], Mirza Hussain[3], Dr Basheer Ullah[4], Muhammad Saeed[5],Sagheer Ahmad[6], Abid Faiz[1], Asad Ullah[1]

1) Pakistan Forest InstitutePeshawar
2) Balochistan Forest and Wildlife Department.
3) Department of Botany, Govt Girls Degree College Gambat.
4) Agriculture Research Department KPK, Peshawar
5) Sindh Agriculture University,Tando Jam
6) Agriculture Extension and Cooperative DeptBalochistan

Corresponding Author: asharfarooq1973@gmail.com
noorh6902@gmail.com

Abstract: The purpose of the study is to identify production & protection, practices of date palm growers, record perception of date palm growers regards marketing and identify the constraints faced by data palm growers. The current study was carried out in Panjgur district in Balochistan. The data was collected by the questionnaire method. To implement the research plan with the participation of residents, a list of growers had been compiled in each selected village, and 10 interviewees were selected from each village through simple random sampling technology. Growers considered respondents if they had at least 20 date palm trees in their fields. The data is collected and subjected to statistically analysis by using standard method and results are interpreted accordingly. The results of the study showed that the 70% of the respondents had 11-20 years of experience. Most of the defendants had scattered date trees on their farmlands. No intercropping system was found. 97% of the respondents did not know the exact names of the date palm varieties they planted, only a few of them knew. 80% of the respondents know the variety. The vast majority of respondents (62 know irrigation requirements). 87% of the respondents knew about fertilization. 83% of the respondents knew about suction cup transplantation. 95% of the respondents had a certain understanding of diseases and insect pests. About half of the respondents have a suitable market distance of 11-20km, 25.8% and 24.2% had a market distance of 1-10km and 41-50km. Only 0.8% of the respondents had facilities to sell dates at the gate of thefarm.

Keywords: Farmers, Perception, Production, Marketing, Date Palm

Introduction: Pakistan is one of the main producers of date palm. Between 2007 and 2008, Pakistan exported 88451 tons of dry date palms and 4687 tons of fresh date palms and earned $36.033 million from fresh and dry date palm exports (EPB, 2009). Pakistan exports 10% of its date palm on average, 90% of which is consumed or wasted locally (PHDEB, 2008).

the date palm (*Phoenix dactylifera* L.) is probably the oldest cultivated tree in the world (Zaid and Wet, 2002). This tree is an important part of the agricultural system in arid and semi-arid areas and is suitable for small-scale and large-scale farming (Khushk*et al.*, 2009). In addition, date palm is one of the largest food producers per hectare (Zaid and Wet, 2002).

Baloch, *et al.* (2014) during 2012-13, the date palm production and constraints of 60 date palm producers in kech District, Baluchistan province. Baloch and Thapa (2014) analyzed the data of 200 date palm farmers in Panjiegur mountain area of Baluchistan, Pakistan. Ata, *et al.* (2012) assessed some factors that hinder the production of date in a major date growing area in Punjab province, Pakistan.

Movahed*et al.* (2011) concluded date palm contains many kinds of essential anti-inflammatory nutrients, and a lot of crude fiber. It is a valuable nutritional product, which can be used as a delicious cholesterol freenutrient.

Khiari*et al.* (2011) compared with other lignocellulosic fiber sources (such as wood, non-wood species and agricultural waste), it is concluded that the date palm shaft can be used as a good source of papermakingfiber.

Maity and Chatterjee (2010) carried out to evaluate farmers' views on modern investment and its impact on Sustainable perception and concluded that farmers' education level has a positive impact on Sustainable perception. Farmers have the highest level of cognition about irrigation and the lowest level of cognition about high-yield varieties.

Ghosh *et al.* (2010) concluded that particle board made from leaves of date palm can be used as an alternate of wood/plywood at low cost. They further suggested that date palm leave particle board may be used commercially for developing door/window panels, false ceiling, book shelf and packing material for fruits.

Chowdhury *et al.* (2008) according to the report, dates are not only used for sugar production, but also for other purposes, such as making mats, fences, animal husbandry, sunshade, etc., so they have a significant contribution to the livelihood of rural people in Bangladesh.

Motkaluk (2006) reported it is of great significance to clarify the training needs of farmers to improve their skills. In particular, the training of farmers, their spouses and other members of agricultural families who are currently working full-time or part-time on family farms depends, in whole or in part, on the farm for their livelihood.

MATERIAL AND METHODS :

Study Area: Panjgur area in Balochistan is one of the largest areas under date palm trees in Balochistan. Therefore, this study selected this area as the research object. The region was chosen purposefully because it is one of the leading regions in date production in Punjab.

The sample: With the participation of local residents, a list of growers has been compiled in each selected village, and 10 interviewees will be selected from each village through simple random sampling technology, so that the sample size can reach 100. Growers will be considered respondents if they have at least 20 date palm trees in their fields.

Research instrument: A structured interview schedule will be developed to collect quantitative data. 15 farmers were pre tested before data collection and necessary modifications.

Date analysis : The data will be collected and subjected to statistically analysis by using standard method and result will interpret accordingly.

RESULTS:

Demographic characteristics of farmers: The demographic characteristics include age, education, farm size, annual net income, and family size of farmers.

Age of respondents (Years): Data on the age of respondents were obtained on an annual basis. The research shows that the logical purpose of selecting the investigated farmers in

the study area is to involve farmers of all ages in order to establish a balanced sample based on their life experience.

Table1 Showing the Age ofRespondents

Range of Age (Years)	% ages
20-30 (young)	17
30-50 (Middle)	47
50 and above (Old)	36
Total	100

Table 1 depicts the percentages of respondents regarding their ages in years. It is shown that 17 percent of farmers were fallen in the age limit between 20 to 30 years, they are called young farmers. While 47 percent had their ages between 30-50 years which is the major category of the respondents and they are the middle age farmers. The respondents having their ages above 50 years (Old) were 36 percent.

Qualifications of the respondents (Years of Schooling): Education refers to the minimum number of years of formal education required to complete the grade level determined by the respondents. The years of failure or interruption in a particular class are excluded from the calculation of the educational level of the respondents.

Table2 Showing the Educational level ofRespondents

Range	**%ages**
Up to Primary	29
Up to Middle	26
Up to Metric	18
Above Metric	27
Total	100

While looking on data concerning the education of respondents in Table-2it can be depicted that a majority (29%) of respondents had the education up to primary level, while (26%) of respondents had up to middle level. It also indicates that small number (18%) had the education up to metric and 27% farmers have education above metriclevel.

Farm Size of the respondents (Acres): Farm can be defined as the place or pieces of land on which farmer produces certain amount of product (crops) for ensuring the food security of his family and ultimately thecountry.

Table 3 Showing the Farm Size of Respondents

Range (Acres)	%ages
Small (Up to 5)	38
Average (5 to 12 ½)	46
Large (Above 12 ½)	16
Total	100

The data obtained regarding the farm size shown in Table-3 indicates that majority (38% and 46%) of farmers had small and average farm size respectively, while the farmers having more than 12.5 acres of land holding were 16 percent.

Annual Net Income of the respondents: In the under-mentioned Table 4, annual income (Rupee) of respondents is given according to their income level:

Table 4 Showing the income ranges of respondents

Range (Rs)	%ages
< 50,000	55
50,000 to 2,00,000	37
Above 2,00,000	8
Total	100

Table 4 shows that 55% of respondents had annual net income less than 50,000 Rs. while 37 percent of them had annual income up to 2,00,000 RS. Only 8% of respondents had annual net income above 2,00,000 Rs. The results depicted in Table- 4 shows that majority of respondents fall in the range< 50,000 Rs. Whereas, very small number of respondents 8% fall in the income range of above 2,00,000. The situation given in table-4 justified the fact that most of rural people were poor in the study area.

Family Size: Frequency and percentage of the family size of farmers is given in table-5.

Table5 Determining the family size ofrespondents

Family size (Members)	%ages
1-3 (Very small)	13
4-6 (Small)	46
7-9 (Large)	23
10-12 (very large)	18
Total	100

The data in Table 5depicts family size regarding the number of family members depend on respondent. It shows that 13% of the respondents had very small (1-3) family size while 46% of farmers had small (4-6) family size. On the other hand, 23% of farmers had large (7-9) family size and 18 % of farmers had very large (10-12) family size respectively.

Professional experience: Frequency and percentage of the professional experience of farmers is given in table-6.

Table-6 Professional Experience

Experience	Percentage
05-10 years	23
11-20 years	70
21-30 years	7
Total	100

Table-6 shows that majority 70% of the respondents had 11-20 years of experience; while 23% respondents had 05-10 years of experience and 7% respondents had 21-30 years of professional experience.

Date palm production and protection practices

Pattern of date palm cultivation: Date palm cultivation mode is divided into orchard cultivation, scattered cultivation and intercropping cultivation. Data in this regard are shown in Table 7.

Table 7: Distribution of the respondents according to their pattern of date palm cultivation

Pattern of cultivation	Frequency	Percentage
Orchard	3	3
Scattered trees	97	97
Intercropping	0	0
Total	100	100.0

The vast majority of respondents have scattered date palms, and only 2.5% have well-developed orchards. No intercropping system was found. The results show that the trend of orchards construction is not obvious.

Varieties grown

Table8: Distribution of the respondents according to varietiesgrown

Varieties grown	No		Yes	
	Frequency	Percentage	Frequency	Percentage

Hillawi	3	3	97	97.0
Karbalain	0	0	100	100.0
BJ	0	0	100	100.0
Dhakki	3	3	97	97.0
Khudrawi	2	2	98	98.0
Muzawati	0	0	100	100.0
Shamran	4	4	96	96.0
Aseel	1	1	99	99.0
Jaman	0	0	100	100.0
Don't know	97	97.0	3	3.0

Table 8 shows that 97% of the respondents did not know the exact names of the date palm varieties planted in their fields, and only a few people with well-developed orchards improved the varieties. Almost all date palm trees in Panjgur are propagated by seeds. There is no scientific or local naming system in this area. Local people often name the date by its color. A farmer during interview said.

Income from date palm:

Table9: Distribution of the respondents according to their income from date palm

Rupees (Rs)	Frequency	Percentage
0	11	11
1000-5000	20	20
5001-10000	19	19
10001-15000	10	10
15001-20000	23	23
20001-50000	9	9

>50001	8	8
Total	**100**	**100**

According to the data in table 4.10, 23.3% of the respondents received an annual salary of Rs. 15001-20000 from date palm, and 20%, 19% and 10% respectively received an annual salary of Rs. 1000-5000, Rs. 5001-10000 and Rs. 10001-15000. According to the data, 11% of the respondents have no income from date, only 8% and 9% of the respondents have an annual income of more than Rs. 50001 and Rs. 20001-50000.

Date palm growers regarding date palm production and protection technology

Table10: Distribution of the respondents according to their awarenesslevel regarding date palm productiontechnology

Awareness about	**No**		**Yes**	
	Frequency	**Percentage**	**Frequency**	**Percentage**
Varieties	20	20	80	80
Irrigation	38	38	62	62
Fertilizer	13	13	87	87
Sucker transplanting	17	17	83	83
Insect pests and diseases	5	5	95	95

Table 10 shows that 80% of respondents know the variety, while 20% do not. The vast majority of respondents (62 know irrigation requirements). Only 13% of the respondents did not know how to apply fertilizer, and 87% of the respondents knew how to apply fertilizer. About 17% of the respondents did not know about suction cup transplantation, 83% of the respondents knew about suction cup transplantation. In terms of date palm diseases and insect pests, only 5% of the respondents did not know the pests and diseases, while 95% of the respondents knew the pests anddiseases.

Perception of farmers regarding marketing

Table11: Distribution of the respondents according to the distance fromsuitable datemarket

Distance from market	Frequency	Percent
At farm gate	1	1
1-10 km	26	26
11-20 km	49	49
41-50 km	24	24
Total	100	100.0

About half of the respondents have a suitable market distance of 11-20km, 25.8% and 24.2% have a market distance of 1-10km and 41-50km. Only 0.8% of the respondents have facilities to sell dates at the gate of the farm.

Problems/constraints: Finally, date palm growers in Pangjur district (Balochistan province) are required to be clearly aware of the problems / restrictions they face in the production and sale of date palm, and they report that farm to market infrastructure, high transport costs, market facilities for growers, quality seeds, lack of date palm processing equipment and cold storage, high-quality pesticide, high fertilizer and FYM prices and Timely availability, cultivation of date growers for production and post harvest treatment and absence of soil testing facilities. Growers believe that the agricultural market infrastructure and high transportation cost are the first level problems faced by 100% of growers, while the market facilities, high-quality seeds and irrigation water, lack of data processing equipment and refrigeration of growers are the second, third and fourth level problems respectively. In rank-5, high quality insecticides, high fertilizer and FYM prices and timely availability are problems, while in rank-6 and rank-7, the production of brown brown growers, post harvest treatment and training without soil testing facilities are problems. In view of the current research, it can be considered that the government has not shown its presence to help date growers and the development of marketing infrastructure in Balochistanpanjgur, the studyarea.

Table 12: Problems/constraints and their ranking as perceived by the date palm growers in Pangjur district of Balochistan province

Problems	Percentag	Rank
Farm to market infrastructure	100.0	1
High transportation costs	100.0	1
Market facility to growers	96.0	2

Quality seed	90.0	3
Irrigation water	90.0	3
Lack of date processing unit and cold storage	79.0	4
Quality pesticides	73.0	5
High fertilizer and FYM price and timely availability	73.0	5
Training of date palm growers for production and post-harvest handling	50.0	6
Non-existence of soil testing facilities	40.0	7

DISCUSSION: On an overall basis the average age of selected growers was having their ages above 50 years (Old) were 36. While looking on data concerning the education of respondents' depicted that a majority (29%) of respondents had the education up to primary level. The data obtained regarding the farm size indicates that majority (38% and 46%) of farmers had small and average farm size respectively. Family size regarding the number of family members depend on respondent majority shows that 13% of the respondents had very small (1-3) family size. Majority 70% of the respondents had 11-20 years of experience While, Jat (2003) reported that 26% of respondents primary education, 17% of education to the middle of 150.4 percent is illiterate, some figures have reached an intermediate level of education, graduated only 41 percent of the education up to admission. Omari (2014) indicates that decision making relating to farm affairs in the study area would have considerable influence h\ the young to middle aged farmers. The extension services need to give emphasis on these categories of the Farmers. Further, findings indicate that the highest proportion (55 percent) of the farmers fell under secondary level followed by 30 percent fell under primary level and in percent above secondary level; only 5 percent of the respondents were illiterate.Nonga, *et al.* (2011) reported that the easy access to agrochemicals, sanitation and limited knowledge of extension services is limited pesticides indiscriminate use of agrochemicals factors. Increase farmers' awareness and training, aimed at sustainable agriculture, use of pesticides and integrated pest management recommendations.Ajayi and Solomon (2010) assessed the size had a significant association with adoption of oil palmtechnologies.

The results showed that 80% of the respondents knew the varieties and 20% did not know the varieties. The vast majority of respondents (62 know irrigation requirements). Only 13% of the respondents did not know how to apply fertilizer, and 87%oftherespondentsknewhowtoapplyfertilizer.About17%oftherespondentsdid

not know about suction cup transplantation, 83% of the respondents knew about suction cup transplantation. In terms of date palm diseases and insect pests, only 5% of the respondents did not know the pests and diseases, while 95% of the respondents knew the pests and diseases.These results contradict those of Abbas (2008), which reported that 86%, 68.6%, 90.1%, 47.9% and 43.8% of the respondents knew the varieties of Hillawi, khudrawi, Aseel, Jaman and Shamran. He further reported that 96% of the respondents knew the recommended irrigation time, which was roughly the same in terms of sucker transplants, fertilization and pests.

According to the data, 23.3% of the respondents get income of rs. 15001-20000 from date palm every year, 20%, 19% and 10% respectively get income of Rs. 1000-5000, Rs. 5001-10000 and Rs. 10001-15000. According to the data, 11% of the respondents have no income from date, only 8% and 9% of the respondents have an annual income of more than Rs.50001 and Rs.20001-50000. In fact, the return on an acre of developed date palm garden is about Rs.156600-200250(Hassan *et al*., 2006). This means that compared with the potential income, the respondents' date income is very low. Qualitative interviews found that the low yield varieties, unreasonable market infrastructure, and lack of understanding of production technology of date palm trees greatly reduced the income of date palmtrees.

Local market towns have an important contribution to the economic transactions of farmers. The improvement of market access and the improvement of rural livelihood welfare are mutually reinforcing. Farmers usually like to sell agricultural products in well-equipped and convenient markets (Shilpi and Umali-Deininger 2007). The data collected in this regard are introduced. About half of the respondents have a suitable market distance of 11-20km, 25.8% and 24.2% have a market distance of 1-10km and 41-50km. Only 0.8% of the respondents have facilities to sell dates at the gate of thefarm.

CONCLUSION: The respondents having their ages above 50 years (Old) were 36 percent. It can be depicted that a majority (29%) of respondents had the education up to primary level. The data indicates that majority (38% and 46%) of farmers had small and average farm size respectively. Majority 55% of respondents had annual net income less than 50,000 Rs. It shows that 13% of the respondents had very small (1-3) family size while 46% of farmers had small (4-6) familysize.

The results shows that majority 70% of the respondents had 11-20 years of experience. An overwhelming majority of the respondent had scattered date palm trees. No intercropping system was found.

The 97% of the respondents were unaware about the exact name of the date varieties grown in their fields and only few. 80% of respondents know the variety. The vast majority of respondents (62 know irrigation requirements). 87% of the respondents knew about fertilization. 83% of the respondents knew about suction cup transplantation. 95% of the respondents have a certain understanding of diseases and insectpests.

About half of the respondents have a market distance of 11-20km, 25.8% and 24.2% have a market distance of 1-10km and 41-50km. Only 0.8% of the respondents have facilities to sell dates at the gate of the farm.

RECOMMENDATIONS: Farmers in the study area have a low level of knowledge about date palm varieties, transplanting technology, irrigation and fertilization requirements, date palm diseases andpests.

There is an urgent need to train farmers in scientific methods such as irrigation and fertilization, pest control, seedling transplanting and date processing.

The extension workers should pay attention to the cultivation of dates and main crops.

The Ministry of agriculture (Ministry of extension) should encourage small-scale farmers to adopt the recommended technology and educate them to overcome the problem that they do not know the production technology of dates.

REFERENCES

Abbas, M. W. 2008. An investigation into extent of awareness and adoption of date palm production technologies among the farmers of District Bahawalpur. Unpublished Master's thesis, Dept. of Agri. Ext. U.A., Faisalabad.

Ajayi, M. T and O. Solomon. 2010. Influence of extension contact and farmers' socioeconomic characteristics on adoption of oil palm technologies in Aniocha north local government, delta state, Nigeria. JAGST. 12(2):

Ata, S., Shahbaz, B., & Ahmad, M. 2012. Factors hampering date palm production in the Punjab: a case study of DG Khan district. Pak. J. Agri. Sci, 49(2), 217-220.

Baloch, J. B. S. U., Bashir, S. K. B. S. W., Baloch, H. N., Sabiel, S. I., Badini, S. A., & Dad, R. 2014. Economics of Date Palm (Phoenix dactylifera L.) Production and Its Development in District Kech, Balochistan Province of Pakistan. *Economics*, *5*(22).

Chowdhury, M. S. H., M. A. Halim, N. Muhammed, F. Haque and M. Koike .2008. Traditional utilization of wild date palm (Phoenix sylvestris) in rural Bangladesh: an approach to sustainable biodiversity management. J. For. Res., 19(3):245–251.

EPB (Export Promotion Bureau), 2008-09. Government of Pakistan, 2009. Export from Pakistan: Summary 2008-09.

Ghosh, S. K., S. Sengupta and M. Naskar. 2010. Physio-mechanical properties of particle board from agro-wastes. Journal of scientific and industrial research., 69(5): 396-400.

Hassan, S., K. Bakhsh, Z. A. Gill, A. Maqbool and W. Ahmad. 2006. Economics of growing date palm in Punjab, Pakistan. Int. J. Agri. Biol., 8(6): 788-792.

Khiari, R., E. Mauret, M. N. Belgacem, F. Mhemmi. 2011. Tunisian date palm rachis used as an alternative source of fibres for papermaking applications. Bio Resources., 6 (1): 265-281.

Khushk, A. M., A. Memon and K. M. Aujla. 2009. Marketing channels and margins of dates in Sindh, Pakistan. J. Agric. Res., 47(3): 293-308.

Maity, B., and B. Chatterjee. 2010. Assessing farmer awareness indices of modern inputs in India. European journal of social sciences., 15(4): 537.

Motkaluk, S. 2006. Training for farmers: EU programme for peace and reconciliation in Northern Ireland and the border region of Ireland. Engineering and technology Unit. Available (online): http://www.eugrants.org/status_explanation.asp.

Movahed A., M. M. Mohammadi, S. Akbarzadeh , I. Nabipour , N. Ramezanian and N. Hajian. 2011. The heart of date palm: its nutritional and functional constituents. Iranian South Med J., 2: 100-5.

PHDEB, 2008. Dates marketing strategy. Pakistan horticulture development and export Board 2008.

Zaid, A and P.F. de Wet. 2002. Origin, geographical distribution and nutritional values of date palm. Date Production Support Programme. FAO.