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INFLUENCE OF AGRICULTURE EXTENSION SERVICES AND FARMER'S SOCIO-ECONOMIC CHARACTERISTICS ON ADOPTION OF DATE PALM (Phoenix dactylifera L.) IN DISTRICT DERA ISMAIL KHAN, PAKISTAN

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ABSTRACT

This study was conducted in the major date producing areas (Dakki, Mian Wada, Mathra Abad, Jhok Ghamy Wali, Habib Abad, Bilot Sharif, Himat, Jhok Moazam, Matwala Shah, Chura and Jhok Malkanri) of the district Dera Ismail Khan, by personal interview method from a sample of 51 respondents selected from these areas for quantitative data collection. Most of the respondents have a secondary and higher secondary level of education (39.2%, 33.3%) respectively. 51% respondents has more than 200 kanals land. It was also found that this category (having more than 200 kanals) have higher secondary level of education. Majority of the respondents have no other source of income (74.5%). The grower's percentage increased gradually and at present 37.2% respondents were attached with date palm cultivation since last 5-10 years whereas 27% were growing date palm from last 20 years. 84% respondents cultivate the "Dakki" cultivar which is one of the most profitable date cultivar but majority of the respondents (74%) got knowledge about enhanced varieties from their fellow farmers and only 22% respondents were educated by extension workers. 77.3% respondents were facing the problems of insect/pest attack but only 54.9% of the selected respondents apply the plant protection measures. Although, all the farmers were satisfied from their date palm production, still 41.5% were expecting to get help from extension department about insects/pest and rodent control while 17% respondents expect others type of help from extension department (inputs).

Key words: Date palm, extension services, socio-economic characters, personal interview.

INTRODUCTION

Date palm (phoenix dactylifera) is the most important product of the arid, tropical and subtropical regions of the world. It is one of the greatest food producing tree per hectare (Zaid and Wet, 2002). The dates are the most valuable fruit and consumed all across the world (SMEDA 2009). It is the most precious fruit and is also quoted in the 20 verses of "Holy Quran" as a food, medicine and also called as the fruit of paradise. Holy Prophet (SAW) himself said that the best property of date palm is that it cures many many diseases. It is the main source of carbohydrates (70-80%) in the form of fructose and glucose (Al-Farsi et al., 2005), vitamin B-complex (B^1, B^2), vitamin A, nicotinic acid, aspartic acid and essential and non-essential amino acids (Hafez and El-Sohaimy 2010).

More than 2000 cultivars at present are known all over the world with variation in their genetic makeup (Askari et al.,2003), but very few important ones have been evaluated for their agronomic purposes and fruit quality (Al-Hooti et al., 1997). Pakistan is among the top ranking countries producing dates (PHDEB, 2008). Pakistan exported 88,451 tons of dried dates and 4,687 tons of fresh dates and earned $36.033 million from export of both fresh and dried dates during the year 2007-2008 (EPB, 2009). Our country export only 10% of the total dates produce while the remaining 90% is consumed locally or wasted (PHDEB, 2008).

Date plantation is highly profitable and maintains positive returns for a long period of time, hence improving the livelihood of the growers (Hassan et al., 2006). But unfortunately unawareness of the benefits of date cultivation, poverty and unawareness of production technology are the main obstacles in hindering the date cultivation in the country (Luqman et al., 2002). Due to the high cost of inputs and low cost of produce the farmers tends to avoid cultivating date palm gardens. It is therefore necessary to aware the farmers and make them familiar with modern methods of high agricultural production. For advancement of the livelihood in rural areas, it is also necessary that government build a new and expanded policy in favor of agricultural extension and catalyze changes within the public sector (Rivera and Qamar, 2003). The most important farmer's motives for agricultural diversification and their contribution is desire in livelihood improvement and family diet. For effective integration of farm components knowledge is also necessary (Bosma et al., 2005). Local markets have a significant contribution to the economic transactions of rural households and a positive link exists in between the improved access to market and rural livelihood welfare (Dercon and Hoddinott, 2005).

Keeping in view the importance of the farmer's socio-economic characteristics, extension services and its influence in improving the rural livelihood, the present study was conducted with the objectives to pin point the major production constraints in adoption of date palm in the area.

MATERIALS AND METHODS

In order to investigate "An influence of extension services and farmer's socio-economic characteristics in adoption of date palm in District Dera Ismail khan", the study was conducted in the major date producing locations of district namely; Dakki, Mian Wada, Mathra Abad, Jhok Ghamy Wali, Habib Abad, Bilot Sharif, Himat, Jhok Moazam, Matwala Shah, Chura and Jhok Malkanri. These villages were selected randomly with the cooperation of local residents and farmers. All the date palm growers in the area were considered as population among which 51 farmers were contacted as a sample for efficient study. The farmers having at least 25 trees in their orchard were considered as the respondent. Structured interview pattern was made to collect quantitative data. The interview pattern was pre tested for fine results and necessary changes were made. Interview questionnaire was used during a survey to collect information. Farmers were contacted individually at their orchards, home and hujras. The questions were clarified to the farmers in order to get first hand information. The interview was based on various questions including; literacy level, size of land holding, cultivated orchards area, problems (control methods, transport) etc.

Main focus was on the role of extension services in date palm cultivation enhancement, major constraints of farmers, problems which serve as an obstacles in high date palm production, suggestions of farmers and kind of help, they need.

RESULTS AND DISCUSSION

Distribution of respondents regarding literacy level:

Education is the aggregate of all the processes bringing desirable changes in the behavior of human being. For positive change in the behavior of human being education is an important road map. Education improves the quality of mind. An educated person seems to be more thoughtful and tactful as compared to ignorant illiterate person. (Muro and Burchi, 2007). In the light of utmost importance of education the respondents were evaluated regarding their literacy level. The data of literacy level of these respondents is presented in Fig A. It is evident from the table that 20 (39%) of the respondents have secondary level of education and 17 (33%) were above secondary level. Very few of the respondents 5 (9.8%) were illiterate and those having primary level of education were 2 (3.9%) while 7 (13.7%) respondents were of middle level of education. It was also observed that with an increase in literacy level, the awareness of the respondents also increased because the respondents having secondary level or higher literacy level have attended more meetings with field staff have more cultivated area and also adopt the various plant protection measures such as chemical and cultural control methods. Their frequency of know how about modern practices was also higher than those of illiterate. These results are somewhat different form that of Rayit (2010) which might be due to sample size and study area who reported that majority (50.8%) of the respondents were illiterate, 29.2% belonged to literacy level of primary, whereas remaining 14.2% and 5.8% belonged to educational level middle, Matric and above.

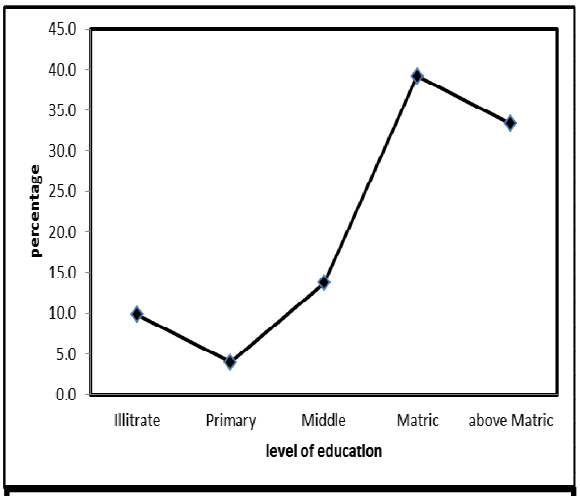


Fig A. Distribution of respondents regarding

Distribution of respondents with respect to size of land holding:

A land holding refers to the piece of land that is owned and cultivated by a farmer and his family (Nawaz, 1989). It is generally believed that the farmers having large area are more willing to take risks in adopting new technologies and trail of the new methods and practices. The farmers having more land generally concentrate to have a greater contact with the information sources. Therefore an attempt was made to collect the data from the respondents having more area. The data collected are presented in figure B. Figure B, explains that there is great variation among the three land holding categories (50-99 kanals, 100-199 kanals, 200 and above). 17.6% of the respondents have a land holding 50-99 kanals which is the least value of all the respondents, 100-199 kanals 31.4% while the owners having land 200 kanals or above were 51% respectively. It was observed that those having more than 200 or 200 kanals have secondary level of education or above the secondary level. Results are slightly different from that of Zia (2005) who stated that owner of less than 50 kanals were 37%, 50-99 kanals were 20%, 100-199 kanals were 10% while the owner of 200 and above kanals were 33%.

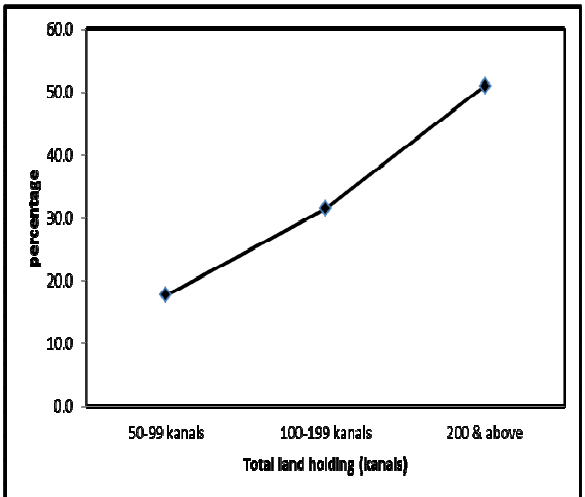


Fig B. Distribution of respondents

Distribution of respondents with respect to area under date palm cultivation:

Figure C shows the percentage of the respondents of various categories regarding their area under date cultivation. Very slight differences were observed among different categories of area under date cultivation. 19.6% of the respondents have 200 kanals or more area under date cultivation. The area under date cultivation of 25.5% respondents was up to 49 kanals. The respondents who have an orchard on the area of 50-99 kanals and 100-199 kanals were 27% each.

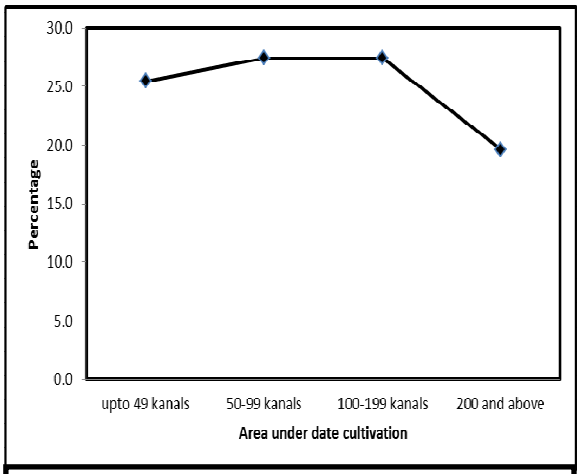
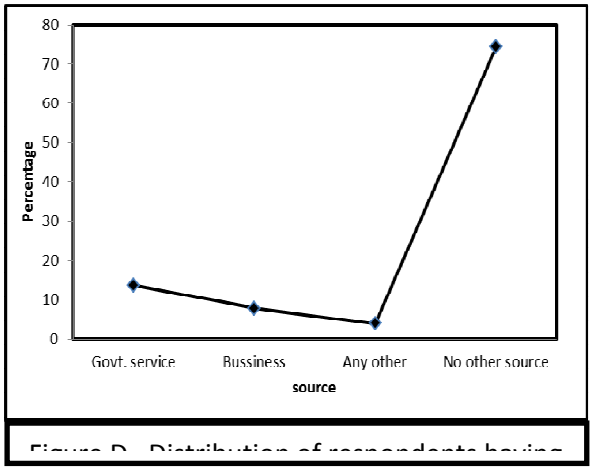


Figure C Distribution of respondents

Distribution of respondents with respect to any other source of income:

Most of the respondents were directly based on agriculture. The responses of respondents regarding source of income expressed in percentage is shown in figure D. it can clearly depicted from the figure that majority of respondents have no other source of income (74.5%) and the date orchard is the only source of income. It can also be concluded from the findings that date orchard provides them satisfactory produce to fulfill their needs. The satisfaction of the farmers (Fig H) also supports these results. While the remaining respondents were getting their earnings from the government jobs, business and other sources which were 13.7%, 7.8% and 3.9% respectively.



Distribution of respondents regarding duration of date palm cultivation:

Date is the major economic activity in the area. The data collected regarding duration of data cultivation is presented in figure E. It is evident from the figure that 37.2% respondents were attached with date palm cultivation since last 5-10 years followed by the respondents which were growing date palm since 11-20 years which is 27.4%. Those respondents which were growing date palm since 21-30 years were 17.6% and 9.8% respondents were attached with the date palm growing activities since 31-40 years. Very few respondents were found practicing date palm cultivation since 41-50 years. It is reflected from the data that the grower's percentage increased gradually and can be further enhanced with the help of various extension services application. It also exhibits that awareness among the farmers has increased from last few decades.

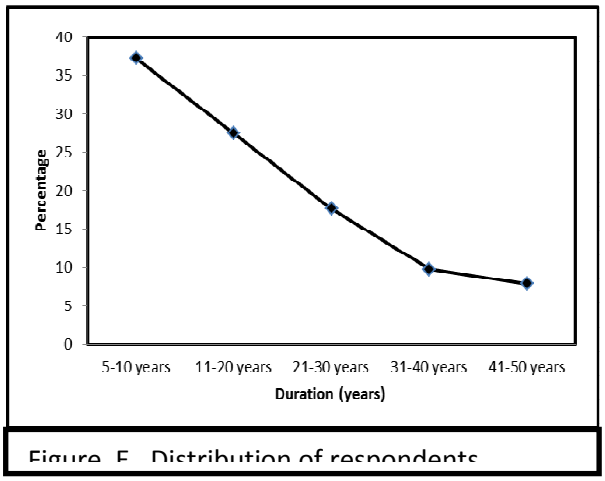


Figure F. Distribution of respondents

Distribution of respondents regarding knowledge about profitable variety:

The data regarding varietal selection by respondents is presented in figure F. it was observed that 84% respondents cultivate the "Dakki" cultivar which is one of the most profitable date cultivar while 16% of the respondents give response about other varieties. The other cultivars that are planted in the target area consist of Basra (Tosha Basra, Gol Basra), Shakri, Mobai, Dhanri and Mala wali. These cultivars are also good performers both in quantitative and qualitative traits. Thus it can be safely generalized that the farming community of the area is aware about selection of cultivar. These results are quite close to that of Ata (2011) who reported that 97.5% of respondents were growing Dakki variety.

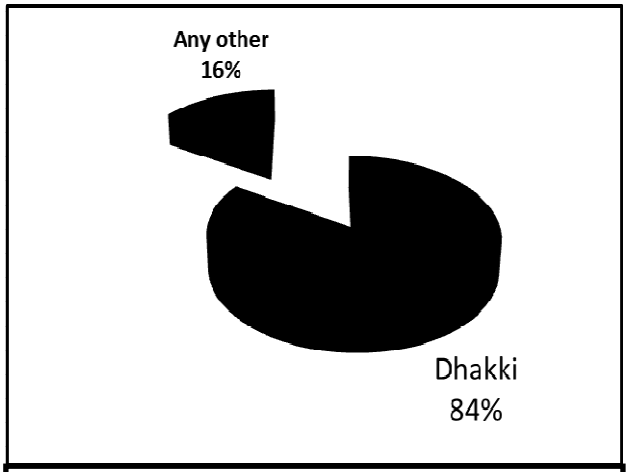


Figure F. Distribution of respondents regarding

Distribution of respondents with respect to learning source of improved varieties:

The agricultural productivity is directly related with the use of superior cultivars. It is the role of extension department to educate the farmers about the new and superior cultivars. In the study area it was found that most of the respondents get information about new and improved varieties from their fellows. The data collected about learning source of improved varieties is presented in figure G. Figure G exhibits that 74% respondents got knowledge about enhanced varieties from their fellow farmers. About 22% respondents preferred extension workers. 4% of the respondents visited various agencies (insecticide, pesticide agencies) to know about the good varieties while none of respondent learned about improved cultivars from media. (Figure G). The results are in close analogy to that of Zia (2005) who reported that 66% of the respondents get awareness from fellow farmers while 34% use the source of extension workers.

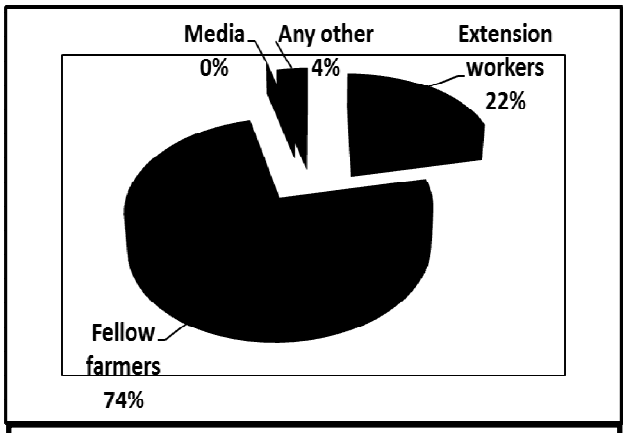


Figure G. Distribution of respondents

Distribution of respondents regarding satisfaction from production:

The data pertaining to production satisfaction is given in Fig H. A positive response was given by each respondent on the question about satisfaction from date palm production. From the table it can be safely concluded that the area is most suitable for the date production and it is the main source of income of the growers in the target area. Inspite of their satisfaction, a great potential is still there to improve the date production by introducing new advance production technology. Moreover timely and regular supply of various inputs to the farming community can also enhance the production capabilities of date palm in the area.

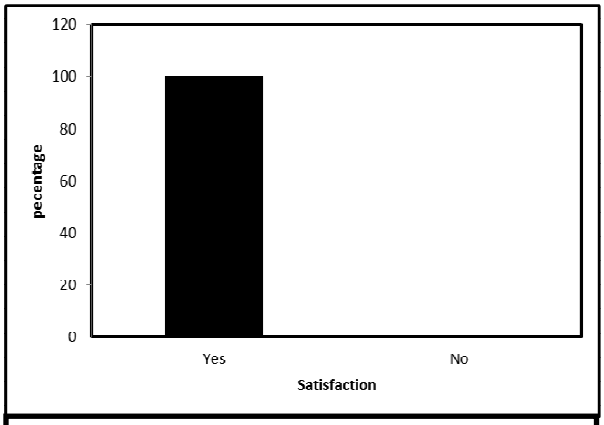
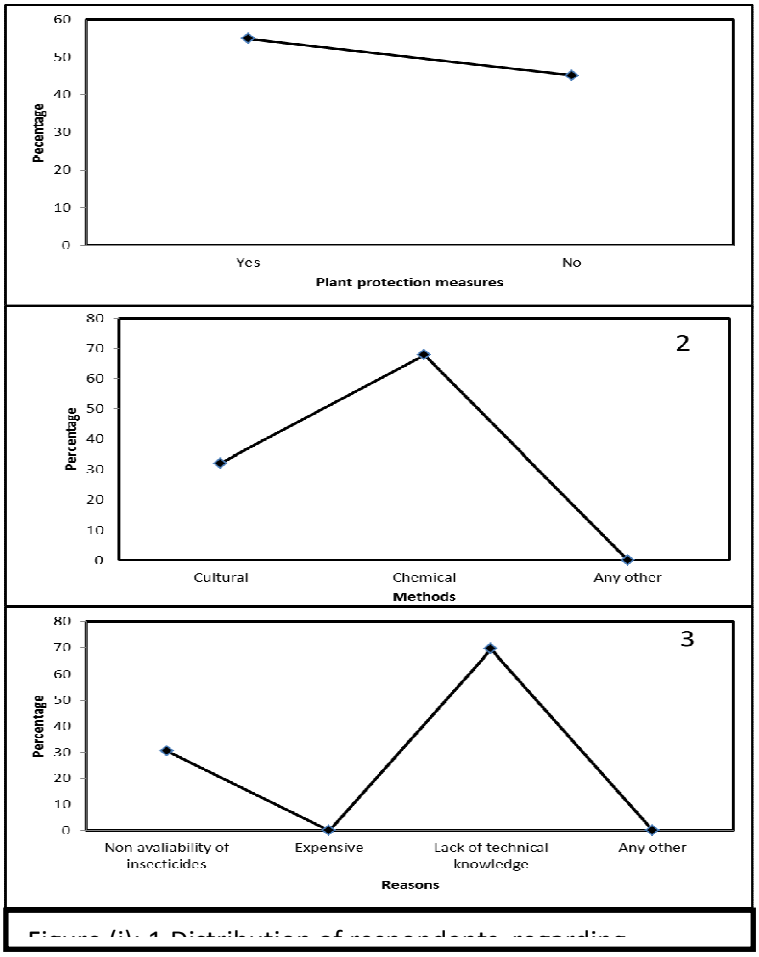


Fig H. Distribution of respondents regarding

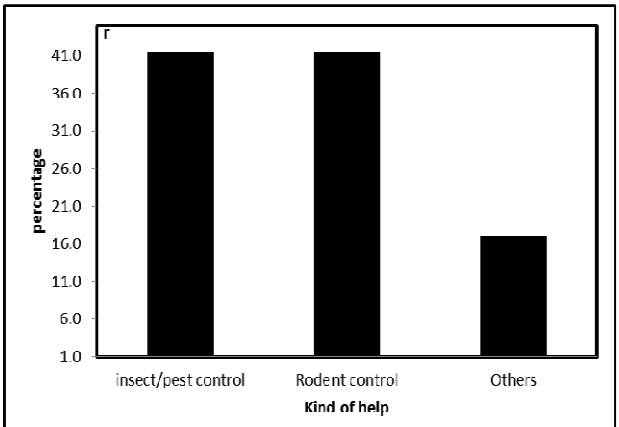
Distribution of respondents regarding knowledge about plant protection measures of date palm:

New methods of plant protection are introduced by scientists and the need is to transfer these methods to farmers. The data regarding knowledge of plant protection of different respondents is presented in figure I. From the figure I (1) it can be depicted that 54.9% of the selected respondents apply the plant protection measures while remaining 45.1% respondents do not utilize these methods. The respondents that utilize the plant protection measures were further evaluated about different methods of plant protection. The figure I (2) presents that the most frequently used plant protection measures were cultural, chemical control or any other type. 32.2% respondents were applying cultural methods of plant protection in their orchards while 67.8 % of respondents were applying chemical methods for plant protection. It was found that most of the respondents utilized chemical control methods. Out of 47 % respondents which were not using these methods, 30.5% were facing problems of unavailability of insecticides while 69.5% of the respondents lack technical knowledge of plant protection measures Fig I (3).



Distribution of respondents regarding kind of help:

Careful planning is needed to allocate the scarce resources in date palm farming to satisfy the respective requirements. The kinds of help farmers expect from the extension department are represented in the Fig J. All of the respondents i.e. 51(41.5%) were expecting to get help from extension department about insects/pest and rodent control while 21 (17%) respondents expect others type of help from extension department (inputs). Providing inputs to the farmers at low cost or free are good incentives for motivation of farmers and increasing date palm productivity.



Flg J. Distribution of respondents regarding

Distribution of respondents regarding problems:

There are few hurdles that are playing their role in decreasing the production which must be overcome. The data collected from the respondents on a question about what type of problems they are facing is presented in Fig K. It was concluded from the table that 51 (77.3%) respondents were facing the problems of insect/pest attack, 10 (15.1%) were fighting with problem of transport and only 5 (7.6%) respondents claimed that the prices of their produce in the market was not reasonable.

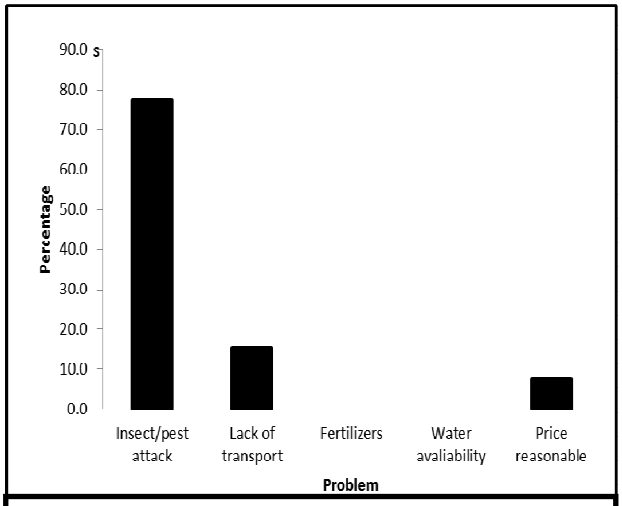


FIg K. Distribution of respondents regarding

CONCLUSIONS

From the present study it is concluded that;

- ► Proper extension services were not found in the study area.
- ► The farmers learned about some improved production practices from the fellows.
- ► Inspite of limited awareness by the fellow farmers, the frequency of date palm growers increased from previous decade.
- ► All the farmers were satisfied from the date production.

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