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Factors Affecting Citrus Productivity in District Dir Lower

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Abstract
The present research study was conducted in six union councils of District Dir lower namely Talash, Rabat, Munjai, Balambat, Khungi, and Hayaseri; to study the existing situation of citrus production and to investigate the factors affecting citrus production in the study area. A total of 64 sample respondents from six union councils of District Dir lower having different characteristics were selected and interviewed. Association was checked between the main dependent variable i.e. citrus productivity with lack of technical assistance, lack of improved varieties, lack of irrigation facilities, diseases attack, lack of marketing facilities, high cost of transportation, poor extension services, and lack of government interest towards citrus growers in the study area. Hence the problem being faced by the citrus growers in different union councils are multidimensional. Results show that 31.2 % of the citrus growers called diseases attack reasons for citrus low productivity followed by poor extension services 25 %, lack of irrigation facilities 1.6 %, lack of improved varieties 17.1 % who stated reasons for citrus low productivity. The most serious threat to citrus fruit is the decline in citrus orchard. Data regarding citrus orchard decline show that 29.7 % of the respondents stated lack of government interest as the main reason for citrus orchard decline followed by high transportation cost 23.4 %, poor marketing facilities 17.2 %, and natural disaster 20.3 %. Association between dependent and independent variables was recorded significant. Analysis of the data show that lack of technical assistance, lack of improved varieties, lack of irrigation facilities, diseases attack and natural disaster (flood) were perceived to be the related problems faced by citrus growers for citrus low productivity in the study area. It was concluded from the result findings that majority of the respondents were literate and agriculture was their main profession but there were no government interest programme for citrus growers to empower them in gaining of technical skills and basic professional training regarding citrus orchard management. It is recommended that professional trainings by extension staff are necessary for citrus growers regarding new citrus production technology.
Keywords: Factors, Citrus, Productivity, District Dir lower

INTRODUCTION

Citrus is an ever green fruit tree, belongs to the family Rutaceae. It is grown tropically and sub-tropically all over the world in more than 140 countries, major cultivation and production region of the world is consider the Northern Hemisphere. There are 78 species of the family Rutaceae sown all over the world for marketing and commercially as a source of income. Citrus is world widely used in fresh and processed form and is important source of vitamins, minerals in addition to carbohydrates, which are essential for normal human health. Citrus fruit play a very important role in the prevention of lungs, liver, skin cancers, heart diseases, birth defects and provides a balanced and healthy life style (Ghirdharilal, 2000). Nature has glorified Pakistan with an ideal climate for growing a wide range of tropical and sub-tropical fruits are grown in different parts of the country. Pakistan is among the few countries of the world having four seasons and the soil is rich for the cultivation of different kinds of fruits. More than 26 types of fruits including citrus are grown throughout the year. Average yield of citrus in Pakistan is 10-12 tones/ha. While in other citrus growing countries average yield of citrus goes up to 26 tones/ha. While the potential yield of citrus are 18-20 tons per hectare (GoP, 2010).

Citrus is a prized fruit of Pakistan and sustain number one position among all fruits both in area and production in the country. Among citrus fruits, sweet orange is dominant and much more widely distributed and grown than any other citrus species. Sweet orange (Citrus Sinensis) constitutes approximately 70 % of the world citrus production, followed by mandarins 19 %, lemons and limes 11 % and grape fruit 50 %, with the exception of the mandarin and sour orange, sweet orange tree is the hardiest of all commercial citrus species (Ismail and Zhang, 2004). A large variety of fruits is produced in Pakistan on an area of 836 thousand hectares with a total production of 6926.7 thousand tones. Out of which 264 thousand tones of fruits are exported from the country. Citrus is grown on an area of 194.5 thousand hectares with a total production of 1982.2 thousand tones. Out of the total area under fruits, 60 % of it is under kinnow and 29.56 % is under citrus and with more than 75 % production of total citrus fruits. (Agricultural Statistics of Pakistan, 2010-11).

In Punjab, the maximum production of citrus (Orange) is in Sargodha, Rahim yar khan, Jhang, Sahiwal, Lahore, Multan, Gujranwala, Sialkot, Mianwali and Toba Tek Singh respectively. In Sindh, the maximum production of citrus is in Khairpur, Sukkar, Jacobabad, and Nawabshah respectively. In Khyber Pakhtunkhwa, Peshawar, Hazzara, Nowshera, Sawabi, Swat, Mardan, and Dir are considered to give maximum citrus

production while in Balochistan, Sibbi, Makran, Turbat, Nasirabad and Kachi are famous for citrus (GoP, 2010).

Objectives of the study

1. To study the existing situation of citrus production in the study area.
2. To investigate the factors affecting citrus production in the study area.
3. To suggest recommendation for future planning.

MATERIALS AND METHODS

The study was conducted in district Dir lower during 2013 on citrus productivity. The growers faced problems in citrus productivity in major growing area of Dir lower. The study area comprised of 37 union councils, out of which six union councils were selected purposively, where the sample size of citrus growers @ 80% selected randomly. Sample size of 64 citrus growers were drawn from six union councils, i.e. 6 citrus growers from Talash, 16 from Rabat, 12 from Munjai, 10 from Balambat, 8 from Khungi and 12 from Hayaseri union councils. In order to collect the required information interview schedule was prepared. To check the validity of interview schedule, it was pre-tested and necessary amendments were incorporated in the interview schedule before finalizing it. The sample respondents were interviewed by the researcher personally at their farms or houses. Keeping in view the time and financial limitation and educational capacity of the respondents, interviews were conducted. While interviewing, the researcher tried to maintain informal and friendly atmosphere to obtain the factual information from the respondents. The data collected from the respondents in the pre planned interview schedule were analyzed through Statistical Package for Social Sciences (SPSS) and MS Excel.

RESULTS AND DISCUSSION

Educational status

Education plays an important role in human resource development and brings all about desirable changes in human behavior. Through education human can gain skill, knowledge and problems solving techniques, which influence positively on human behavior either directly or indirectly. Educated people are expected to have more favorable attitude towards agriculture skills, knowledge and information gain as compared to uneducated ones.

The sample respondents were two of major categories, namely illiterate and literate. The literate were further classified as primary, middle, matric and above matric. The number of respondents belonging to each of the above stated categories is presented in Table-1, which shows that 17.2% of respondents had education of matric level, 21.9% of primary, 21.9% of middle, 10.9% of above matric level while 28.1% of respondents were illiterate.

Table I Distributions of respondents according to their educational level

Education level	Number of citrus growers	percentage
Illiterate	18	28.1
Primary	14	21.9
Middle	14	21.9
Matric	11	17.2
Above Matric	7	10.9
Total	64	100

Source: Field data

Area under citrus orchard

Orchard is an area or piece of land on which fruit tree are planted and cultivated for the commercially production in the form of a large land. It determines the number of fruits tree planted and cultivated per hectare on an area. Table 2 reveals data regarding size of land holding of the sample respondents under citrus orchards which show that 54.7 % area under citrus orchard were in the ranges of less than one acre, area under the citrus orchard in the range of 1-2 acres were 45.3 % in the study area. While there were no respondent having an area more than 2 acre.

Table II Distribution of the respondent according to area under citrus orchard

	Area under citrus in acres						Total	
	Less than 1 acre		1-2 acre		Above 2 acre			
	No.	%	No.	%	No.	%	No.	%
Total respondents	35	54.7	29	45.3	-	-	64	100.0

Source: Field data

Factors affecting citrus productivity

Productivity is the ratio of output to input in a production, it is a measure of the efficiency of production. Increasing of national productivity can raise the living standards of the people, because more real income

improves people ability to purchase goods and services, enjoy leisure, improve housing and education and contribute to social and environmental programs. Table 4 show that majority of the respondents 31.2 % were facing the problem of diseases attacked on their citrus orchard followed by 25 % were of poor extension services, 21.9 % were lack of technical assistance and 17.1 % were lack of improve variety in the study area. The result 31.2 % calculated for disease attack was in good comparisons with Plaza *et al,* (2003).

Table IV Distribution of the respondents on the basis factors affecting on citrus production

	Major factors affecting citrus production						Total	
	Lack of improve variety	Diseases attack	Poor extension services	Lack of technical assistance	Improper irrigation facilities	All of the above		
Total	11 (17.1)	20 (31.2)	16 (25)	14 (21.9)	1 (1.6)	2 (3.1)	64	100.0

Source: Field data note: figures in parenthesis are percentages

Satisfaction wise production distribution of the sample respondents

Data regarding the satisfaction level about citrus production were asked from the sample respondents presented in Table 5. A vast majority i.e. 73.4 % of the respondents stated that they were not satisfied from their citrus production. Similarly 26.6 % of the sample respondents stated that they were satisfied from the citrus production respectively.

Table V Distribution of the respondents according to their satisfaction level

	Yes		No		Total	
	No.	%	No.	%	No.	%
Total respondents	17	26.6	47	73.4	64	100.0

Source: field data

Conclusions

The research study concluded that majority of the respondents in the study area were not satisfied from citrus productivity, they stated that lack of technical assistance, lack of improve varieties, lack of marketing facilities, diseases attack, improper irrigation facilities, poor extension services, high cost of transportation and natural disasters were the main hurdle faced to citrus growers in citrus productivity. The results of the study further show that second majority in the study area were literate respondents and agriculture were their main profession, but the level of awareness among citrus growers about improve citrus varieties, identification of diseases and technical education was very low, which show that there was a weak linkage between researcher and citrus growers. Citrus growers have no information regarding fruit management practices such as irrigation, fertilization, pruning and treatment of disease which result in poor productivity and fruit quality. The findings of the study suggest that the citrus growers should be educated and trained by the extension field staff regarding citrus orchard management practices to increase per acres citrus productivity.

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