Pak. j. life soc. sci. (2007), 5(1-2): 30-33

Pakistan Journal of Life and Social Sciences

Assessment of Profitability of Sugarcane Crop in Faisalabad District

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Abstract

The study was carried out to assess the profitability of sugarcane crop. For this purpose a sample of 75 sugarcane growers in Faisalabad district was taken from randomly selected five villages i.e 15 sugarcane growers from each village. Majority of them (78 %) were small farmers. Average yield of small and medium farmers was 23601 and 25438 kg per acre respectively. Net return of medium farmers was greater (Rs. 13910) than small farmers (Rs. 9315). There was not much difference in cost-benefit ratio of small and medium farmers, which was 2.04 and 2.18 respectively. The average yield per acre of sugarcane crop in Faisalabad was far below and cost of production per acre was higher than other districts of Punjab.

Key Words: Pakistan agriculture, sugarcane, Punjab, production and cost-benefit ratio.

Introduction

Pakistan is predominantly an agricultural country. A major proportion of the population (65.9%) lives in the rural areas and is directly or indirectly dependent on agriculture. It provides employment to 44.8% of labour force and contributes about 22.3 to GDP. Sugarcane is the major cash crop of Pakistan. It accounts for 9.66% in value added in agriculture It is an important source of income and employment for the farming community of the country. Pakistan occupies an important position in sugarcane producing countries of the world. Share of sugarcane acreage of Punjab is 62%, Sindh 26%, and N.W.F.P. is 16%. The average yield of sugarcane in the year 2005-06 was 20105.35kg/acre. The record yield (20669.96kg/acre) was reported in 1997-98 (Govt. of Pak., 2006). Sugarcane yield per acre in Pakistan is far below than that of other cane producing countries of the world. Pakistan is at 5th position in production and at 6th position in yield in the world (FAO, 2006).

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Agronomic factors like preparatory tillage, bed preparation, planting techniques and time, water availability for irrigation, application of fertilizers, management of ratoon crop, harvesting time, type of cultivars and plant protection measures affect its production. These factors also contribute to the cost of production.

Total production of Pakistan is 45229700 tons in which the share of Punjab is 59.43 percent. Punjab province in Pakistan has highest share in sugarcane acreage and its yield is 16460.90 kg/ acre which is lower than that of national average i.e. 19341.56 kg/acre (Govt. of Pakistan, 2006). In the same way the cost of production of sugarcane per acre is also higher in Punjab than the other provinces of Pakistan. Malik and Sardar (2002) investigated into the cost of production and contribution of various cost items in cultivation of sugarcane crop in Punjab and Sindh during 1995-96 and 1999-00, and reported that overall cost of production was higher in Punjab than Sindh. Like growers of other crops, sugar cane growers of the Punjab province are also facing a host of problems. The prices of agricultural inputs are going out of the reach of farmers very fastly. These include fertilizers, pesticides, seeds, power tariffs and diesel. Timely provision of credit is essential as it has a positive impact on the productivity of sugarcane crop (Bashir *et al.* 2007). Research and experience of advanced countries have shown that key to increase per acre yield lies in the adoption of modern scientific technologies by the farmers for which they must have contacts with a variety of information sources.

The study was conducted to find out profitability of sugarcane crop in Faisalabad District with the following objectives.

- To estimate the contribution of various factors on the yield of sugarcane
- To estimate the economics of sugarcane
- To know about the marketing problems
- To suggest the policy measures

Materials and Methods

A farm level survey was conducted in District Faisalabad. Purposive sampling technique was adopted to select villages. Five villages were selected from Distrist Faisalabad i.e. 66 J. B. Dhandra, Chhota Vaheela, 64 J. B, Chak No. 238 and Chak No. 239. From each selected village, 15 cane growers were selected at random. Thus, total number of respondents was 75. Farmers were pre-stratified into two categories on the basis of operational holdings (small < 12.5acres, medium >/= 12.5 < 25 acres). Data were collected through farmer's interviews using a well-designed and comprehensive questionnaire. This questionnaire comprised of questions helping the estimation of cost of production of sugarcane crop. The data, thus obtained were analyzed using simple percentage to estimate the various responses and draw conclusions for pertinent recommendations.

Estimation of Cost of Production

Net value of the produce and cost involved were estimated. Cost of variable inputs such as deep ploughings, ploughings, plankings, seed rate, canal and tube well irrigations, FYM, DAP, urea were computed. To calculate net return and cost per 40 kg of cane were computed by the method adopted by Manan 2001.

Net Returns = Gross Returns – Gross Cost

Cost per 40 kg = Gross Cost/ yield in 40 kg

Cost-benefit ratio: It is defined as the amount received in the shape of profit on the cost of one rupee invested. The CBR was calculated as

Cost-benefit ratio = Gross return/ total cost

Results and Discussion

Socio-economic Profit and Farmers

The socio-economic features of the farming families like personal characteristics of the farmers and socio-economic attributes related to their families and farms generally considered important in receptivity of innovations and farm productivity. The mean age of the respondents was about 48 years with 53 percent primary level education. The farming experience of respondents was 11 years on an average. The average household size was about 9 persons per family. In rural setup, farm size and its composition have a significant bearing on the social and economic position of the farmers. On an average 78 percent of respondents having less than 12.5 acres and remaining 22 percent have more or equal to 12.5 acres.

Table No. 1 Social Character of Farming Community

Social Characters	Findings
Average age	48 years
Primary Level Education	53 % of respondents
Farming Experience	11 years
Average Household Size	9 persons per family
Less than 12.5 acres of land	78 % of respondents
More than 12.5 acres of land	22 % of repondents

Cost of Inputs

Sugarcane is the dominant crop of mix cropping zone of the Punjab. Adequate quantity of inputs at proper time is very crucial for sugarcane crop. Accordingly much of the emphasis and its management practices along with its cost at farm levels were investigated in detail. Management of different inputs such as land preparation, seed rate, irrigations etc. not only increase the production but also decrease the cost of production and hence productivity and net returns could be increased without additional investment of resources. It is a common trend in rural people to use their own bullocks for ploughings and plankings. In this way higher rates of ploughings and plankings by tractor were used. Expenditures on canal irrigations were almost the same by small and medium farmers. It was because of the reason that after the establishment of Punjab Irrigation and Drainage Authority (PIDA) in 2004, the collection of canal rates (Aabiana) are collected on the basis of one's acreage. Hence, per acre "aabiana" was almost the same by small and medium farmers.

Deep ploughings were carried out more by small farmers than medium farmers and the mean expenditure was 819.72 rupees. Medium farmers emphasized more on ploughings and plankings and the mean expenditure on ploughings and plankings was 1925 rupees. Medium farmers use more seed rate than small farmers. Small farmers used more tube well irrigations. Expenditure on tube well irrigations by small and medium farmers was Rs. 3672.78 and 2860 respectively. There was not much difference in earthing up, FYM, urea or DAP except plant protection measures. Expenditures on PPM by small and medium farmers were 76.76 and 280 rupees respectively.

Table No. 2 Average Quantity of Inputs Applied and Expenditures of Sugarcane crop

Item/ unit	Application			Expenditures (Rs.)		
	Small	Medium	Mean	Small	Medium	Mean
Deep Ploughings (No.)	3.18	2.00	2.59	964.44	675.00	819.72
Ploughings and Plan.(No.)	4.40	6.40	5.40	1460.00	2390.00	1925.00
Seed Rate (kg)	2880	3080	2980	5760.00	6160.00	5960.00
Canal Irrigations (No.)	11.36	15.60	13.48	171.33	177.00	174.16
Tube Well Irrigations (No.)	12.09	8.80	10.45	3672.78	2860.00	3266.39
Earthingup and Inter.(No.)	1.30	1.00	1.15	340.00	280.00	310.00
PPM (No.)	1.00	3.60	2.30	76.67	280.00	178.35
FYM (Trolley)	2.89	2.80	2.48	1294.00	1270.00	1282.00
Urea (bag)	2.08	2.20	2.14	1163.33	1230.00	1196.65
DAP (bag)	1.49	1.60	1.57	1592.89	1594.00	1592.44
Land Rent for one year	--	--	--	11000.0	9500.00	10250.0
Mark up @ 14 % excluding water rates	--	--	--	3311.14	3273.06	3292.10

Table No. 3 Economic Analysis of Sugarcane Production

	Farm Size Category		
	Small	**Medium**	**Mean**
Yield (kg/ acre)	23601.2	25438.7	24519.95
Gross Return (Rs.)	40122.22	43600.00	41861.11
Gross Cost (Rs.)	30806.58	29689.06	30247.82
Net Return (Rs.)	9315.62	13910.94	11613.28
Cost per 40 kg (Rs.)	52.21	46.68	49.45
Cost-benefit ratio (%)	1.30	1.47	1.38

Yield of small and medium farmers was 23601 and 25438 kg per acre. Average gross return by small and medium farmers was 41861 rupees per acre and can be comparable with the study of Mannan (2001) found gross return that was 33615 rupess per acre. This difference was due to the increase in market price of cane from 2001 to 2006, not due to increase in yield. Average of net returns by small and medium farmers were 11613.28 which were very similar to the study conducted Mannan (2001) who found that net income by medium farmers were 11457 rupees. Cost per 40 kg for medium farmers was 45.68 rupees. Saleem and Jami conducted same type of study in 2001 who reported that the average cost of production per 40 kg of sugarcane was 39.81 rupees. Javed reported in 2003 that cost per 40 kg of sugarcane crop was 41.83 by small farmers. This gradual increase in cost of production was due to increase in prices of inputs from 2001 to 2006. Cost benefit ratio for small and medium farmers was 2.04 and 2.18 respectively.

Conclusion and Recommendations

Most of the farmers were young-aged farmers and they had a tendency of using new production technology techniques. But old-aged farmers had a greater trend of using old production technologies. The farmers faced two main problems in the production of sugarcane crop. First one was shortage of water and second one was the poor quality tube well water available at farm level. That was because; Faisalabad is an industrial city and at many points the water is mixed with industrial wastewater that deteriorates the water quality. It was the common trend of the farmers to use seed from their previous crop. In this way, the next crop is less yielding and more disease causing. Farmers were also growing those verities that were banned by the Government of

Pakistan but the people were continuously growing those verities. Most of the farmers were not using the recommended cultural practices. They used inputs by their own will. The average yield of small and medium farmers was 24519.95 kg/acre, which is far below than the other districts of Punjab. In some villages of Sialkot, farmers were getting 44000kg/acre. Medium farmers got net returns more than those of small farmers. Average of cost-benefit ratio by small and medium farmers was 2.11.

Following recommendations may generate more profit

There is a great need for developing high yielding and disease resistant verities and educating the farmers regarding management practices to obtain more production.

Good cane seed and easy access of seed should be available to farmers and the banned verities should be eliminated entirely from the villages.

Use of groundwater should be minimized and more canal water facilities should be provided to farmers through better water management practices minimizing water losses.

Agricultural scientists and policy makers should put emphasis on increasing cane yield rather than increasing price support because sugarcane price support improves farmer's income in the short run but increase in the production of cane increase the farmer's income in the long run.

Institutional reforms are needed to update, improve and make users' responsive agricultural research, extension and education services.

Electronic media should extensively be used for telecasting programs and projecting details of various components of the improved agriculture technologies.

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