Constraints Faced by Pigeonpea Growers in Adoption of Postharvest Management Practices in Gulbarga District

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Abstract: The study was conducted in Gulbarga district of North Karnataka during 2013-14 to know the knowledge level of farmers about post-harvest management in pigeonpeaby selecting 120 farmers as respondents for the study. The data was elicited by administering interview method and analyzed using frequency and percentage. Majority of the respondents faced the problem of high fluctuation in market prices (71.66%), followed by non availability of processing units at village level (45.83%) and inadequate storage facility at village level (35.83%), are the other constraints faced by the respondents due to inadequate storage facilities in rural areas, farmers loose a substantial quantity of their produce. Farmers sell their produce just after harvest due to lack of storage facilities. Hence, rural godowns are must, to avoid the sale immediately after the harvest.

Key words: Knowledge, Post-harvest Management Practices and Pigeonpea

INTRODUCTION

Pigeonpea or redgram (*Cajanuscajan L.*) is most important pulse crop of tropics and sub tropical region of the world. It ranks second important pulse crop next to the bengalgram. Pigeonpea is considered to be origin of peninsular India. It is a perennial shrub and a short annual crop in India and as a perennial in many other countries, where the pods are harvested at regular interval. The crop has deep root system and hence highly drought tolerant. More than 350 vernacular names of red gram have been recorded however, it is commonly known as Tur. The name Pigeonpea was first reported from Barbados, where the seeds where once considered very useful as feed for pigeons.Agricultural development has to major aspects, one is production and another one is post-harvest processing. Until now we have concentrated our efforts on agricultural production and neglected post-harvest processing of farm and animal products. Technology of post-harvest processing of agricultural products refers to the processes and treatments carried out on agricultural products after it is harvested and hence they farm post-harvest process technology or post-harvest technology. It starts from

the selection of proper harvest and ends with marketing. All processes such has harvesting, threshing, drying, storage, parboiling, milling, sorting, grading, packing, transport, marketing etc., are included under this term.

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A post-harvest loss of fruits and vegetable is 22 to 40 per cent, pulses, oilseeds and cereals is 10 to 30 per cent. These losses mainly arise because of improper harvesting methods, problems of threshing, storing, transportation and processing leads to large-scale losses in food grains. Thus, the post-harvest losses obviously have an impact on the economy. In

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Karnataka, there is thinking that, there is a considerable loss of pigeonpea in post production operations. There are no specific recommendations made as those of improved varieties of crops and there production technology. Farmers based on their experience do adopt post-harvest technology. Some innovative farmers might have adopted the scientific post-harvest technologies. With this background the present study was designed to know the constraints faced by Pigeonpea growers in adoption of post-harvest management practices in Gulbarga district.

METHODOLOGY

The research study was conducted in Gulbarga district of North Karnataka. This district was purposively selected as it ranks first in area and production of pigeonpea. Gulbarga district consists of seven taluks, and pigeonpea is grown in all seven taluks. Two taluks namely Gulbarga and Jewargi were selected for the study. Since they occupied first and second place in area under pigeonpea cultivation, respectively. The Lists of villages was prepared from the selected taluks and from this list, four villages in each taluks were selected by simple random sampling method from each selected villages 15 respondents were selected randomly. Thus, total sample size constitutes 120 respondents. Based on the objectives of the study, an interview schedule was prepared. The information was elucidated from respondents with the help of structured schedule. The interview schedule was per tested in non sample area for its practicability and relevancy. The information was collected by personally interviewing respondents using per structured interview schedule. The data was elicited by administering interview method and analyzed using frequency and percentage.

RESULTS AND DISCUSSION

Socio-economic Profile of Pigeonpea Growers

Age

The data presented in the Table 1 revealed that, majority (64.17%) of the respondents were in middle age group followed by young age (25.00%) and old age (10.83%), category. Farmers of middle age with more farming experience, work more efficiently than older and younger ones. Further, individuals of 36 to 50 years of age group have more family responsibility than young and old age groups. This might be the important reason to find majority of respondents in the age group of 36 to 50 years.The results are in line with the findings of Raghuprasad (1992) and Vedamurthy (2002).

Education

The Table 1 depicts the education level of the respondents and result indicates that, nearly one third (30.00%) of the respondents were illiterate, followed by middle school (27.50%) of the respondents and primary school (17.50%). The rural people are still traditional bound, they generally do not prefer to send their children to colleges and expect their children to assist in farm and household activities, and also due the distance of the higher education centers from the village might have prevented the parents from providing higher education to their children.The above finding got support from the studies conducted by Shashidhara (2003) and Raghunandan (2004).

Family Size

The data presented in Table 1 shows that, majority (72.50%) of the respondents' belonged to big family size ranging from more than 5 members, where as 27.50 per cent of respondents belonged to small family (1-4 members). The possible reason could be that joint family system prevailed in rural area, whereas big family helps to spare some time for agriculture related activities. These findings were in conformity with the findings of Sulthana (2001) and Ningareddy (2005).

Annual Income

The Table 1 indicated that, majority (42.50%) of the respondents belonging to medium income category (Rs 17000-51000). The possible reason might be that majority of pigeonpea growers have 5 to 25 acres of land holding indicating better economic conditions of the pigeonpea growers. The findings were in accordance to the findings as reported by Vijay Kumar (2001), Vedamurthy (2002) and Sharanappa G (2011).

Land Holding

It is clear from Table 1 indicated that, 40.83 per cent of the respondents had semi-medium land holding (5.1-10 acres), followed by medium farmers (25.83%) and small farmers (19.17%), Whereas only 10.00 and 4.16 per cent of them were big and marginal farmers respectively. The possible reason for this trend might be due to the fact that, being agriculture as main occupation and their way of life, they always try to posses more and more acres of land. It could also be their ancestors property. The other reason may be that for the respondents need agriculture land for the fodder for their animals. Only 4.16 per cent of them

had marginal holdings. The possible reason could be the ancestral land was broken into smaller and smaller fragments due to increasing family size year by year. Those who had other occupations apart from agriculture might have less access to land holdings since, they may not find sufficient time to devote for agriculture with the labour intensive activity. The other possible reasons for the existence of marginal land holdings could be some of the respondents were agriculture labourers.The findings were in accordance with the findings of Karpagam (2000) and Shashidhar (2003).

Farming Experience

The farming experience of respondents shown in Table 1 indicate that, more than half (55.83%) of the respondents belonged to medium farming experience. It might be due to the fact that majority of the respondents have of 5.1 to 25.00 acres and also majority of the farmers were educated up- to middle school therefore, they might have started farming in their early age itself. So they had more farming experience. The findings were in accordance with the findings of Reddy (2003) and Shashidhar (2003).

Mass Media Utilization

Table 1 indicates that, half (50.86%) of the respondents possessed TV and are regularly viewing political news, annadatha program, serial, film/songs and less number of respondents read newspaper (27.50%), and farm magazines (18.29%) occasionally, may be due to non-subscribing to those magazines. That's why they don't have the habit of reading newspaper and farm magazines regularly or daily. Whenever they obtain the newspaper or farm magazines from others, then only read otherwise they do not read. They read here and there in grocery stores in others house or in youth clubs if available. The results are in line with findings of Kanavi (2000), Ningareddy (2005) and Manjunath T (2010).

Extension Participation

The Table 1 indicates that majority (41.14%) of the respondents have participated regularly in krishimela, followed by educational tour (32.57%), training programme (24.57%), Extension group meeting (23.43%), Field visit, (20.00 %), Agriculture exhibitions (18.29%), field day (17.14%) and demonstrations (10.29%). Lack of motivation and disinterest of the respondents might be the reason for less participation. The results were in accordance with the result of Angadi (1999), Mamatha and Hiremath (2000) and Manjunath (2010) who found that farmers participation in extension activities was very low.

Achievement Motivation

Achievement motivation of respondents is indicated in Table 1 which shows that, half (51.50%) of the respondents comes under medium level of achievement motivation category, followed by 39.50 per cent and 25.00 per cent of the respondents had high and low level of achievement motivation, respectively. Since, achievement is an important indicator to be developed among the farmers for sustained results in agricultural sector. The extension personnel should concentrate their efforts in developing need for achievement motivation. The above finding was in conformity with finding of Budihal (2001), Birajdar (2002).

Economic Motivation

The data in Table 1 revealed that, about (38.33%) of the respondents belonged to medium economic motivation group, followed by high level of economic motivation with (31.67%). Whereas, (30.00%) of the pigeonpea growers belonged to low economic motivation category. The price of the pigeonpea is fluctuating every year. Low yield due to heavy incidence of pests and diseases and high cost involved in adoption of post-harvest management practices resulted in medium level of economic motivation. The above findingswere in agreement with the findings of the studies conducted by Chauhan and Patel (2003), Sandesh (2004) and Raghavendra (2005).

Risk Orientation

The result presented in Table 1 indicated that, nearly half (49.17%) of the farmers had medium risk orientation followed by low risk orientation (40.00%) and high risk orientation (10.83%). It should be mentioned here, that the individuals will be very critical and cautious in understanding different aspects of technology. There is a tendency in farmers to take risk based on their income, land holding and other resources. Risk taking varies with socio-economic status of the individuals. In the study most of the respondents belonged to medium annual income category and also had medium land holdings. Hence, the above results could have been obtained.These findings are in accordance with the findings of Vijaykumar (2001), Vedamurthy (2002) and Pallavi (2006).

Table 1
Socio-economic profile of Pigeonpea Growers n=120

Distribution of Pigeonpea Growers according to Age

Sl. No.	Particulars	Category	Frequency	Percentage
1	Young	Up to 35 years	13	10.83
2	Middle	36-50 years	77	64.17
3	Old	Above 51 years	30	25.00

Distribution of Pigeonpea Growers according to Education

1	Illiterate	Cannot read and write	36	30.00
2	Primary school	1 to 4th standard	21	17.50
3	Middle school	5 to 7th standard	33	27.50
4	High school	8 to 10th standard	19	15.83
5	Pre-university	11 and 12th standard	7	5.83
6	Graduate	Degree and above	4	3.33

Distribution of Pigeonpea Growers according to Family size

1	Small	1-4members	33	27.50
2	Big	5 and above members	87	72.50

Distribution of Pigeonpea Growers according to Annual income

1	Low (Up to Rs. 17,000)	Less than Mean –0.425*SD	21	17.50
2	Medium (Rs.17,001–51,000)	Between Mean ± 0.425*SD	51	42.50
3	High (Above Rs. 51,000)	More than Mean + 0.425*SD	48	40.00
		Mean= 194958.3	SD=137352.7	

Distribution of Pigeonpea Growers according to Land holding

1	Marginal farmers	Up to 2.50 acres	5	4.16
2	Small farmers	2.5 -5 acres	23	19.17
3	Semi-medium farmer	5.1-10 acres	49	40.83
4	Medium farmers	10.1-25 acres	31	25.83
5	Big farmers	>25 acres	12	10.00

Distribution of Pigeonpea Growers according to Farming Experience

1	Low	Less than Mean – 0.425*SD	19	15.83
2	Medium	Between Mean ± 0.425*SD	67	55.83
3	High	More than Mean + 0.425*SD	34	28.33
		Mean=24.15	SD=6.13	

Distribution of Pigeonpea Growers according to Mass media Utilization

Sl. No.	Activities	Owner/Subscriber		Regular		Occasional		Never	
		F	%	F	%	F	%	F	%
1	Radio	59	49.16	20	16.57	27	22.29	73	61.14
2	News paper	16	13.33	28	23.33	33	27.50	59	49.16
3	Television	93	77.50	61	50.86	41	34.29	18	14.86
4	Farm magazine	13	10.83	18	14.86	22	18.29	80	66.86

Note: F- Frequency and% - Per cent.

contd. table 1

Distribution of Pigeonpea Growers according to Extension Participation

Sl. No.	Activities	Regular		Occasional		Never	
		F	%	F	%	F	%
1	Training programme	29	24.57	36	29.71	55	45.71
2	Demonstration	12	10.29	32	26.29	76	63.43
3	Field day	21	17.14	32	26.29	68	56.57
4	Field visit	24	20.00	29	24.16	67	55.83
5	Extension group meeting/ Interaction	28	23.43	39	32.50	53	44.16
6	Agriculture exhibitions	22	18.29	27	22.29	71	59.43
7	Krishimela	49	41.14	33	27.43	38	31.43
8	Educational tour/ Exposure	39	32.57	48	40.00	33	27.43

Note: F- Frequency and% - Per cent.

Distribution of Pigeonpea Growers according to Achievement Motivation

1	Low	Less than Mean – 0.425*SD	30	25.00
2	Medium	Between Mean + 0.425*SD	51	51.50
3	High	More than Mean + 0.425*SD	39	39.50
		Mean=4.52	SD=1.69	

Distribution of Pigeonpea Growers according to Economic Motivation

1	Low	Less than Mean – 0.425*SD	36	30.00
2	Medium	Between Mean + 0.425*SD	46	38.33
3	High	More than Mean + 0.425*SD	38	31.67
		Mean=19.58	SD=2.39	

Distribution of Pigeonpea Growers according to Risk Orientation

1	Low	Less than Mean – 0.425*SD	48	40.00
2	Medium	Between Mean + 0.425*SD	59	49.17
3	High	More than Mean + 0.425*SD	13	10.83
		Mean=3.15	SD=1.45	
		Total	**120**	**100**

Constraints Faced by Pigeonpea Growers in Adoption of Post-harvest Management Practices

The constraints faced in adoption of post-harvest management practices by pigeonpea growers were found in Table 2 (Fig. 1) Majority of the respondents faced the problem of high fluctuation in market prices (71.66%), followed by non availability of processing units at village level (45.83%) and inadequate storage facility at village level (35.83%), are the other constraints faced by the respondents due to inadequate storage facilities in rural areas, farmers loose a substantial quantity of their produce. Farmers sell their produce just after harvest due to lack of storage facilities. Hence, rural godowns are must, to avoid the sale immediately after the harvest. The non-availability of labours (34.16%) might be due to the migration of labours to the city. There are many malpractices (28.33%) prevailing in markets like excess weighment, delay in payment (12.50%), different kinds of arbitrary deductions for religious and charitable purposes from producers, high commission charges, delay in weighing, loading, unloading and weighing charges from producers. and loss of produce through traders sampling in open market (21.66%) by high wages of labour (23.33%). Generally, the price of Pigeonpea prevails low in early post-harvest period due to more arrivals in the market and later on prices go up. Due to this unstable price, the farmers get lesser price and other reasons are low knowledge level and low adoption of the improved post-harvest management practices. The middle man and commission agents charge is more (22.50%), which might be the reason for the existence of a long chain of middlemen and commission agents and this reduces the share of the consumer's price. The lack of transportation facility at producers level (19.16%). Due to inadequate transportation facilities at village level, producers sell their produce directly to traders,

Table 2
Constraints Faced by Pigeonpea Growers in Adoption of Post-harvest Management Practices n=120

Sl. No.	Constraints	Frequency	Percentage	Rank
1	High fluctuation prices in market	86	71.66	I
2	Non availability of processing units at village level	55	45.83	II
3	Inadequate storage facility at village level	43	35.83	III
4	Non availability of labourer	41	34.16	IV
5	Involvement of malpractice in weight measurement	34	28.33	V
6	High wages of labour	28	23.33	VI
7	Middle man/agent charge is more	27	22.50	VII
8	Loss of produce through traders sampling in open market	26	21.66	VIII
9	Lack of transportation facility at producers level	23	19.16	IX
10	Delay in payment	15	12.50	X
11	Heavy incidence of storage pests	13	10.83	XI

which offer them lesser price than prevailing in the markets. The heavy incidence of storage pests (10.83%), due to lack of awareness about post-harvest management practices through chemicals. These results are in agreement with the findings of Vijayakumar (1997), Kumar (1998) and Sunil Kumar (2004).
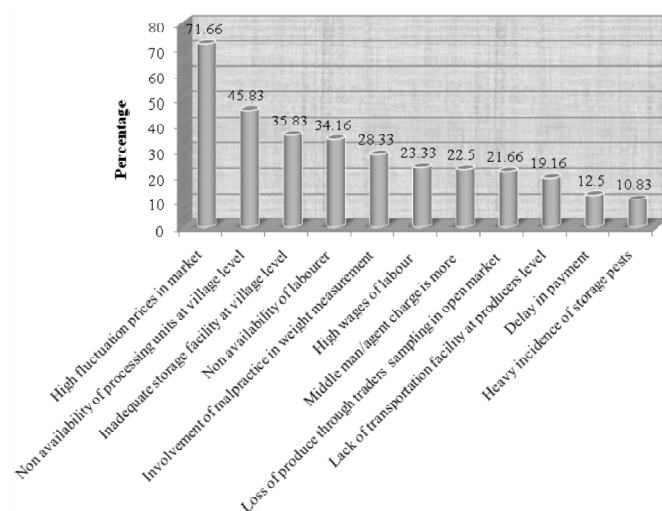

Figure 1: Constraints faced by pigeonpea growers in adoption of post-harvest management practices

CONCLUSION

The study revealed that the majority of the respondents faced the problem of high fluctuation in market price, followed by non availability of processing units at village level and inadequate storage facility at village level are the other constraints faced by the respondents due to inadequate storage facilities in rural areas, farmers loose a substantial quantity of their produce. Farmers sell their produce just after harvest due to lack of storage facilities. Hence, rural godowns are must, to avoid the sale immediately after the harvest.

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