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Research Paper

Identification of the constraints faced by the college and the farmers' of the vicinity in the cultivation of *Aloe-vera* crop

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ABSTRACT : Aloe (*Aloe vera*) is an important and traditional medicinal plantbelonging to the family Liliaceae. Results of opinion survey revealed that the major constraints were lack of technical advice for *Aloe vera* cultivation, scarcity of packing material, lack of processing unit, high cost of improved variety suckers, low prices of *Aloe vera* crop and less interest of local leaders for *Aloe vera* cultivation.

KEY WORDS : *Aloe vera*, Liliaceae, Constraints, Lack of technical advice (**JEL codes:** A1, A14,A12,A11, A10, B40, B41)

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INTRODUCTION :

Aloe (*Aloe vera*) is an important and traditional medicinal plant belonging to the family Liliaceae. It is believed to have originated in Africa (Netali *et al.*, 1990). *Aloe vera* is a coarse looking evergreen perennial plant that grows with slow rate. It is a stemless or very short-stemmed succulent plant growing upto 80-100 cm height, spreading by off shoots and root sprouts. Each plant usually has 12-16 leaves which on maturing may weigh upto 2-5 kg. In India, it is grown commercially for its high demand in cosmetic industries as well as in Indian system of medicines. Estimated area and production of *Aloe vera* in 2010 in Jaipur was 7000 hectares with an annual production 1,12,000 tonnes (*www.ics.trieste.it.com*). The succulent leaves are economic part of this plant. Aloe is known by several names in India such as Ghritkumari, Kunavr Pathu and Indian aloe. The major markets for *Aloe vera* and its extracts are Australia, US and the entire Europe. Despite the ideal climatic conditions for the cultivation of *Aloe vera*. We have not been able to exploit it. The reasons are simple lack of cultivation and processing know how given the exponentially growing demand for it in the international market, *Aloe vera* presents the finest commercial opportunity among the various medicinal plants.

Hahnemann Charitable Mission Society, an ISO certified NGO, established in the year 1996 is working in the area of commercialization of medicinal plants and assisting farmers in cultivation. So that they may get financial freedom. HCMS is promoting *Aloe vera* cultivation all over India. Farmers in India regularly face problems like lack of rain, low ground water level, soil degradation etc. therefore, cultivation of *Aloe vera* would be beneficial as it requires minimum usage of water and the returns from it would be more than Rs. 50,000 per acre yearly. *Aloe vera* scheme is in operation at S.K.N. College of Agriculture, Jobner. This scheme was started at the College Farm in the year 2004-2005. It is being sponsored by the Directorate of Horticulture Govt. of Rajasthan, Pant Krishi Bhawan, Jaipur.

MATERIALS AND METHODS :

Sample selection and data collection :

Jaipur district was selected purposively due to vicinity of college. Thus, six villages namely Nayabas, Macharkhani, Dyodi, Ragunandanpura, Pratapura and Bhojpura having highest area under *Aloe vera* cultivators finally selected for investigation.

For the study, both primary and secondary data were collected. Primary data were collected from *Aloe vera* cultivators on pre-structured and pre-tested schedule. The objectives of the study were primarily considered in preparing the schedule. After preparing schedule, actual field work was started and data were collected from selected growers through personal interview. It has ensured the supply of reliable data without any personal and social biases. The data were collected for five years from 2008 to 2012 especially for payback period.

Problems faced by the farmers :

Technical, infra-structural, economic and social constraints were studied in the study area.

Technical constraints :

Technical constraints means impediments or restraints pertaining to know-how or skill in the way of adoption of particular recommended production technology.

Infra-structural constraints :

It has been defined those impediments or restraints pertaining to organization in the way of adopting of particular recommended production technology and marketing operation.

Economic constraints :

It means the restraints pertaining to finance, profitable operation, in the way of adopting of particular recommended production technology and marketing operation.

Social constraints :

Social constraints means the impediments or restraints pertaining to society, habit and mental acceptance in the way of adopting of particular recommended production and marketing practices.

The interview schedule was specially prepared to find out the constraints. The constraints expressed by the respondents were categorized as technical, infrastructural, economic and social constraints on the basis of number of respondents facing particular constraint.

RESULTS AND DATA ANALYSIS :

The results obtained from the present investigation as well as relevant discussion have been summarized under following heads :

Problems faced by the *Alow vera* growers :

The problems responsible were divided into the following four categories:

Technical problems :

Technical constraints found were the lack of know-how or skill required for adoption of particular recommended production technology. The Table 1 shows technical problems in production of *Aloe vera*. The data reveals that the problem of lack of technical persons regarding *Aloe vera* cultivation was more acute on all size groups of farms. Cent per cent sample farmers reported to have faced these problems in study area. The sample farmers reported that the lack of technical knowledge are 75.00, 57.14 and 45.00 per cent of marginal, small and semi-medium farmers faced the problem, respectively.

Medium farmers did not face the problem related to lack of technical knowledge of *Aloe vera* cultivation, lack of recommended doses of manures of *Aloe vera* crop. About 33.33 per cent farmers reported that there

was lack of guidance of local administration for *Aloe vera* cultivation. Out of which 37.50, 38.09, 35.00 and 18.18 per cent marginal, small, semi- medium and medium farmers faced this problem, respectively

Aloe vera crop is labour intensive and requires both skilled and unskilled labour, other problems like lack of recommended dose of manures reported by 46.67 per cent of sample farmers. Out of which 75.00, 47.62 and 60.00 per cent marginal, small and semi-medium farmers faced this problem, respectively.

Infrastructural problems :

Infrastructural problems have been defined as problems pertaining to organization in production of *Aloe vera*. Table 2 shows 11 infrastructural problems in production of *Aloe vera*. The data reveals that the problem of scarcity of packing material and lack of processing units were more acute on all size of farms and cent per cent farmers were affected by these problems in the study area. About 35.00 per cent farmers reported that agriculture department does not provide proper guidance. 37.50, 42.86, 35.00 and 18.18 per cent marginal, small, semi-medium and medium farmers faced this problem, respectively. Difficulties in purchasing of agricultural inputs from market and co-operative societies were faced by 53.33 per cent of sample farmers. Category wise 50.00, 85.71 and 50.00 per cent of marginal, small and semi-medium reported this problem, respectively.

About 40.00 per cent of sample farmers reported that unavailability of inputs in sowing time. Among them 25.00, 61.90, 30.00 and 27.27 per cent marginal, small, semi-medium and medium farmers faced this problem, respectively. About 3.33 per cent of sample farmers faced the problem of distance from market. Out of which 25.00 per cent of marginal farmers faced this problem. Small, semi-medium and medium farmers did not face this problem. About 88.33 per cent of sample farmers reported shortage of labourers. Category wise 75.00, 95.24, 90.00 and 81.82 per cent of marginal, small, semi-medium and medium farmers reported the problem of shortage of labourers, respectively.

73.33 per cent of sample farmers reported problem

Table 1: Technical problem in production of *Aloe vera* faced by the sample farmers (Total number of *Aloe vera* growers = 60)

Sr. No.	Problems	Number of farmers reporting the problems				
		Marginal (n_1 = 8)	Small (n_2 =21)	Semi-medium (n_3= 20)	Medium (n_4 = 11)	All farmers (n = 60)
1.	Lack of technical knowledge of *Aloe vera* cultivation	6 (75.00)	12 (57.14)	9 (45.00)	-	27 (45.00)
2.	Lack of guidance of local administration for *Aloe vera* cultivation	3 (37.50)	8 (38.09)	7 (35.00)	2 (18.18)	20 (33.33)
3.	Lack of technical persons regarding *Aloe vera* cultivation	8 (100.00)	21 (100.00)	20 (100.00)	11 (100.00)	60 (60.00)
4.	Lack of recommended doses of manures	6 (75.00)	10 (47.62)	12 (60.00)	-	28 (46.67)

Figures in parentheses are the percentage of total number of farmers (N) in each category

Table 2 : Infrastructural problems in production of *Aloe vera* faced by the sample farmers (Total number of *Aloe vera* growers = 60)

Sr. No.	Problems	Number of farmers reporting the problems				
		Marginal (n_1 = 8)	Small (n_2 =21)	Semi-medium (n_3 = 20)	Medium (n_4 = 11)	All farmers (n = 60)
1.	Lack of proper guidance by agricultural department	3 (37.50)	9 (42.86)	7 (35.00)	2 (18.18)	21 (35.00)
2.	Difficulties in purchasing of agricultural inputs from market and co-operative societies	4 (50.00)	18 (85.17)	10 (50.00)	-	32 (53.33)
3.	Unavailability of inputs in sowing time	2 (25.00)	13 (61.90)	6 (30.00)	3 (27.27)	24 (40.00)
4.	Distance of market	2 (25.00)	-	-	-	2 (3.33)
5.	Shortage of labourers	6 (75.00)	20 (95.24)	18 (90.00)	9 (81.82)	53 (88.33)
6.	Scarcity of packing material	8 (100.00)	21 (100.00)	20 (100.00)	11 (100.00)	60 (100.00)
7.	Dominance of traders in market	4 (50.00)	14 (66.67)	16 (80.00)	10 (90.91)	44 (73.33)
8.	Lack of transportation means	7 (87.50)	19 (90.48)	17 (85.00)	9 (81.82)	52 (86.67)
9.	Lack of road facilities	5 (62.50)	15 (71.43)	13 (65.00)	7 (63.64)	40 (66.67)
10.	Lack of processing units	8 (100.00)	21 (100.00)	20 (100.00)	11 (100.00)	60 (100.00)
11.	Lack of storage facilities	4 (50.00)	7 (33.33)	9 (45.00)	6 (54.54)	26 (43.33)

Figures in parentheses are the percentage of total number of farmers (N) in each category

of dominance of traders. Out of which 50.00, 66.67, 80.00 and 90.91 per cent of marginal, small, semi-medium and medium farmers faced the problem of dominance of traders in market, respectively. The problem of lack of transportation means was reported by 86.67 per cent of sample farmers (87.50, 90.48, 85.00 and 81.82 % of marginal, small, semi-medium and medium farmers, respectively). Lack of road facilities was reported by 66.67 per cent of sample farmers category wise 62.50, 71.43, 65.00 and 63.64 per cent of marginal, small, semi-medium and medium farmers, respectively.The problem of lack of storage facilities was reported by 43.33 per cent of sample farmers (50.00, 33.33, 45.00 and 54.54 % of marginal, small, semi-medium and medium farmers in the study area, respectively).

Economic problems :

These problems related to the finance and profitable operations were found to be 8 in numbers Table 3. Economic problems included high cost of improved varieties, high cost of transportation of *Aloe vera* product, prices of *Aloe vera* were low, these were more acute faced by all sample farmers. Problems like lack of credit facilities reported by 53.33 per cent of sample farmers. Category wise 75.00, 52.38, 50.00 and 45.45 per cent of marginal, small, semi-medium and medium farmers, respectively. About 21.67 per cent of sample farmers (out of which 12.50, 14.29, 35.00 and 18.18 % of marginal, small, semi-medium and medium farmers, respectively) reported the problem of high cost of irrigation water. The problem of high cost of fencing boundary wall was faced by 40.00 per cent.Category wise 25.00, 38.09, 45.00 and 45.45 per cent of marginal, small, semi-medium and medium farmers, respectively.

About 31.67 per cent farmers (out of which 50.00 % of marginal, 38.10 % of small and 35.00 % of semi-medium) reported the problem of cost of marketing was very high, medium farmers did not face this problem.The problem like lack of timely sale of produce was faced by 56.67 of sample farmers. Among them 62.50, 61.90, 35.00 and 81.82 per cent of marginal, small, semi-medium and medium farmers faced this problem in the study area, respectively.

Social problems :

These problems related to social customs, habits and mental acceptance in the production of *Aloe vera* were included in this section. Table 4 revealed two social problems. Among these local leaders are less interested in the *Aloe vera* cultivation was more acute and faced by cent per cent sample farmers of all the farm size

Table 3 : Economic problems in production of *Aloe vera* faced by the sample farmers (Total number of *Aloe vera* growers = 60)

Sr. No.	Problems	Number of farmers reporting the problems				
		Marginal (n_1 = 8)	Small (n_2= 21)	Semi-medium (n_3 = 20)	Medium (n_4 = 11)	All farmers (n = 60)
1.	Lack of credit facilities	6 (75.00)	11 (52.38)	10 (50.00)	5 (45.45)	32 (53.33)
2.	High cost of irrigation water	1 (12.50)	3 (14.29)	7 (35.00)	2 (18.18)	13 (21.67)
3.	High cost of fencing boundary wall	2 (25.00)	8 (38.09)	9 (45.00)	5 (45.45)	24 (40.00)
4.	High cost improved varieties	8 (100.00)	21 (100.00)	20 (100.00)	11 (100.00)	60 (10.00)
5.	High cost of transportation of *Aloe vera* product	8 (10.00)	21 (100.00)	20 (100.00)	11 (100.00)	60 (10.00)
6.	Cost of marketing is very high	4 (50.00)	8 (38.10)	7 (35.00)	-	19 (31.67)
7.	Prices of *Aloe vera* are low	8 (100.00)	21 (100.00)	20 (100.00)	11 (100.00)	60 (100.00)
8.	Lack of timely sale	5 (62.50)	13 (61.90)	7 (35.00)	9 (81.82)	34 (56.67)

Figures in parentheses are the percentage of total number of farmers (N) in each category

Table 4 : Social problems in production of *Aloe vera* crop faced by the sample farmers (Total number of *Aloe vera* growers = 60)

Sr. No.	Problems	Number of farmers reporting the problems				
		Marginal (n_1 = 8)	Small (n_2 = 21)	Semi-medium (n_3 = 20)	Medium (n_4 = 11)	All farmers (n = 60)
1.	Fear of thieves and stray animal prohibits farmers to take *Aloe vera* crop	4 (50.00)	12 (57.11)	9 (45.00)	3 (27.27)	28 (46.67)
2.	Local leaders are less interested in the *Aloe vera* cultivation	8 (100.00)	21 (100.00)	20 (100.00)	11 (100.00)	60 (100.00)

Figures in parentheses are the percentage of total number of farmers (N) in each category

groups in the study area. About 46.67 per cent of sample farmers reported the problem of fear of thieves and stray animal were faced by farmers to restrict them to take of *Aloe vera* cultivation. Out of which 50.00 per cent of marginal, 57.11 per cent of small, 45.00 per cent of semi-medium and 27.27 per cent of medium farmers faced this problem. More or less similar results were also obtained by Chand *et al.* (2002); Khunt *et al.* (2003); Netali *et al*. (1990); Pawar and Hange (2008); Ram *et al.* (2012) and Singh and Sharma (2011).

Conclusion :

The most important problems reported by the farmers were lack of technical persons regarding *Aloe vera* cultivation, scarcity of packing material, lack of processing unit, high cost of improved varieties, high cost of transportation of *Aloe vera* product, prices of *Aloe vera* and less interested to local leaders in the *Aloe vera* cultivation.

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