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Assessing Information Need of the Stakeholders on Good Agricultural Practices (GAP) for Grapes

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ABSTRACT

An effort was made to assess the information need of the farmers and other related stakeholders on Good Agricultural Practices (GAP) for Grapes. The study was conducted in Nashik and Sangli districts of Maharashtra. Total 70 farmers, 35 from each of the two districts along with 19 scientists of National Research Centre (NRC) for Grapes and Krishi Vigyan Kendras (KVK), 30 line department staff and 20 exporters were selected as respondents to carry out the study. Interview schedule was prepared and administered to the farmers and related stakeholders for assessing their information need on GAP for grapes. Significant difference was found in the information level of GAP practicing and non-GAP practicing farmers. On an average 84 per cent GAP practicing farmers were found to have information on various aspects of GAP while only 45.73 per cent farmers had information on different aspects of GAP on an average. Information on certifying agencies and potential economic benefit of GAP ranked first as perceived information need of the farmers while use of chemicals and sources of credit ranked second and third, respectively. However, the other stakeholders perceived selection of variety to be the most vital information to be disseminated to farmers followed by procedure of certification and criteria of GAP. It was found that for both groups of farmers, interpersonal networks ranked first as source of information. The study implied that significant information gap existed among the farmers on GAP which needs to be bridged up by appropriate extension intervention.

Key words: GAP, Grapes, information need, interpersonal network

INTRODUCTION

The global scenario of agriculture is changing rapidly. Everyday new concepts and technologies are emerging exposing farmers to a new set of challenges and opportunities. Agriculture is no more looked upon as a mere way of earning minimal livelihood but as a promising enterprise in the era of liberalization. In order to survive in growing competition in market farmers need to be empowered. Information in the inevitable weapon for their empowerment as information leads to efficient and productive decision making. Knowledge and information are basic elements of food security and are indispensable for enabling rural development and bringing socio-economic change as well (*Munyua, 2000*). In today's world, every single piece of information is power and attempt is to be taken to keep our farmers informed and updated continually about the agricultural phenomena taking place worldwide. This will open up wide scope for Indian farmers to make their stand in the world stage of agriculture and also create an avenue for flow of foreign exchange into the national economy.

One of the chief concerns in world food market today is food safety. Food safety and quality have been gaining considerable importance at the national and international level. Consumers' willingness to pay for certified food in European market is also increasing (*Tranter et al. 2009)*. These food safety standards require a common language for all geographically dispersed stakeholders around the world in order to make the global trade smooth. To set a common understanding about the standards FAO came up with certain globally accepted control and compliance systems and standards for measures of food safety like Good Agricultural Practices (GAP). According to *FAO (2003),* GAP are the practices that address environmental, economic and social sustainability for on-farm processes and result in safe and quality food and non-food agricultural products. Indian farmers are yet to be familiar with these measures that can help them to gain consumer trust and reputation in international market and also to avoid the non-tariff barriers set by World Trade Organization (WTO).

Though GAP is equally important for all crops it is inevitable for fresh produce cultivation due to their highly perishable nature and growing demand in market. Indian fresh food sector has yet not been able to realize its full potential in terms of export market share. India's export to European and American market is still very less due to not complying with stringent quality standards (*Gangaram, 2014)*. Some of the challenges relate to lack of knowledge on food safety standards, quality compliances and GAP. *Asandhi et al. (2006)* found positive response from the

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farmers practicing GAP who were reported to be benefited from practicing GAP. The major problems for not adopting GAP are insufficient information on pesticide and fertilizer management, lack of hygiene awareness, knowledge on food safety, lack of information on GAP guidelines *etc.*

Care should be taken to promote awareness among Indian farmers about these quality control standards at least for those crops which have high export potential. Grapes (*Vitis* sp.) cultivation is one of such most remunerative farming enterprises in India. There is a phenomenal rise in export of grapes from India from 54,049.87 tonnes during 2005-2006 to 192616.91tonnes in 2013-2014 valuing ₹ 1666.47 crores *(APEDA, 2014).* In spite of having technological knowhow, suitable weather for grapes cultivation, sufficient research flow and other potential to expand in global market, Indian grape growers often fail to adhere to the international standards. In 2010, the European Union rejected Indian table grape consignments as traces of chlormequat chloride, a plant growth regulator were found causing losses of about ₹300 crores for the farmers. From the past experiences it is evident that lack of awareness and knowledge regarding GAP is a major restricting factor for profitability of grapes cultivation. Adoption of GAP can help them to grow as per the international standards and it depends on improving farmers' access to information on GAP. For all these, only technological breakthrough is not enough, but farmers' awareness and education are important which can facilitate capacity building of the farmers. Besides, other stakeholders in the grapes enterprise are also to be made well aware about GAP so that they can guide the farmers in right track.

Information is basic component in any development activity and is useful only if it is available and user has the access to it *(CTA, 1999).*To design proper mechanism for information dissemination the preliminary requirement is to measure the existing level of information that the stakeholders hold on GAP. The existing situation, past experiences and present needs of potential adopters have significant role to play in the rate of adoption of an innovation *(Rogers, 1962).* Therefore, for any successful extension intervention thorough understanding of the client is the first and foremost requirement. Further, the training programmes and other educational instruments can be formulated based on the information need of the client group on GAP. Under these circumstances this paper aims to assess the present information level of the stakeholders and also to find out their perceived information need on GAP for grapes. Based on the statement of the problem a hypothesis is established that there is a significant difference level of information on GAP for grapes among the grapes growing farmers. The hypothesis is tested using appropriate statistical tools for the purpose of the study.

METHODOLOGY

The study was conducted in Maharashtra state purposively because Maharashtra is the largest producer of grapes (80%) as well as leading exporter of grapes (99%) in the country. Area under grapes in Maharashtra is 86 thousand ha out of 118.7 thousand ha area of India and production is around 2050 thousand MT out of all India production of 2585.30 thousand MT *(NHB, 2013).* The study was conducted in two districts of Maharashtra, namely Nashik and Sangli which are at forefront with regard to grapes cultivation and production. Total area under cultivation of grapes in Nashik is around 0.5 lakh ha with a production of 10 lakh metric tonnes in 2013-14. The exports from Nashik also increased 10 times from 4,532 metric tonnes in 2003 to 48,465 metric tonnes in 2013 contributing around 70 per cent of Maharashtra's total grapes export. Similarly, the area under grapes cultivation in Sangli is 0.26 m ha; out of which, produce of around 2025 ha was exported in 2013-14. So, the stakeholders of this region were selected as the clientele of the study as they might have higher needs to deal with GAP for grapes. Thirty five grapes growers from each of the two districts, Nashik and Sangli were selected randomly. Twenty two professionals from each of the two districts comprising seven KVK scientists and fifteen officials from line departments were selected purposively. Twenty exporters engaged in grapes export in Maharashtra were also selected purposively for the study. Apart from this, five scientists from National Research Centre for Grapes (NRCG) were selected randomly. Thus, the total number of respondents was one hundred and thirty nine. In this study, information need has been studied as the gap between the desired level and the actual level of information of the stakeholders regarding GAP for grapes. For assessing information need on GAP for grapes, schedules were prepared separately for farmers and non-farmer stakeholders. The types of information under study included information on GAP, information on criteria and facilities required for grapes export, market information, services and facilities and weather Information. To assess the information need of the respondents, they were asked to rank the list of information given in schedule according to their priority. A score of 1 was given against most important information, 2 against second most important information so on and so forth. Responses were also taken from the farmers against the statements of 'I know; and 'I don't know' for each of the information in the list. Score 1 was given for 'I know' while 0 was given for 'I don't know'

response. Frequency of responses for both the statements was calculated for each of the information.

RESULT AND DISCUSSION

It was investigated that all the GAP practicing farmers possessed general information on GAP while around 85 per cent of non-GAP practicing farmers were also having general idea of GAP (Table 1). More than 90 per cent of GAP practicing famers were found to have access to information on criteria of GAP, procedure of certification, export criteria, export procedure, selection of varieties, planting methods & materials, pest & disease management and use of chemicals. Even among the non-GAP practicing farmers more than 70 per cent had access to information on criteria of GAP, potential economic benefit of GAP, disease & pest management. However, less than 30 per cent of non-GAP practicing farmers were found to have information on shipment for export, storage, post-harvest care, packaging, grading and infrastructure. On an average 84 per cent GAP practicing farmers were found to have information on various aspects of GAP while only 45.73 per cent farmers had information on different aspects of GAP on an average.

Table 1: Existing level of information of the farmers

n=70)

Information	Number of GAP practicing farmers (n_1=43)	%	Number of non-GAP practicing farmers (n_2=27)	%
General idea about GAP	43	100.0	23	85.20
Criteria of GAP	40	93.02	19	70.37
Economic benefit of GAP	38	88.37	17	73.91
Procedure of certification	39	90.70	14	60.87
Certifying agencies	35	81.40	10	37.03
Name of related institutions	29	67.44	09	31.03
Marketing facilities	34	79.07	10	37.03
Export criteria	40	93.02	15	55.56
Export procedure	39	90.70	11	40.74
Sources of credit	37	86.05	09	33.33
Inputs	38	88.37	14	51.85
Infrastructure	37	86.05	08	29.63
Selection of varieties	40	93.02	16	59.30
Planting method and materials	39	90.70	10	37.03
Inter cultural operations	35	81.40	12	44.44
Water and nutrient management	38	88.37	16	59.30
Use of chemicals	39	90.70	18	66.67
Disease and pest management	41	95.35	19	70.37
Harvesting	32	74.42	12	44.44
Grading	30	69.77	08	29.63
Transporting	28	65.12	09	33.33
Packaging	37	86.05	08	29.33
Post-harvest care	32	74.42	07	25.93
Storage	28	65.12	06	22.22
Shipment for export	35	81.4	04	14.82

In order to compare the information level of GAP practicing and non-practicing farmers, Mann Whitney U test was performed. The test result showed that there was significant difference in information level between GAP practicing and non-practicing farmers in case of both the districts under study (Table 2). Thus, the null hypothesis of no significant difference was rejected.

Table 2: Statistical significance of difference in information level of farmers

Category	Value	
	Nashik	Sangli
Mann-Whitney U	.011*	.007*
Z	-2.236	-2.236
Asymp. Sig. (2-tailed)	.025	.025

* Significant at 5 per cent level of significance

While investigating the preferred sources of information of the farmers it was found that for both GAP practicing and non-GAP practicing farmers- neighbours, friends, fellow farmers ranked first as source of information. However, related organizations or agencies ranked second for the GAP practicing farmers while only 14.82 per cent of non-GAP practicing farmers reported to access information through related institutions (Table 3).

Table 3: Sources of Information for GAP growers

n=70

Sources of information	Number of Gap practicing farmers (n=43)	%	Rank	Number of non-GAP practicing farmers (n=27)	%	Rank
TV	30	69.77	V	10	37.04	III
Radio	35	81.4	III	19	70.37	II
News Paper	32	74.42	IV	8	29.63	V
Agency/Organization	41	95.4	II	4	14.82	VI
Neighbour/friends/ other farmers	42	97.67	I	25	92.6	I
Others	20	46.51	VI	9	33.33	IV

Further coefficient of concordance was also calculated (Kendall's w) to find out if significant correlation existed between ranking of the sources of information by farmers and other stakeholders (Table 4).

The test result at 0.05 per cent level of significance depicted no significant agreement between two groups regarding ranking of parameters. Thus it was concluded that there was difference in preferences of the two respondent categories about various sources of information.

Table 4. Statistical significance of concordance among respondents

Category	Values
Coefficient of concordance (w)	0.50^{NS}
Chi square (x^2)	5.05
Df	5
p value	0.41
Asymp. Sig. (2-tailed)	.025

NS: Not Significant

Attempt was taken to make overall ranking of information need based on responses by the farmers and other related stakeholders. Total scores were calculated by summing up the rank values of the particular information statement for all the respondents. Then mean scores were calculated by dividing total score by total number of respondents.

Low scores indicated higher ranks. The top ten information need as responded by the respondents has been summarized in Table 6 and Table 7. According to the farmers, certifying agencies and potential economic benefit of GAP ranked first while use of chemicals and sources of credit ranked second and third, respectively.

The other stakeholders perceived selection of varieties to be the most important information that needs to be disseminated to farmers followed by procedure of certification and criteria of GAP.

Table 6: Overall rank of information need of farmers

Information need	Mean score	Rank
Potential economic benefit of GAP for grapes	1.81	I
Certifying agencies	1.81	I
Use of chemicals	1.97	II
Sources of credit	2.24	III
Criteria of GAP	2.47	IV
Procedure of certification	2.47	IV
Marketing facilities	2.47	IV
Export criteria	2.57	V
General idea about GAP	2.57	VI
Inputs	2.67	VII
Name of related institutions	2.77	VIII
Selection of varieties	2.77	VIII
Export procedure	2.87	IX
Disease and pest management	2.87	IX
Grading	2.87	IX
Planting method and materials	3.00	X
Post-harvest care	3.00	X

Table 7: Overall rank of information need of stakeholders

Information need	Mean score	Rank
Selection of varieties	2.03	I
Procedure of certification	2.04	II
Criteria of GAP	2.27	III
Disease and pest management	2.53	IV
Potential economic benefit of GAP for grapes	2.57	V
General idea about GAP	2.6	VI
Certifying agencies	2.7	VII
Export procedure	2.81	VIII
Export criteria	2.90	IX
Name of related institutions	2.96	X

To find out level of agreement among farmers and other stakeholders regarding their perceived information need, coefficient of concordance (Kendall's w) was worked out (Table 8). The test result at 0.05 per cent level of significance revealed no significant correlation between two groups regarding ranking of information need. Thus, it was concluded that there was difference in perception of the two respondent categories about information need on GAP for grapes. This implies that the related stakeholders need to be aware of the farmers' need for information in order to meet their expectation regarding information dissemination on GAP.

Table 8: Statistical significance of concordance among respondents

Category	Values
Coefficient of concordance (w)	0.43^{NS}
Chi square (x^2)	20.65
Df	24
p value	0.659
Asymp. Sig. (2-tailed)	.025

NS: Not Significant

Similar study was done by *Babu (2005)* who found that market information, information on input price, availability of facilities, management of disease and pest, information on crop insurance were most preferred areas as perceived by farmers in which they wanted information through several e-media. *Kaini (2003)* in his study opined that rural communities need information mostly on input supply, new technologies, credit facilities, weather forecast and market prices of their produce.

CONCLUSION

It could be concluded that substantial amount of information gap existed among the grape growers on GAP especially on specific areas like post-harvest care, facilities for storage and transport, export procedure *etc*. Significant difference was also found in the information

level of GAP practicing and non-GAP practicing farmers. Appropriate extension measures are to be taken immediately to bridge up this information gap. It was also found that institutional sources of information were least preferred by the non-GAP practicing farmers that indicates lack of reach of the related institutes to them. They are to be dealt with more care by these institutes and as well as extension agencies since they are in greater need of information on GAP. If information in agriculture is to be beneficial to farmers it has to be tailored to local agro-ecological and socio-economic circumstances *(Swaminathan, 1993).* The stakeholders responsible for dissemination of information should also be aware of the felt information need of the farmers. Though almost everyone was aware of GAP and its importance in general, the practical areas like its economic benefit, certification procedures, certifying agencies, credit access were the areas in which respondents expressed their felt information need. Only broad theoretical concept is not enough, but specific practical information are to be disseminated to the farmers in order to make them practice GAP in reality. Proper information dissemination systems are to be formulated immediately to keep the farming community and all other related stakeholders informed about GAP and other export criteria in order to pave a way for the country to hold its position high in the global agriculture market.

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