ADOPTION OF FRUITS AND VEGETABLE PRESERVATION TECHNOLOGY BY FARM WOMEN OF SURAT DISTRICT

G. J. Bhimani[1], M. R. Prajapati[2] and H. C. Parmar[3]

1,2 &3 Scientist, Krishi Vigyan Kendra, Navsari Agricultural University,Surat - 395 007
Email: gj2kvk@yahoo.com

ABSTRACT

India contributes a large quantity of fruits and vegetables in the worldwide production. In 2014-15, the production of fruits and vegetables was 88.98 million tons and 162.89 million tons respectively. Among this, the contribution of Gujarat was 163.6 tons for both fruits and vegetables (Anonymous, 2014). It is quite impossible for farmers to sale such a large quantity of production. To overcome this issue, adoption of value addition techniques can be a best option. It helps in decreasing waste as well as to get smart earnings to the farmers. They have little knowledge about processing and preservation technologies. Keeping this in mind, Krishi Vigyan Kendra, Surat, Navsari Agricultural University had framed training programmes on processing and preservation of fruits and vegetables in Surat district. In that 200 Farmers Interested Groups members were given a practical knowledge about fruits processing and preservations techniques. Out of this group, randomly 100 members were selected and information was collected with the help of questionnaire. On the basis of collected data, it was revealed that 47 per cent of women prepared tomato ketchup, 34 per cent prepared tuti-futi, 22 percent mix fruit jam and 12 percent pineapple squash at home. Economically, it has helped these women to reduce the expenses in purchase of these food products from the markets.

Keywords: *processing, technology, preservation, value addition*

INTRODUCTION

India has been considered as the second largest producer of fruits and vegetables after China. Therefore we can call India as a fruit and vegetable basket of world. This becomes possible due to agro climatic variations, enormous biodiversity, fertile soil and a large cultivable area. If we look at the world data of production, India contributes for 16 per cent of world production of vegetables and 11per cent of world's fruit production. On the other hand, India is lacking skilled manpower, storage facilities, and inadequate post harvest management. Due to these reasons, only 2per cent of horticultural crops are processed, 4per cent is exported and 22 per cent get wasted in the market chain (Amarasinghe *et al.,* 2008). Being a field worker, we can play a major role in learning skills to farmers so that they can process and preserve their crops at some extents and get economical benefits from it. Keeping this thing in mind, we had planned a present study with following objective.

OBJECTIVES

(1) To study the response of farm women regarding adoption of fruits and vegetable preservation technology

(2) To evaluate the economic benefit of adopted technologies

METHODOLOGY

The study was conducted in Surat district. Initially, 200 FIG members we given training on various aspects of fruits and vegetable preservation and processing technologies. Out of this group, 100 FIG members were selected. Adoption of preservation and processing technologies were evaluated by questionnaires and telephonic talk with them. The obtained data were tabulated, analyzed and interpreted at the end of the study.

RESULTS AND DISCUSSION

Personal Profile of the respondents

The personal information on the age, education level, occupation and annual income were collected for each participant which is presented in the table 1 to 4.

Table 1: Distribution of respondents based on age

(n= 100)

Sr. No.	Age	Per cent
1	Young (Below 30 years)	36
2	Middle aged (30-50 years)	50
3	Old (above 50 years)	14

It is evident from Table 1 that majority (50 per cent) of the respondents belonged to the middle age (30-50 years) group followed by young group (below 30 years) and old (above 50 years).The young women having the responsibility of children and therefore they need to stay at home might be the cause of lesser number of young woman participants in the training. The older woman could not carry out the work because of their low physical ability and low interest might be the reason for very less number of old participants in the training. Thus the maximum numbers 50 women of middle age group were participated. This results also supported by Dubey *et al*. (2008) and Soni *et al.* (2016).

Table 2: Distribution of respondents based on education

(n= 100)

Sr. No.	Levels of education	Per cent
1	No. of formal education	06
2	Primary education	35
3	Secondary education	30
4	Higher secondary education	16
5	Graduation and above	11

With regards to the education of respondents, the findings revealed that 35 per cents had primary education followed by 30 percent with secondary level of education. Only 6 percent had a formal education. The data suggest that majority woman who had middle level education *i.e*. primary and secondary education opted for training as they might be interested to gain knowledge and utilize for self development similar results also agreement by earlier worker Dubey *et al*. (2008) and Soni *et al.* (2016).

Table 3: Distribution of respondents based on occupation

(n= 100)

Sr. No.	Occupation	Per cent
1	Agriculture + Animal husbandry	66
2	Labour	08
3	Homemakers	22
4	Government job/business etc.	04

Data in Table 3 revealed that majority *i.e*. 66 per cent of the respondents were belonged to agriculture and animal husbandry followed by homemakers (22 per cent) and only few (4 per cent) members had government job/business. The respondent having agriculture has also grown fruits and vegetable in their kitchen garden and extra land. So that they have plenty of available fruits and vegetables for doing value addition thus thought of to start household unit for value addition in tomato and papaya after training might be the reason for their great number of participation. This record also agreement with the earlier worker Soni *et al*. (2016).

Table 4: Distribution of respondents based on annual income (n= 100)

Sr. No.	Annual Income	Per cent
1	Up to ₹ 1,00,000/-	23
2	₹ 1,00,000/- to ₹ 2,00,000/-	52
3	Above ₹ 2,00,000/-	25

As shown in the Table 4, 23 per cent of the respondents had a annual income up to ₹ 1,00,000, 52 per cent respondents had income between ₹ 1,00,000/- to ₹ 2,00,000/- annually. While, 25 per cent of farmers interest group members had annual income above ₹ 2,00,000/. Respondent having middle income has capable to some expenditure and more interest in early establishment of home based value addition unit therefore the numbers was higher.

Table 5 :Source of information of the respondents regarding fruit and vegetable preservation technologies (n= 100)

Sr. No.	Source of information	Per cent
A	**Personal locality**	
1	Family members	04
2	Neighbors	06
3	Friends/relatives	06
4	SHG members	28
B	**Personal cosmopolite**	
1	Gram Sevak	03
2	SAU Scientists	24
3	KVK-Scientists	43
C	**Mass contact**	
1	News paper	07
2	Radio	08
3	Television	39
4	Magazine	05
5	Internet	09
6	Whats App	36

The data from Table 5 suggest that 43 per cent of the respondents had received the information from the Krishi Vigyan Kendra - Scientists followed by television *i.e*. 39 per cent. Apart from these, social media like whats app had

greatly spread these technologies among people. The highest respondent shows that the training given at Krishi Vigyan Kendra, Surat had positive effect on the source of information and knowledge gain on value addition technology of tomato, papaiya and others. That might be useful trainees to increase the nutritional status of their family members by preparing value added products.

Table 6 : Adoption rate of fruits and vegetables preservation technology n= 100

Sr. No.	Preservation Technology	Per cent	Rank
1	Preparation of mix fruit jam	22	III
2	Preparation of papaya tuti-fruiti	34	II
3	Preparation of tomato ketchup	47	I
4	Preparation of pineapple squash	12	IV

Majority of the respondents *i.e*. 47 per cent adopt the preparation of tomato ketch up technology followed by 34 per cent preparation of papaya tuti-fruiti. The least per cent of the respondents had prepared mixed fruits jam. The higher per cent of adaptation depends on availability of tomato and papaya in local market as well as at their home agriculture.

Table 7: Constraints faced by respondents in adoption of fruits and vegetables preservation technologies:

(n= 100)

Sr. No.	Constraints	Per cent	Rank
1	Lack of availability of raw material	54	II
2	Lack of Interest	27	III
3	Lack of awareness regarding harmful health effects of adulteration and unhygienic food	61	I
4	Lack of knowledge regarding accurate procedures of particular food product	12	V
5	High cost of fruits and vegetables	24	IV

Constraints play a vital role in adoption as well as transfer of technology. To obtain better result of any type of services it is very essential to minimize the constraints. Data in Table 7 indicates that, 61 per cent of the respondents were unaware regarding adulteration. In rural area, people choose the processed food products and snacks which are cheap. They don't know about the health hazard caused by these unhygienic and adulterated food products. Additionally, 54 per cent respondent had said that raw materials are not available, 27 per cent said that they did not had interest in the task and 24 per cent said that fruits and vegetable are too costly to purchase. On the bases of the results its prove that inadequate knowledge regarding adulteration and lack of awareness about the health hazard caused by these unhygienic and adulterated food products. The training might be helpful to establish tomato and papaya processing industry at household level and become cottage industry entrepreneur and improve knowledge regarding health hazards form food adulteration. Similar discussion also reported by Sharma *et al.* (2013).

CONCLUSION

As per the above data, it can be concluded that majority of the respondents were middle aged and completed only primary school educated. Majority of the respondents were engaged in agriculture and animal husbandry activities and received the information about technologies from the KVK scientists and followed by television. In adoption of technology, major respondents prefer to make tomato ketch up followed by tuti-fruti, mixed fruit jam and Pineapple squash. The major constrain faced by respondents was lack of knowledge about health hazards which are caused by adulterated and unhygienic food. This whole study suggest that in rural area knowledge of food hazards and hygiene should not be adequate so that they want to know about the nutritional, health and economical benefits of consuming food products which are processed at home. it could be employed that more and more such training programme in food and vegetable preservation, food hazard and hygiene may be organized which would be benefited to farm women toempower themselves.

REFERENCES

Amarasinghe, U. A., Shah, T., Turral, H. and Anand, B. K. (2007). India's water future to 2025-2050: Business-as-usual scenario and deviations. Colombo, Sri Lanka: International Water Management Institute (IWMI). 47p. (IWMI Research Report 123).

Anonymous, (2014). Handbook on Horticulture Statistics, Horticulture division, Ministry of Agriculture, Department of agriculture and cooperation, GOI, New Delhi, India.

Chaudhary, M.V. and Khodifad, P. B. (2017) Constraints faced by the mango growers in adoption of good agriculture practices of mango crop. *Guj. J. Ext. Edu.* 28(1):55-57.

Dubey, A. K., Srivastava, J. P., Singh, R. P. and Sharma, V. K. (2008). Impact of KVK programme on socioeconomic status and knowledge of trainees in Allahabad district. *Indian Res. J. Ext.Edu*., 8(283): 60-61.

Ghasura, R.S., Sheikh, A.S. and Aswar, B.K. (2017) Knowledge and adoption behaviour of poultry farm entrepreneurs in Banaskantha district. *Guj. J. Ext. Edu.* 28(2):228-230.

Parmar, K.M., Dodiya, H.D. and Patel, S.R. (2017) Constraints faced by farmers in adoption of rose cultivation. Guj. J. Ext. Edu. 28(1):98-99.

Sharma, P., Singh, G. P. and Jha, S. K. (2013). Impact of training programme on knowledge and adoption of preservation technologies among farm women: a comparative study. *Indian Res. J. Ext. Edu.*, 13(1): 96-100.

Soni, A. N., Soni, D. N. and C. K. Timbadia (2016). Impact of training on knowledge level of participants regarding value addition in Papaiya. *J. Ext. Edu*. 27(2): 126-129.

Soni, A. N., Verma, P. D. and Soni, D. N. (2018). Adoption of fruits and vegetable preservation technology by tribal farm women of tapi district. *Guj. J. Ext. Edu*. 29(1): 9-15.

Received : June 2019 : Accepted : September 2019