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Follow Up Study on "Empowerment of Rural Women through Mango Preservation Technology"

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Abstract:

The results of the study revealed that rural women were seasonally involved in mango preservation technology. Most of them prepared and preserved various products for household consumption to feed their family members and children. A few of the respondents were found in preparing the products at home level and also involved in the business in their locality with limited funds. The study further demonstrated that rural women so equipped with training/knowledge were working as master trainer and giving trainings to the local farmer women in their vicinity. A few farmer respondents were not involved in preparing of mango products for the marketing due to lack of funds and lack of marketing facility in their vicinity. It was further observed that local farmer women were making the products particularly pickle formation due to easy process for their regular home needs and the associated living area. Production of Jams, Pickles, Muraba (Preserve), Chutney and Fruit Juices were specially prepared at home level during the mango season. Majority of the respondents and house wives also indicated to be involved in the marketing business but due to poverty they could not afford to purchase adequate

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raw materials and small equipment for the preparation of the products.

As a follow up to the findings of the study, it is proposed to proceed as follows to alleviate poverty in rural Sindh vis-a-vis Pakistan. Trainings on mango production technology may be organized to train more farmer women and house wives. Door step trainings be organized for those women who either cannot go outside due to religious PARDA system local customs and traditions or having small children/infants.

Key words: Pickle, Farmer women, Mango products, Preservation technology.

1. Introduction

Mango is known as a King of fruit and ranked as second most important fruit crop of the country with respect to area and production (Asif *et al*., 2002). Advancement in preparation of mango preservation technology to produce superior quality and adequate mango products could be a valuable asset leading to a better use of the fruit and also to alleviation of poverty in the rural regions of the developing countries and more so in Pakistan. The products being so developed must have consumer acceptance which is mostly dependent on color (Crisosto *et al.,* 2003; Ulloa *et al*., 2008) and the perception of sweetness and flavor of the product which usually evokes emotional feelings in humans (Bayarri *et al.,* 2001).

In many developing countries, agriculture still holds the key to curtail the poverty through supplementation of livelihoods. The diverse challenges for the rural poor however, have continued to grow. These include prospective conflicts over increasing food yield, availability of secure water resources and the largely unpredictable long-term effects of climate modification due to the greenhouse effect, the dimension of which may compound existing challenges to produce yet more.

In attempting to deal with these issues, the importance of trainings cannot be underestimated. The skills to improve productivity, increase adaptability to deal with change and crises, and facilitate the diversification of livelihoods to manage risks are at a premium in rural areas. In many cases, these skills have become the object of survival in rural areas of the developing nations. Since rural women are deeply involved in many aspects of rural life in these areas, their traditional knowledge systems have become more complex and holistic which cannot be transformed easily in much shorter period of time. Therefore, the provision of the Skills effectively is one of the central challenges of rural development as it has not always been easily satisfied because of the contextual factors that prevent small farmers from accessing and applying training skills more effectively and the issue is not appropriately addressed.

Value addition in these circumstances helps to widen market scope and reduce post-harvest losses. It also gives the product a higher value. Therefore, the advancement in preservation technology to produce better quality and acceptable mango products could be beneficial, leading to the better utilization of the fruit on one hand and poverty alleviation in the rural Pakistan on the other. It will ultimately lead to transformation of rural landscape altogether.

For achievement of above landscape, the skilled trainings and subsequent feedback is important to develop learners' competence and confidence at all stages of their careers leading to entrepreneurship at small scale. The Institute of Food Sciences and Technology had previously organized 12 different training programs for rural women and men in which more than 700 farmer women and 200 men have been trained on various aspects of processing and preservation of various fruits and vegetables, baking science and technology. These included two extensive trainings on mango processing

and preservation techniques at IFST, Sindh Agriculture University, Tandojam.

The ASLP funded the project to conduct follow up study of the previous trained rural women in the Mango Preservation Technology. Therefore the study was designed to identify women entrepreneurship working with the related communities in rural areas. The Follow up study is also necessary to receive the information regarding effectiveness of the trainings which are given to rural women. Trainings are mainly based on different food preservation technologies through which food can be preserved by making different products and marketing at local levels and to nearby markets to generate some income and thereby alleviate poverty. The communication and follow up is vitally important to the project strategy for the achievement of these goals. Through career developing women associated with mango preservation technology, the follow up study was embarked upon with The following objectives.

1.1. Objectives of the Study

i) To identify the women entrepreneurs involved in mango preservation technology.
ii) To identify the rural women with relevant knowledge and their success stories and get feedback following the training.

2. Methodology

To achieve the above objectives, the methodology was designed to collect the information from the trained women for which a comprehensive questionnaire was developed to collect the data from the respondents. The questionnaire was pre-tested in the field and also reviewed by the foreign experts. The questionnaire was finalized after incorporation of valuable suggestions given by the experts. Finally, the team comprising

author and his team reviewed and finalized the questionnaire for data collection.

The survey was conducted with the help of two enumerators along with author and two co-authors. The various villages of the rural farmer women who were previously trained on mango processing and preservation techniques at Institute of Food Sciences and Technology, Sindh Agriculture University Tandojam were personally interviewed at their home/ work place. The knowledge of trained rural women was assessed through structured questionnaire and their opinions were recorded.

2.1. Assessment of Survey

In the training held in the year 2010, 45 women were trained at the IFST were contacted, it was found that 17 women out of 45 got married and moved to other provinces and the team was unable to contact them due to non-availability of their new addresses. Therefore, it was decided to include the women of earlier training held in 2008 on similar aspects in which 30 women were trained. They were then contacted and included and finally 48 women were included in the study.

3. Results and Discussion

3.1. Locations / locality of the respondents

The locations of 48 womens who had been trained at IFST in the year 2008 and 2010 is presented in Figure-1. The data reflected that 20 women (43%) belong to Hyderabad district, 2 (4%) Karachi, 4 (9%) Dadu, 2 (4%) Tandoallahyar, 3 (6%) Badin, 2 (4%) Tharparkar, 6 (13%) Mirpurkhas, 6 (13%) Nousherro Feroze and 2 (4%) from Matiari district of Sindh Province.

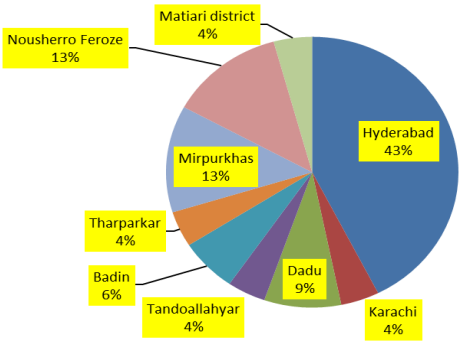

Figure 1. District wise information of the respondents

3.2. Personal profile of the respondents

3.2.1 Age of the respondents

Data regarding age of the respondents (Figure-2) revealed that most of the trainees were in between 15 to 30 years (66.67%) with an average age of 23 years. 27.1% were in between 31 to 44 years with average of 36 where as 4.2% were in between 46 to 60 years and 2.1% of the respondents were above 60 years old.

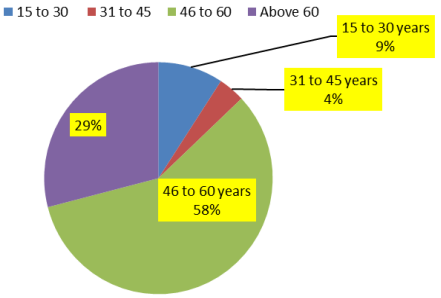

Figure 2. Age of the respondents

3.2.2. Education level of the respondents

The education level of 48 respondents is shown in Figure-3 which reflects that 14.6% were totally illiterate, 8.33% had received primary education (up to V), 8.33% received education

up to middle class, 8.33% secondary, 14.6 % were up to XII and 45.8% had received education above XII standard.

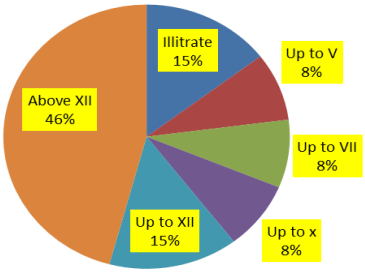

Figure 3. Education level of the respondents

3.2.3. Marital Status of the Respondents

Data regarding marital status of the respondents have been provided in figure-4. The data reflected that 47.92% respondents were unmarried (single), 45.83% were married, 4.17% were widowed and only 2.08% respondents were divorced.

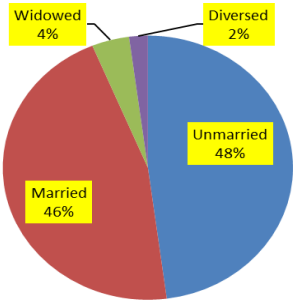

Figure 4. Marital status of the respondents

3.2.4. Monthly Income of the Household Head of the Respondents

The data reflected in Figure-5 indicated that majority of the respondents belonged to poor families ie. 36, whose household had insufficient income which was up to PKRs. 10,000/- per month. Only three respondents house hold head had income

above PKRs. 20,000. Of these, 2 were in Government job and one was an army soldier.

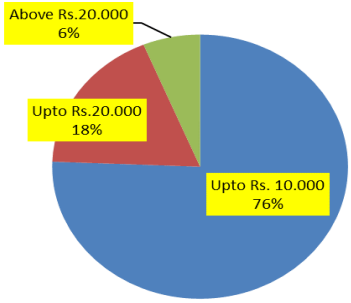

Figure 5. Monthly income of house hold head of the respondents

07 of 48 respondents had small pieces of inherited agriculture land with few trees of mangoes. The remaining responded that they did not have any land due to poverty.

3.3. Trainings held on preparation of various food items from mango

3.3.1. Perception about training programs

When the respondents were asked about the perception about training programs, 41 respondents replied with the answer that training was very beneficial while 7 responded perceived that training was easy to some extent and no one complained about any difficulty in understanding the things/processes during training period.

3.3.2. Level of learning of various products

The respondents replied in general the level of learning in various mango products was very high. They further added that preparatory processes of various types of mango pickles, mango powder, and juices were very simple, easy and less time consuming processes. Their ingredients were very cheap and do

not need any high class machinery/equipments in their preparation. The process of remaining products preparation was rather lengthy and time consuming.

3.3.3. Outcomes of training

As information provided by the respondents and, according to data they were involved in 6 types of main mango products. The household production products prepared by the respondents revealed that majority of the respondents 85.42% were involved in pickle making due to easy and convenient process (recipes), 77.76% were associated with powder making, 62.20% were involved in juice making, 47.13% practiced the jam making, 36.40% chutney making and 32.00% were involved in muraba (preserve) and 12.5% were involved in preparation of other products (Figure-6).

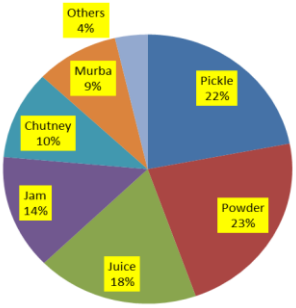

Figure 6. Products list and number of respondents and % involved in product making

3.4. Preparation of various mango products at household, consumption, gifted and sell by the respondents

3.4.2. Pickle

Figure-7 reflected the pickles prepared, consumed, gifted and sold by the respondents. On an average 10.23 kg pickle was prepared by each respondent involved. Out of which 7.09 kg was consumed, 1.32 kg was gifted and 1.83kg was sold. Due to

easy and convenient recipes of pickles coupled with longer shelf life, most women preferred to make fermented products like different type of pickle.

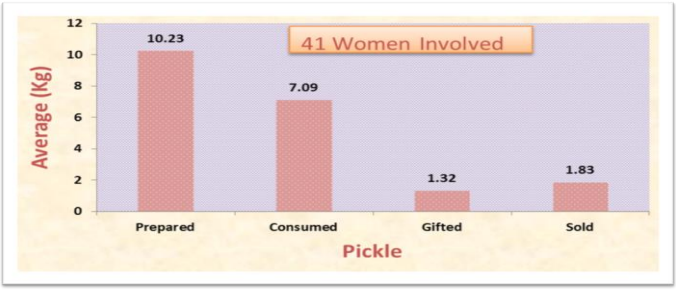

Figure 7. Household prepared, consumption, gifted and sell of pickle by the respondents

3.4.3. Powder

Figure-8 reflected the preparation, consumption, gifted and sell of mango powder. On an average 1.85 kg mango powder was prepared by each respondent involved. The breakdown of its usage was 1.1 kg consumed at their homes, 0.29 kg was gifted and 0.49 kg was sold. Due to easy and convenient technology and longer shelf life most respondents in rural areas develop the mango powder to be used in home recipes as flavoring agent in steam roasted fish, vegetables and meat recipes usually prepared at their homes.

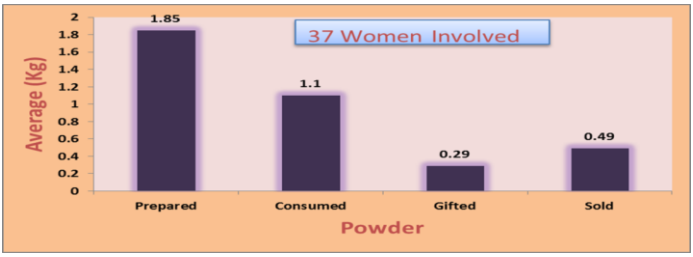

Figure 8. Household prepared, consumption, gifted and sell of powder by the respondents

Juice

Figure-9 reflects mango fresh juice prepared by respondents and consumed as fresh as possible at home. On an average of 3.72 lit was prepared by each respondent out of which 3.56 lit was consumed at home, and 0.16 lit was gifted. Only few respondents prepared juice and stored it for longer time.

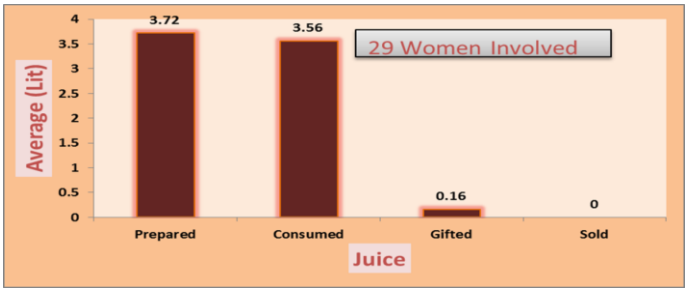

Figure 9. Household prepared, consumption, gifted and sell of mango juice by the respondents

3.4.4. Chutney

Figure-10 reflects that majority of respondents had been involved in chutney making which was their regular practice especially during mango season and was being used as regular food item for home consumption and other purposes. On an average 6.47 kg chutney was prepared by each respondent and from this 5.18 kg was consumed, 0.35 kg was gifted and 0.94 kg was sold.

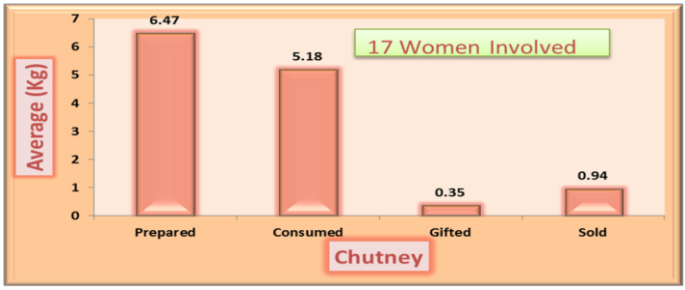

Figure 10. Household prepared, consumption, gifted and sell of chutney by the respondents

3.4.5. Jam

Figure-11 reflected the data of jam consumption, gifted and sold. On an average 5.05 kg mango jam was prepared by each respondent involved and from this 4.32 kg was consumed and 0.73 kg was gifted.

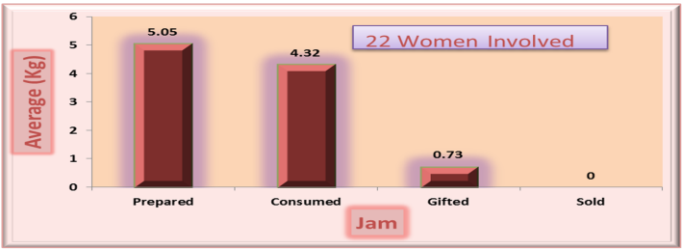

Figure 11. Household prepared, consumption, gifted and sell of jam by the respondents

3.4.6. Muraba (preserve)

Figure-12 shows the muraba prepared by the respondents which was mostly consumed at home. Only few respondents prepared and stored it for longer time. On an average, 6.70 kg chutney was prepared by each trained women. Out of which 4.30 kg was consumed, 2.40 kg was gifted and nothing was sold.

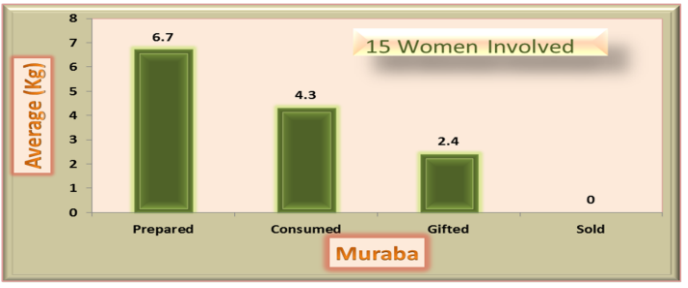

Figure-12 Household prepared, consumption, gifted and sell of muraba by the respondents

The data regarding non selling/marketing of the products in the market is shown in Figure-13 50% of respondents indicated that they had no experience of selling/marketing. Besides, 21.9% responded that in Sindh Province especially in villages,

there was no tradition or custom of selling the products by females in the villages, 6.3% had the excuse for non-availability of various types of spices in the vicinity. Similar number i.e. 6.3% responded about non-availability of packaging materials whereas 15.6% observed about the lack of availability of marketing facility in the locality.

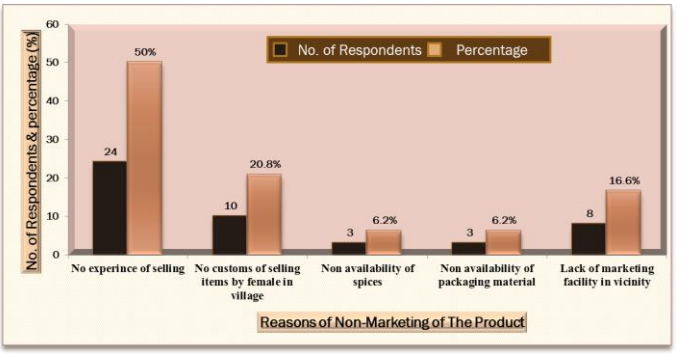

Figure-13 Reasons of non-selling/marketing of the products

3.5. Suggestions to overcome problem for lack of products being sold/marketed

The data regarding the marketing of products, almost all of them had similar type of response ie. lack of training about the knowhow of the marketing including the existing customs and traditions of selling the products by females in the villages. Besides, there was non-availability of packaging materials in the vicinity was also an additional handicap. They were repeatedly pointing out that if they prepared the products who will sell their products including potential buyers.

It is also important to mention here that this study was mainly based on two previously organized trainings held in 2008 and in 2010. In previous two trainings, the main emphasis was given to train these rural women how to utilize these fallen/unripe fruit which otherwise go as wastage in to useable form and use them at home and change their dietary habits.

Few of them were found interested in marketing but glad to hear that almost all (85%) women are at least involved in preparing these products and knew the techniques how to utilize them.

Very few were involved in selling the products at their village levels. In village Haji Muhammad Saleh Makrani Baloch, women were involved in selling the mango products such as various types of pickles, chutney, preserve and mango powder at their local village. While in Mithi, few women were involved in pickle formation of vegetables, drying of various fruits and vegetables, by frying them and finally selling these products. They usually prepare the products for 6 to 8 months and then sell at local level mostly in polythene bags or in small pots/bowls which are being brought by small children or females at their homes. They were not aware of the proper packaging materials, their availability and who need to purchase these for them. Usually, they use polythene bags and sell in PKRs. 10, 15 and 20. Sometimes, if consumer ask for half kilogram or kilogram then they sell at PKRs. 140/kg. As they are very poor families they do not afford, even to purchase the packaging materials for storing of mangoes, various types of spices etc. or packaging materials (containers) etc. for large scale business. They however, were found willing/inclined to carry out the business if they were provided the financial support and know how about marketing, including packaging materials availability in the vicinity.

4. Conclusions

It was generally concluded that rural women were seasonally involved in mango preservation technology. Most of them prepared and preserved various products for household consumption to feed their family members and children. It was also observed that the rural women so equipped with training/knowledge had been working as master trainer and

giving trainings to the local farmer women in their vicinity. It was also noted that only one respondent had trained 175 rural women farmers by organizing 5 trainings with 35 participants in each training at various villages of district Mirpurkhas.

Majority of the respondents and house wives were interested in the marketing business but due to poverty/lack of funds, they could not afford to purchase adequate raw materials and small equipment for the preparation of the products.

However, farmer women are making the products particularly in pickle formation due to easy process for their regular home needs and the associated living area. Production of Jams, Pickles, Muraba (Preserve), Chutney and Fruit Juices are specially prepared at home level during the mango season and are hardly marketed. Under the circumstances and outcome of the findings of the study it is recommended as given below:

5. Suggestions/Recommendations

- Trainings on mango production technology may be organized to train more farmer women and house wives.
- Door step trainings be organized for those women who either cannot go outside due to religious PARDA system local customs and traditions or having small children/infants.
- Trainings on marketing of mango products should be organized and if possible funds be provided for the continuity of their business who are and want to be more actively involved in mango products.
- Women producers in mango pickle should be encouraged and provided opportunities for exposure of the marketing of mango pickles in super markets at Hyderabad, Karachi and Islamabad.
- To start small scale business it is recommended that the credit facilities should be provided through micro-credit

programs of Pakistan under the umbrella of poverty alleviation societal funds which if not already earmarked that way must be embarked upon as a top priority for the transformation of rural society leading to their useful contribution in the national exchequer and as a lead to poverty alleviation in the area.

6. Acknowledgements

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