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### Blue print for better prospects of guava production in the present research study area

<sup>1</sup>SR Meena and <sup>2</sup>YK Sharma

<sup>1</sup> P.G. Scholar, Department of Extension Education, Rajasthan College of Agriculture, MPUAT, Udaipur, Rajasthan, India

<sup>2</sup> Assistant Professor, Department of Extension Education, College of Agriculture Lalsote, SKNAU, Jobner, Rajasthan, India

#### Abstract

The present research study was conducted in Sawai Madhopur District of Rajasthan. The Sawai-Madhpor District was purposively selected for the present investigation. The present study was undertaken in one panchayat samiti of Sawai-Madhpor District i.e. Sawai-Madhpor panchayat samiti. From the list first six villages were selected for the research study on the basis of maximum area under the guava cultivation. The number of guava growers was decided for each village by proportionate sampling method. The farmers of each village were selected by simple random sampling techniques. Sample size of fifty-four small and sixty six big guava growers was selected. Thus, the total study sample consisted of 120 respondents from all the six selected villages of Sawai-Madhpor panchayat samiti.

**Keywords:** Blue print, better prospects, information, KVK-SMSs, DOH (Govt. of Raj.), [Small & Big] guava growers

#### Introduction

Guava (*Psidium guajava* L.) is one of the most important fruit crop of India. It was originated in tropical America. It covers around 3.3% of the total area under fruit crops and contributes 3.3 % of the total fruit production in India. In India, Uttar Pradesh leads in production, while Allahabad region of U. P. produces best quality of guava in India as well as in the world. Guava is rich source of ascorbic acid. It is good source of dietary fiber and pectin. It can be processed into a number of products like jam, jelly, nectar, juice, guava cake, puree etc. Its roots, bark, leaves and fruits has great medicinal value.

Fruits have great importance in human diet. It is stated that the standard of living of the people of a country can be judged by its production and percapita consumption in the world. India is the second largest producer of fruits in the world its share in the world fruit production is only 10 per cent. Although India may unable to cater the nutritional demands of even increasing population in the present scenario the percapita availability of fruits in the country is 46 gm per day against 92 gm per day recommended by the Indian council of medical research This may be due to very low production and increasing population pressure of the country.

Guava Fruit is successfully grown all over India. The total area and production of guava in the country are 1.90 lakh hectare and 1.68 million tonnes. Major guava producing states are Bihar, Uttar Pradesh, Maharashtra, Karnataka, Orissa, West Bengal, Andhra Pradesh and Tamil Nadu.

The requirement of fruit in India is rapidly increasing because of increasing population pressure and higher standard of living of the people. Though the area and

production of fruits in India has increased but the per capita availability of fruits is very low in India. Hence increasing fruits production is an important component of agriculture production programme. Guava is the fifth most important sub tropical fruit crop of India after mango, banana, citrus and apple. Thus, the total area under guava fruits was increased but the total production was decreased. The major guava growing states in the country are Bihar, Uttar-Pradesh, Madhya Pradesh, Maharashtra, Gujarat, Andra-Pradesh, Tamil Nadu, Karnataka, Assam, Punjab, Kerala, West Bengal, Orissa and Tripura.

Rajasthan is the largest state of India from the view point of area. Its total area is 3,42,239 sq.km that is equivalent to 10.40 per cent area of our country. The total population of the state is 5.64 crore that is 5.5 per cent of the country. About 70 per cent population of the state dependent on agriculture. The total cropped land area in the state is 1,93 crore hectares. The state covers 49 crore hectares net irrigated land area of the country. The contribution of agriculture in gross domestic production of the state is 52 per cent as against 26 per cent in case of the country. The area coverage under horticultural crops is only 1.97 per cent of the cultivated land with distribution under fruits, vegetables and condiments is 0.12, 0.31 and 0.54 per cent respectively. Despite of poor status, production of certain fruit crops in Rajasthan state occupies an important place in the country. Fruits are grown in various Regions of the State. The Rajasthan State is considered to be the potential area for fruits like mango, orange, lemon, guava, kinnow, mosambi, banana, grapes, papaya, ber, aonla, malta, phalsa, pome granate, date-palm, etc.

Rajasthan is considered as the most important guava producing state of India and Bharatpur region has reputation

of growing the best quality of guava in the state. Bharatpur division (Alwar, Bharatpur, Dholphur, Karauli and Sawai-Madhopur) is well known for its area and production. The Sawai-Madhopur district covered an area 278.40 hectares under guava fruits and production 37419.60 quintals of guava fruits.

Generally there is also a technological gap between the technology generated and its adoption. A number of agencies like Department of Horticulture (Govt. of Rajasthan), Krishi Vigyan Kendra (ICAR, New Delhi) and Regional Research Station are working on fruits are located at Sawai Madhopur District. Thus, these organizations are mostly utilized by the guava growers for transfer of improved guava production technology. They are imparting technological knowhow to the needy farmers even then the guava production is less than the potential.

Keeping this view in mind, an effort has been made in view of the above facts in to consideration, the present research study was undertaken to entitled "Technological gap among the guava (*Psidium guajava*) growers in Sawai-Madhopur District of Rajasthan" to assess, the object to find out the blue print for better prospects of guava production in the study area.

### Research methodology

The present study was conducted in purposively selected Sawai-Madhopur district of Rajasthan. The present investigation was conducted in one panchayat samiti of Sawai-Madhopur district i.e. Sawai-Madhopur panchayat samiti. The criteria for selecting this panchayat samiti were the maximum area under guava fruits among all the seven panchayat samities of the district.

A list of all the guava growing villages was prepared in consultation with tehsil personnel's and with the help of Department of Horticulture (Government of Rajasthan). From the list six villages were selected for the research study on the basis of maximum area under the guava cultivation in Sawai-Madhopur panchayat samiti. A comprehensive list of all guava growers of the selected villages was prepared in consultation with the patwari and agricultural supervisors of the concerned villages. The numbers of guava growers were decided for each village by proportionate sampling method. The farmers of each village were selected by simple random techniques.

In this way a sample of fifty-four small and sixty six big guava growers were selected. Thus, the total study sample consisted of 120 respondents from all the six selected villages of Sawai-Madhopur panchayat samiti.

### Results and Discussion

#### Blue print for better prospects of guava production in the study area

On the basis of the findings it is realized that successful orchard development needs a due consideration of all the three aspects i.e. policy, technology and service facilities. Sufficient attention has to be paid to understand the relation between backward and forward linkages, cost effectiveness and easy access to technology. Based on the realization of issues, constraints emanated out of the study and based on the personal observations the following lines of actions could be suggested for enhancement of production in the area.

1. The study reveals that knowledge of respondents was not upto the mark resulting in higher knowledge gap with respect to different practices of guava cultivation. It is therefore, suggested that guava growers should be given more exposure to new techniques of improved guava production technology by the concerned agencies working in the study area.
2. More number of training programmes and demonstrations should be conducted by the Krishi Vigyan Kendra, Department of Horticulture, Agriculture Research Station and other institutions, which were engaged in transfer of technical know-how of fruit production. Technological guidance giving priority to the deficiency areas viz. vegetative propagation, irrigation system, plant protection measures, improved varieties, harvesting & marketing and cultural practices.
3. To motivate the other farmers success stories of some ideal orchard along with details of economical aspects should be widely published some case studies and success stories must be prepared in simple and local language. This will activate to other farmers in knowledge and adoption of improved guava production technology.
4. Some of the progressive guava orchard growers may be motivated for establishment of private nurseries, fruit growers should be trained in vegetative propagation methods and care and protection of tiny plants, the Department of Horticulture and Krishi Vigyan Kendra of respective district should come forward to initiate a contact drive to solve the field problems encountered by the fruit growers. Some modern nurseries may be developed by Department of Horticulture in the region to demonstrate the methodology to be adopted in developing fruit nursery on scientific lines.
5. It is recommended that during juvenile period of orchard subsidy in the form of inputs may be given to the orchard growers so that the farmers can be motivated to take up this venture. Besides this, some modern irrigation systems demonstration units should be established by Department of Horticulture in this area to meet out the demand of drip/sprinkler instrument for willing farmers. It is further suggested that orchard insurance in line with the central government policy should be given wide publicity to save the orchard growers from economic loss due to natural calamities.
6. High mortality of the plants during initial years of planting in the field was yet another constraint expressed by orchard growers. The possible reasons for this may be lack of proper maintenance and care, lack of irrigation, improper planting methodology and long distance transportation. The exact reason for the mortality of plants must be identified and saplings must be saved by adopting the appropriate remedial measures. The orchard growers should be educated in careful and handling of tiny sampling, digging of pits, planting practices, irrigation system and plant protection measures etc.
7. During investigation, it was observed that almost all the fruit growers of Sawai-Madhopur district have to procure planting materials for their orchards from long

- distance. Procuring planting materials from distance places is a costly affair on account of mortality during transportation.
8. Further more, availability of improved planting materials as desired by fruit growers was a problem. To over come these problems it is suggested that few ideal type fruit nurseries may be established in Sawai-Madhupur district, which may supply improved planting materials to the needy growers at nominal rates.
  9. Orchard development is a costly venture. The establishment of orchard demands a very heavy amount especially at the initial stage. In order to encourage and motivate the guava growers about guava cultivation, government should keep adequate provision in the budget providing subsidies to those small and marginal fruit growers who are ready to develop orchards in their fields.
  10. Considering the potential of Sawai-Madhupur district in fruits production. The regional rural bank, cooperative societies and lead banks of the area should be instructed to advance loan to the farmers willing to establish orchards at the nominal rate of interest on priority basis. This will be a boon to motivate the farmers towards this enterprise. Further more, it is suggested that some long duration development projects for Sawai-Madhupur district be submitted to loaning financial institutions like NABARD & CAPART etc. and the assistance so received massive campaigning drives should be diverted blue print for better prospects of guava production in the study area.
  11. The fruit producers of Sawai-Madhupur district have always deprived of the good monetary benefits in the absence of preservation industry. This compels the fruit growers to sale their produce immediately after harvesting. The income of the farmers can be increased many fold if the fruit growers are trained in fruits preservation. The preserved products such as jam, jelly, nectare, syrup, concentrate and marmalade could be prepared which may give significantly higher returns than the fresh fruits.
  12. During investigation it was found that lack of storage facilities and cooperative marketing system were serious constraints affecting orchard development in Sawai-Madhupur district. Fruits being a perishable commodity requires of proper storage facilities and availability of cooperative market in the near by area. This may enable the fruit growers to store fruits during glut season and fetch better prices during off season. The government should come forward to save the interest of fruit growers and establish storage facilities and cooperative marketing system, if the orchards are to be really promoted in this area. The government should develop some fruit collection mechanism from the orchards it self during peak season by giving good prices to the producers. This will certainly have a check on the mal practices of the middlemen.
  13. Findings of study have shown that erratic rainfall and high temperature during May-June were natural constraints perceived by the guava growers in adoption of improved guava production technology. So, it is suggested that orchard growers should be provided water from reservaires timely and specially for orchards. The orchard growers should be motivated for adoption of water conservation techniques and efficient methods of irrigation by the concerned agencies working in the study area.
  14. As mentioned earlier fruit growing is a costly venture. Poor conditions of the farmers in the study area do not permit them for such a costly affairs, providing finance to the fruit growers and orchard insurance to minimize the risk factor can be alternative solutions of this problem. This will certainly add to the better prospects of orchard development in Sawai-Madhupur district.
  15. Unfortunately there is a shortage of motivational agencies and the training institutions about improved guava production technology in the Sawai-Madhupur district. The interested guava growers must be motivated by the Department of Horticulture and the Krishi Vigyan Kendra working in the study area. There is an urgent need to organize need based training programmes for guava growers by the training institutions like Krishi Vigyan Kendra and Department of Horticulture. There should be a provision of recognition and rewards to the growers of good orchards. This will give a boost to motivate guava growers who have developed orchards in their fields.
  16. Results of investigation have shown that guava orchard growers preferred progressive farmers and experienced guava growers as the most credible sources of information as compared to other personal localite sources of information. It is therefore, suggested that progressive farmers and experienced guava growers may be trained and enlightened in all the crucial areas of guava cultivation.
  17. During investigation it was observed that the Agriculture Supervisors and subject matter specialist were most credible sources of information among the guava growers of Sawai-Madhupur district. One of the reason of less credibility may be the poor knowledge possessed by the guava growers in guava production. So it is suggested that Agriculture Supervisors and subject matter specialist should be trained periodically to enrich their technical know-how related to the improved guava production technology.
  18. It was found that demonstrations and discussions were most important channels of information as compared to other personal cosmopolite channels of information among the guava growers in the field situation by the researcher during investigation. There should be a common platform where these functions can be organized regularly and discussions can be take place regarding operational problems including future strategies for promotion of orchards in the study area.
  19. Results of study have shown that there was a unavailability of farm publications like leaflets, folders, bulletin to the orchard growers. So it is suggested that timely supply of more farm publications and farm literature related to guava production should be provided to the orchard growers so that they can enrich their knowledge and adopt of improved guava production technology.

### Suggestions

1. The study reveals that knowledge of respondents was not upto the mark resulting in higher knowledge gap with respect to different practices of guava cultivation. It is therefore, suggested that guava growers should be given more exposure to new techniques of improved guava production technology by the concerned agencies working in the study area.
2. More number of training programmes and demonstrations should be conducted by the organizations working in Sawai-Madhopur district like Department of Horticulture (Govt. of Rajasthan), Krishi Vigyan Kendra (ICAR, New Delhi) which are engaged in transfer of technical know how of fruits production. Technological guidance giving priority to the deficiency areas i.e. vegetative propagation, irrigation system, plant protection measures, improved varieties, harvesting & marketing and cultural practices.
3. Orchard development is a costly venture. The establishment of orchard demands a very heavy amount especially at the initial stage. In order to encourage and motivate the guava growers about guava cultivation, Government should keep adequate provision in the budget providing subsidies to small and marginal fruit growers who are ready to develop orchards in their fields.
4. The fruit producers in Sawai-Madhopur district have always been deprived of the good monetary benefits in the absence of preservation industry. There is an urgent need for the establishment of preservation industry in this area so that the farmers can get proper benefit of their produce. The preserved products such as jam, jelly, nectare, syrup, concentrate and marmalade could be prepared which may give significantly higher returns than the fresh fruits.
5. During investigation it was found that lack of storage facility and cooperative marketing system were serious constraints affecting orchard development in Sawai-Madhopur district. Fruits being a perishable commodity requires proper storage facility and availability of cooperative marketing system in the near by area. This may enable the fruit growers to store fruits during glut season and fetch better prices during off season. The government should come forward to save the interest of fruit growers and establish the storage facilities and cooperative marketing system, if the orchards are to be really promoted in this area.
6. Findings of study have shown that erratic rainfall and high temperature during May-June were natural constraints as perceived by the guava growers in adoption of improved practices of guava cultivation. So it is suggested that orchard growers should be trained to make use of modern irrigation system timely and specially for orchards.
7. As mentioned earlier fruit growing is a costly venture. Poor condition of farmers in the study area do not permit them for such a costly affair, providing finance to the fruit growers and orchard insurance to minimize the risk factor can be the alternative solution of this problem. This will certainly add to the better prospects of orchard development in Sawai-Madhopur district.
8. Unfortunately shortage of motivational agencies and the training institutions about improved guava production technology in the Sawai-Madhopur district. The interested guava growers must be motivated by the Department of Horticulture and Krishi Vigyan Kendra working in the study area. There is need to continue organize need based training programmes for guava growers by the training institutions like Krishi Vigyan Kendra and department of Horticulture. There should be a provision of recognition and rewards to the growers of good orchards. This will give a boost to motivate guava growers.
9. Results of investigation have shown that guava growers preferred progressive farmers and experienced orchard growers as the most credible sources of information as compared to other personal localite sources of information. It is therefore, suggested that these respondents may be trained and enlightened in all the crucial areas of guava cultivation.
10. During investigation it was observed that the Agriculture Supervisors and subject matter specialists were most credible sources of information among the guava growers of Sawai-Madhopur district. One of the reason of less credibility may be the poor knowledge possessed by the guava growers in guava production. So it is suggested that Agriculture Supervisors and subject matter specialists should be trained periodically to enrich their technical know-how related to the improved practices of improved guava production technology.
11. Results of study have shown that very few farm publications like leaflets, folders, and bulletin were available to the orchard growers. So it is suggested that timely more farm publications and farm literatures related to guava cultivation should be provided to the orchard growers so that they can enrich their knowledge and the adopt of improved guava production technology.
12. To motivate the other farmer's success stories of some ideal orchard along with details of economic aspects should be widely published. Some case studies and success stories must be prepared in simple or local language. This will activate to other farmers in knowledge and the adoption of improved guava production technology.

### Conclusion

#### Suggested areas for the future research

- a) Similar studies can be conducted in other areas of Rajasthan as well as other states of the country to highlight the picture more valid conclusion and suggestions for the extension programmes pertaining to fruits.
- b) The area of research can be extended further on sufficiently large sample to ensure valid and generalized conclusions.
- c) Similar studies can be conducted on fruits like mango, banana, aonla, ber, pome granate, date palm etc. which are important fruits of Rajasthan state.

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