

Problems and Prospects of Guava Producers in Allahabad District of Uttar Pradesh, India

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Abstract: The purpose of the study was to examine the Socio-economic, socio personal and socio-psychological characteristics of guava growing farmers and the constraints faced by them while production till the marketing as well as support from the government through extension strategies in Allahabad district of Uttar Pradesh. Two blocks were selected on the basis of guava production to make the comparison between high and low production blocks. Four villages were randomly selected from two blocks with high and low production capacity and 80 farmers were selected 20 from each village. The result of the analysis shows that 58.75% of the respondents fall within the age range of 41-60 years, the majority of the farmers 46.25% were graduated while 3.75% had no formal education which is very less. 73.75% of the respondents were engaged in farming activity only and 26.25% respondents were doing farming with a private job. Most of the respondents had less than 4 acres of agricultural land i.e. 53.75%, while having 43.75% of moderately mass media exposure administrative support was also a problem had only 58.75% medium support. Respondents got information through agricultural fair 78.75% and through friends 67.5%. Most of the respondents had no formal training on guava production i.e. 71.25%. Major problem in guava farming was found Wilt disease and Fruit Fly. Various problems like lack of training on guava production, problem of transport, absence of experience in managing guava production, absence of agencies to support, social-personal problems, input related problems, financial problem and market problems were also assessed. The results of study can call for policies aimed at encouraging new entrants especially the youths who are agile and stronger to grow guava and the experienced ones to remain in guava farming.

Key Words: Guava production, Constraints, Strategies, Uttar Pradesh, Problems

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I. INTRODUCTION

Horticulture has arisen as one of the major agricultural activities as there has been a significant increase both in production and area of horticulture crops. Horticulture crops have the integral advantage of providing higher productivity per unit area of land as equated to other crops, resulting in employment generation and higher income in rural areas. According to the National Horticulture Mission, 2005, Agriculture had contributed to about 12 per cent of the State Gross Domestic Product, while the share of Horticulture to the State Gross Domestic Product had been estimated to be 3.5 per cent. Guava had been produced in all parts of the Nation since a very long period of time. As it was an agricultural crop with a high potential for maintaining health, every state had been taking active steps to cultivate Guava in the areas most suitable for its propagation. Guava is an important fruit crop of the tropical and subtropical regions of the world. It is available throughout the year except during summer season. Guava is quite hardy and a highly remunerative crop which can be grown without much care and attention. Guava is also known as "Super Fruit" because it has high nutritive value with many health benefits (Singh et. al. 2017). According to the Indian Horticulture Database, 2014, the production share of Guava in India was 4.1% followed by China, Thailand, Brazil, Philippines and Bangladesh at 10%, 6%, 5%, 3%, & 2% respectively of the total world production of Guava. Indonesia, Mexico, and Pakistan had a production share of 5% each in the Guava production of the world. At present, approximately 219.70 Thousand Hectares of land was under Guava Cultivation. The Guava Production and Productivity had also changed in

conformity with the change in the area under Cultivation. A considerable change had taken place in respect of Guava Production and Productivity since the year 1991 (N.H.B. Annual Report, 2009-10).

In India, Uttar Pradesh had stood 1st in regard to the area under guava production amongst guava producing states (Indian Horticulture Database 2014). There are various constraints associated with Guava growers in India and solely in the Uttar Pradesh. There are many hurdles because some other fruit crops like Mango, Banana, Citrus, Papaya have been given more importance than Guava rather this fruit is rich in nutrient and vitamins. In *aayurveda* it is considered as *tridosha nashaka*, and indicated in *atyagni*. Its leaves, bark, fruits and roots are used in treatment of cough, fever, diarrhoea, constipation, bad breath, gum problems and numerous other health problems (Kumari et al. 2013). Since guava is considered a poor man's apple and can easily be grown everywhere, there is a need to identify and overcome the various problems faced by the guava growers. The study analyzed the efficiency of the guava production among guava growing farmers in selected blocks of Allahabad district and the blocks were selected on the basis of guava production to made the comparison between high and low production blocks. To achieve this, the study came up with three main objectives. These were to: Socio-economic, socio personal and socio-psychological characteristics of guava growing farmers, the constraints faced by guava growers in various stages of production till marketing and extension strategies/ support for these guava growers in Allahabad district.

II. MATERIAL AND METHODS

The study was conducted in the Allahabad District of Uttar Pradesh. Out of total 20 Blocks in the Allahabad district two blocks were selected *i.e. Kaudihar and Phulpur* purposely. One block with maximum yield of guava and one block with minimum yield of Guava so that a comparison could be established. Four (04) villages were selected *viz. Bakrabad & Purapajava from Block Kaudihar-II and Korapur & Chaurai from Block Phulpur* randomly from selected blocks with two from each block for the proposed study. The data from Horticulture department about guava growers was taken. Based on the total number of Guava growers 10% was calculated in each selected village for the study and hence reached to 20 farmers from each village, thus the total 80 Guava growers were considered for this study. As the collected data were in terms of qualitative response, so those were quantified by using appropriate scoring procedure. The statistical tools used to analyse the data is frequency and percentage through which attributes of guava producers known, contribution of other horticulture crops to farmer's income, potential impact of guava production, their status of living style and constraints to guava production.

III. RESULTS AND DISCUSSION

Profile of the respondents

The result of the analysis in Table1 shows that 58.75% of the respondents fall within the age range of 41-60 years, the majority of the farmers 46.25% were graduated while 3.75% had no formal education which is very less. 73.75% of the respondents were engaged in farming activity only and 26.25% respondents were doing farming with a private job. Majority of the farmers had above 50,000 annual income. Most of the respondents had less than 4 acres of agricultural land *i.e.* 53.75% , while having 43.75% of moderately mass media exposure administrative support was also a problem had only 58.75% medium support. Respondents got information through agricultural fair 78.75% and through friends 67.5%. Most of the respondents had no formal training on guava production *i.e.* 71.25%. Motivation level played an important role in guava farming psychological motivation in achieving something through guava production and 87.5% of the respondents save for their future. The above results are in line with the studies conducted by Lawal 2012; Singh et al. 2008.

Table 1. Profile of the respondentsN 80

Variable	Particulars	Frequency	Percentage
Age	0-46	19	23.75
	47-69	48	60
	69 above	15	18.75
Education	Illiterate	3	3.75
	Class 5-9	6	7.5
	High School	16	20
	Intermediate	15	18.75
	Graduation	37	46.25
	Post Graduation or above	3	3.75
Occupation	Farming only	59	73.75
	Enterprise	2	2.5
	Govt. service	1	1.25
	Farming+ private service	21	26.25

Annual Income	10000 to 50000	2	2.5
	50000 above	78	97.5
Land Holding	Less than 4acres	43	53.75
	4-8 acres	31	38.75
	8 acres above	6	7.5
Land Ownership Type	Homestead land with pond	13	16.25
	Own irrigated land	58	72.5
	Land taken on lease	7	8.75
	Land given on lease	2	2.5
Administrative Support	Low	32	40.0
	Medium	47	58.75
	High	1	1.25
Training Received	Yes	23	28.75
	No	57	71.25
Mass Media Exposure	Regularly	4	5.0
	Often	13	16.25
	Moderately	35	43.75
	Rarely or never	28	35.0
Psychological Motivation*	To achieve something through guava production	79	98.75
	To be own boss	16	20.0
	Use spare time	1	1.25
Economic Motivation*	Financial stability	20	25.0
	Saving for future	70	87.5
	Additional income	30	37.5

*Multiple responses were allowed

Problems faced by Guava producers

Various problems of guava producers are displayed in Table 2 which reveals that major technical problems were lack of training on guava production (71.25%) followed by problem of transport (70%) whereas absence of experience in managing guava production (75%) and absence of agencies to support (68.75%) are some of the prominent managerial problems. Major social-personal problems were lack of support from other community members (65%) followed by lack of support from family members, lack of confidence (47.5%) and lack of confidence to opt for guava farming (35%). Majority of guava growers had difficulties in non-availability of raw material for guava farming (43.75%) followed by general difficulties in production process (37.5%), pre-assessment of the demand and non availability of raw material in market were some of the input related problems. 81.25 percent of the guava growers stated that high interest rate is one of the major financial problem, followed by inadequate loan facility (65%) and price fluctuation of the raw material (40%). Market is also found to be one of the major components for any business. In this regard 62.5%t of the respondents stated the problem that transportation cost upto the market minimizes their profit. Fluctuation in the demand of the product (47.5%) was also be one of the major market problems. Besides all these, 100% of the respondents stated that lack of government assistance is major drawback and acts as barrier in initiating any kind of enterprise. Simply the awareness level itself can solve most of the enlisted problems. Also, some kind of training in the direction of guava production enterprise can also solve most of the problem such as lack of skill on budgeting, lack of confidence, lack of awareness etc. All these problems exist only due to the fact that opportunities available in this direction are not utilized to its maximum. The above constrains are similarly stated in past studies conducted by Shrestha 2005; Mathi and Pandey 2008; Imtiyaz and Soni 2013; Mishra et al. 2013; Sain et al. 2013.

Table 2. Problems faced by Guava producers N = 80

Technical problem	Items	Respondents	
		Frequency*	Percentage
	Absence of organization to guide guava producers	40	50
	Inadequate availability of land	30	37.5
	Lack of experience of management	41	51.25
	Problem of transport for guava growers	56	70

	Lack of knowledge and skills on budgeting	42	52.5
	Lack of training on guava production	57	71.25
Managerial problems	Lack of managerial skill in guava production	41	51.25
	Low productivity in guava production	18	22.5
	Lack of experience in management	60	75
	Absence of agencies to support guava production	55	68.75
Socio-personal problems	Affects family life	17	21.25
	Lack of respect for women	18	22.5
	Lack of confidence to opt for guava farming	28	35
	Lack of support by family members	38	47.5
	Lack of support from other community members	52	65
Input problems	General difficulties in production process	30	37.5
	Pre-assessment of demand for product not done	28	35.0
	Non-availability of raw material for guava farming	35	43.75
	Poor knowledge of market and competition	15	18.75
	Price of raw material	20	25.0
	Non-availability of raw material in market	22	27.5
Financial problems	Inadequate loan facility	52	65.0
	High interest rate	65	81.25
	Price fluctuation (raw material)	32	40.0
	Lack of working capital	30	37.5
	Loan repayment	22	27.5
Market problem	Lack of knowledge in guava farming practices	26	32.5
	Fluctuation in demand	38	47.5
	Low profit	12	15.0
	Transportation	50	62.5

*Multiple responses were allowed

Other general constraints observed

Constraints mentioned by Chief Horticulturist:

- Major problem in guava farming is Wilt disease and Fruit Fly. This pest affects guava production and if this disease persists then it harms whole farm field.
- Another problem is fluctuation in temperature due to which Surkha the unique species found in Allahabad district only cannot attain its apple type color. For this temperature requires 10-12 degree Celsius and fog is must as well as river bank that's why *Gangapar* area is more suitable for Surkha or Apple Color Guava.
- For pest management: to control fruit fly attack they put guava flavored filled jars in farms to lure fruit flies to save guava fruits. It can trap up to 1500-1800 fruit flies in one jar and it is called "Pheromone trap" because it uses pheromones.
- To control wilt they usually spray pesticides in the month of September and October. Pesticides like Dimethanote & Carbendazim and some other pesticides, these pesticides are effective for 15-20 days. Spraying of pesticides is not done after October because it affects fruits. After rain while doing weeding they mix 1gm. of Carbendazim in 1 liter of water then put it into the pit which was made by them at the gap of 15 days.
- Problem with the Pheromone trap is that it is stolen by other farmers so that they can use it in their farms and sometimes plucked by children. It costs around 200-250 rupees.

- Other option for fruit flies is Methyl Eugenol which costs 10,000-15,000/liter which is very costly so farmers cannot afford it so the problem of fruit flies remains the same.
- Lack of awareness and laziness among farmers, like they lease their farms to contractors so they can enjoy their life with bags of money and difference in thinking. These contractors use Cypermethrin which is banned, this chemical is harmful and hopper gets resistance by excessive use of this chemical.

Constraints mentioned by KVK's scientist:

- The biggest problem is that it is situated in *Yanumapar* area i.e. Naini so, they are not able to focus in *Gangapar* area to that extent which in actual is needed.
- They have small staff that is another constraint they cannot focus upon large area.
- Bottom-up approach could not work still Top-bottom approach works.
- Lack of jam and juice industries in Allahabad so farmers could not find solution to earn more money.
- Farmer focuses more on Banana and Mango farming because it is less attacked by pest and earns more money.
- Lack of awareness and laziness among farmers. Farmers do not follow instructions of farming techniques suggest by extension worker and scientists.
- Wilt is a major disease in guava, wilt blocks nutrition passage of guava, 10-15 years old guava tree are more prone to wilt disease.

Prospects associated with guava producers

1. Using grafted seedlings by farmers will give good production of guava and this technique also protects guava plant from wilt disease. In this regard Pest and disease management strategic plan for fruit crops was suggested by Mossler et al. 2003.
2. Promotion of co-operative association for pooling of resources together which will provide a better expansion, efficiency, effective management of resources and profit maximization.
3. Adoption and intensification of new techniques in existing farming activities will also provide better production.
4. Diversification of guava using low spread and high yield varieties of crops along with guava farming will be beneficial for guava production.
5. Professional training to guava farmers could also increase production of guava.
6. Elimination of middlemen from long chain of supply will provide guava farmers a better approach to market and they can get a fair amount for their produce.
7. Grading and packing system should be standardized for better marketing approach.

Based upon the analysis, problems and opportunities, relevant and feasible strategies have been worked out for carrying out extension activities in the district. The strategies have been classified under five major groups as indicated below.

1. Diversification and Identification of Existing Guava Faring System

Low spread and low yield crops are undesirable and always need diversification. High spread and low yield crops are either to be substituted or their yield level can be increased by technological and input intervention. Low spread and high yield crops should be encouraged along with Guava and this way vertical expansion of such crops needs to be considered. This way productivity of the land will increase and assure income will be generated for the famers throughout the year. The less remunerations enterprises need diversification and existing farming systems require further intensification to increase the production level.

2. Natural Resource Management for ensuring sustainability in production and productivity

Problems related to soil and water management IPM and INM have been identified and required greater attention to increase the productivity of Guava. During the field study it was also observed that unabated soil erosion and degradation of natural resource base poses a serious problem for sustainable production. There is loss to production due to animals also. Effective measure need to be taken by govt. authorities to tackle such challenges. The extension services in agriculture sector were another important institutional support provided by the government to the farmers Pervaiz et al. 2008.

3. Human Resource Development {Strategy/Intensification (Relevant to all AES)}

- Increasing techno-managerial capacity of farming community on Farming system approach.
- Training on importance of best practice in Guava production.
- Organizing training to extension personnel on participatory research, extension techniques, behavioural science and inter personal skills so that they can facilitate and guide the Guava farmers effectively.
- Training to extension personnel in training needs assessment.

- Training on IT and Cyber extension to all the line department officials and extension workers.
- Specialized training course for NGOs, farmer, farm women on Guava production.
- Organising need based training programme for extension functionaries of line department and NGOs.
- Training on nursery management.
- Training on Bio-control agent preparation.
- Training of farmers on IPM and INM technology.

4. Promotion of Community Organizations

Group approach is the cornerstone of the restructured extension mechanism. A major component of extension services will be the mobilization of the community into farmers groups — FIGs, FOs and SHGs. Farmers organization will be linked with *Panchayat* through existing statutory institutional arrangements. FOs can be supported directly through public funds and will be involved in the planning, implementation, monitoring and feed back of the programme. Opening Agri-clinics and providing consultancy on payment is another option. Establishment of linkages of extension services provided by Govt./SAU/ NGOs and private companies with the Guava producers to improve production. Involving farming community in decision making and delivering mechanism will yield good fruits in future.

5. Promotion to NGOs and Private organizations

Government staff is less in number so they can not focus on large areas that's why should involve NGOs and private organizations to disseminate information among farmers and for implementation of schemes, programs and interventions of technologies in existing guava farming.

IV. CONCLUSION

Based on the findings of this study, it could be concluded that guava production in the study area is profitable but there are many constraints like advantage of other horticulture crops over guava because mango, papaya and banana are less attacked by pest, lack of training, information sources, motivational support and government support which include scarcity of loan availability, no proper irrigation system and urbanization is another factor due to increasing population lots of townships were made which are causing more pollution ultimately creates fluctuation in temperature/ season. The farm specific technique and training are not up to the mark so this can encourage farmers to remain in the guava farming that means none of the farmers achieved their maximum efficiency level to grow guava. Allahabad district has much potential to grow in guava farming because Allahabad guava is world famous and Kaudihar block itself has good production while Phulpur block has less production but only after a little effort output can still be increased because guava gives fruits twice in a year. These results can call for policies aimed at encouraging new entrants especially the youths who are agile and stronger to grow guava and the experienced ones to remain in guava farming.

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