



Constraints Faced By the Mango Orchardists and Suggest Suitable Measures for Improvement in Meerut District of Uttar Pradesh

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Abstract

The goal of the study was to evaluate the current situation of mango orchardists in the Meerut district of Uttar Pradesh. To identify the challenges faced by mango orchardists and recommend appropriate improvements. The Meerut district consists of 12 community development blocks, of which two were specifically chosen based on the demand for and accessibility of mango orchardists. Based on the greatest possible area and output. With the assistance of progressive orchardists and the village Pradhan, 10 orchardists were randomly chosen from each of the selected villages, making a total sample size of 80 orchardists for the inquiry. The technologically gap in adoption of recommended technologies by mango orchardists upon various factors as well as constraints faced by them. Constraints refer to the item of difficulties faced by mango orchardists in actual adoption of mango production technology. It may be seen that altogether 10 constraints were faced by the mango orchardists in the adoption of mango production technology in the study area, the Lack of information about suitable inter crops. Unavailability of improved varieties in government nursery. Testing laboratory is not available.

Keywords: Adoption, Crop production, Technologies, Trainee and Non-trainee.

Introduction

Mango, popularly known as the king of fruit, belongs to Anacardeaceae family of trees. Taste, flavor and fragrance of mango is very characteristic to the same. Mango was originated in India. Though it is not endemic to Sri Lanka, it is seen growing in many parts of the country. It is very rare to find a home garden without a mango tree in our country except in certain upcountry areas.

Present extent under mango in Sri Lanka is about 27,500 Ac. Predominately, it is grown in Kurunegala,

Anuradhapura, Hambanthota, Puttalam, Moneragala, Jaffna districts and in Mahaweli Systems H & C. As a fresh fruit, mango has a high demand in local markets. Likewise, a considerable amount of foreign exchange could be earned by exporting both fresh and processed mango products.

In India, there are over 1,000 different kinds. However, only a few numbers of cultivars are grown commercially throughout India. For optimal growth and yield, the majority of Indian mango varieties have certain eco-geographical requirements. In comparison to the Southern

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and Western Indian types, the Northern/Eastern Indian cultivars typically bear fruit later. In the very south of India, a few of the native mango species produce fruit all year long. Andhra Pradesh, Uttar Pradesh, Karnataka, Bihar, Gujarat, and Tamil Nadu are the principal mango-producing states. In terms of area, Andhra Pradesh is first, whereas Uttar Pradesh is first in terms of output and productivity. Together, the states of Gujarat, Andhra Pradesh, Uttar Pradesh, Bihar, Karnataka, Maharashtra, West Bengal, and Bihar account for nearly 82% of all production in India.

Mango has high nutritive value, delicious taste and excellent flavour. It plays important role in balancing the diet of human being by providing about 64-66 calories per hundred grams of ripe fruits. It is a good source of vital protective nutrients like vitamins such as vitamin A (1400 I.U.), and C. Mango fruit contains 73.0-86.7 per cent moisture, 11.6-24.3 per cent carbohydrate, 0.3-1.0 per cent protein, 0.1-0.8 per cent fat, 0.3-0.7 per cent mineral, 650-25900 µg vitamin 'A' and 3-83 mg vitamin 'C' per 100 gram fruit. Seed kernels contain 9.5 per cent protein, 8-12 per cent fat, 79.2 per cent starch, 2 per cent mineral matter and 2 per cent fibres. Raw fruits are also used for making chutney, amchur, pickles and juices. The ripe fruits are also utilized for preparing several products like ready to serve, nectar, squash, panna syrup, mango leather, mango powder, toffee, jams, jelly etc. Maximum 57.50 per cent mango orchardists adopt 10 m x 10 m planting distance. Most of the orchardists have full adoption of Dashehari, Langra and Chausa varieties for plantation in mango orchard (Tanwar, 2013).

Mango are juicy stone fruit (drupe) from numerous species of tropical tree belonging to the flowering plant genus *Mangifera*, cultivated mostly for their edible fruit. The majority of these species are found in nature as wild mango. The genus belongs to the cashew family Anacardiaceae. Mango is native to South Asia from where the "common mango" or "Indian mango", *Mangifera indica*, has been propagated worldwide to become one of the most widely cultivated fruits in the tropics. The ripe fruit varies in size, shape, color, and eating quality. Cultivars are variously yellow, orange, red, or green, and carry a single flat, oblong pit that can be fibrous or hairy on the surface. A common monoembryonic cultivar is 'Alphonso', an important export product, considered as "the king of mango".

The mango is propagated by both sexual and asexual methods. However the plant seed leads to enormous variability and are never true to type because it is cross pollinated and heterozygous in nature. The plant raised through seed are tall and spreading type which cause lot of problems in performing various cultural operations and also plants take long time to come in to bearing. therefore

asexual or vegetative methods are adopted to get true to type plants (Singh, 2009).

India overtook China as the second-largest fruit producer in the world in 2021-22, producing 102924 thousand metric tonnes of fruits over an area of 6967 thousand hectares. Mangoes are cultivated on a total area of 2339 thousand hectares in India, where they are produced in an amount of 20336 thousand metric tonnes annually. During the 2021-22 growing season, mango production averaged 8.44 metric tonnes per hectare. In India, a wide range of fruits are grown, with mango, banana, citrus, guava, grape, pineapple, and apple being the most prevalent. The temperate group includes peach, pear, almond, walnut, apricot, and strawberry, whereas the tropical and subtropical groups include papaya, sapota, annona, phalsa, jackfruit, ber, and pomegranate. (Data Source: National Horticulture Board, 2022-23.)

Materials and Methods

The present study was conducted in Meerut district of Uttar Pradesh due to the sufficient area dedicated to mango cultivation in this region. Meerut district comprises 12 community development blocks, out of which two blocks, namely Sardhana and Machhara, were purposely selected based on the need and availability of mango orchards. The revenue villages were arranged in descending order according to the maximum area and number of mango orchardists, and the top 4 revenue villages were selected from each block based on maximum area and production. Ten orchardists were randomly selected from each selected village with the assistance of progressive orchardists and village pradhans, resulting in a total sample size of 80 orchardists for the present investigation. Data were collected using a pre-structured interview schedule covering all aspects of the present study. To ensure reliability and accuracy of the procedure and information, the investigator personally collected data from each individual mango orchardist, either at their farm or home. A developed schedule was employed for collecting comprehensive information. Prior to data collection, the purpose of the interview and the study as a whole were explained to the orchardists. Methodologies of tools are discussed below.

1. Tabular analysis:

For comparison and interpretation of various aspects, knowledge, adoption, and constraints responsible, tabular analysis was used.

2. Percentage:

$$\text{Percentage} = \frac{\text{Frequency}}{\text{Number of respondent}} \times 100$$

Table 1: The constraints of mango orchardists and suggest suitable measures for improvement

Sr. No	Statement	MPS	RANK
1	Unavailability of improved varieties in government nursery.	74	II
2	Less number of trainers training center for awareness of technical know-how.	65	VI
3	Lack of knowledge about application of chemicals & fertilizers in mango orchard.	68	V
4	Short self-life of ripe mango.	51	X
5	Old traditional way of packaging materials.	69	IV
6	Lack of information about suitable inter crops.	75	I
7	Lack of storage facilities in rural area.	58	VIII
8	Testing laboratory is not available.	73	III
9	Lack of confidence to adopt new technology/ practice.	64	VII
10	Involvement of middleman in marketing channel.	55	IX

MPS= Mean per score

The description as well as data from the table 1 revealed that the Lack of information about suitable inter crops got first rank with 93.75 per cent responses in the study area. Most of the orchardists were reported that the all the work of orchard management was done in the traditional style only. Due to lack of knowledge and awareness regarding inter cropping, not any orchardists were following them. Most of the orchardists lease out their orchards for two fruiting year and then after the management of orchard was done by contractors only. Once the orchardists gave the orchard to the contractor, they did not have any further say in the decision marking regarding orchard management.

The data from the table 4.4.1 showed that unavailability of improved quality varieties material got second rank with 92.50 per cent responses in the whole study area 91.25 percent respondents were testing laboratory are not available and Old traditional way of packaging materials 86.25, got rank third and fourth respectively.

Another major problem lack of knowledge about application of chemical & fertilizers reported by more than 85.00 percent orchardists and got fifth rank order followed by Less number of trainers training center about technical knowhow awareness 81.25 percent and Lack of confidence to adopt the new technological practices 80.00 percent and got rank sixth and seventh position respectively. Lack of quality storage facilities in rural area were found 72.50 per cent of the orchardists and got eighth rank.

Involvement of middleman in marketing channels by 68.75 per cent and short self-life of ripen mango fruits was also reported to constraint by 63.75 percent of the orchardists and got ninth and tenth rank order.

On the basis of the findings of the present study the following suggestions

It may be made to increase knowledge and adoption level of mango orchardists for production of quality Mango in the study area.

- Create knowledge and awareness about improved mango production technology to the mango orchardists through trainings, meetings, demonstrations and media

exposure on different aspects of mango production in the study area.

- Government zonal research stations, SAUs, KVKs, NGOs have organised timely training to the mango orchardists on the all aspects of mango production technology for up gradation of technical knowledge regarding mango production technology.
- Conducted trainings and demonstration programmes for the identification of harmful and beneficial insects-pests in the study area for mango orchardists.
- Provide complete information packages about the mango production technology to the farmers through mass media exposure, training, campaign, group discussion, farmer scientist's interaction, demonstrations, farmers' field school and SMS services from time to time for awareness of mango orchardists and application of new mango production technology in mango orchard for promotion of quality mango production.
- Govt. should provide sufficient facilities for technology transfer and field study of mango orchardists and e-choupal for quick transfer of improved mango production technology for mango orchardists.
- Government should provide more risk covering programmes or subsidy facilities to the mango orchardists for reducing the losses of orchardists through communication and information technology system for promotion of quality mango.
- Organize on farm training for farmers on different aspects of mango production technology related to using for cultural, biological, mechanical and chemical methods for reducing insect- pests, diseases and weeds in the mango orchards.
- Provide regular electricity in rural area for proper storage of mango fruits and plant protection materials like bio-agents, bio-fertilizer etc.
- Increase numbers of information / training centres / mango research station for quality mango production and quick transfer of mango production information technology in the study area.

Conclusion

Constraints refer to the item of difficulties faced by Mango orchardists in actual adoption of Mango production technology. It may be seen that altogether 10 constraints were faced by Mango orchardists in the adoption of Mango production technology in the study area. It was observed that the lack of information about inter cropping got 1st rank with 93.75 percent responses in study area followed by unavailability of improved quality varieties material got 2nd rank with 92.50 per cent responses of orchardists in the whole study area. Suggestions may be made to increase knowledge and adoption level of mango orchardists for production of quality Mango in the study area. The mango orchardists through trainings, meetings, demonstrations and media exposure on different aspects.

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References

1. Islam S, Pramanik MEA, Salam MA, Islam MA, Sarker P. Correlation and co-efficient analysis of mango growers' constraints and their characteristics in Chapai Nawabgonj district of Bangladesh. *International Journal of Sustainable Agricultural Technology*, 2013; 9(2):17-22.
2. Jadhav B. Technological gap in adoption of recommended practices of mango cultivation. Master's thesis submitted to University of Agricultural Sciences, Dharwad, 2009.
3. Kharb RK, Verma NS. Constraints in fruit cultivation as by orchardists of Haryana. *Horticultural Sciences*, 2005;34(1/2): 62-63.
4. Patil A.B. A study on constraints of grape exporting farmers of Maharashtra State. Ph.D. Thesis, Univ. Agric. Sci., Dharwad, 2008.
5. Raut PN. Production constraints of orange cultivation in Nagpur district of Maharashtra. *Asian Journal of Extension Education*, 2006; 25:1-4.
6. Shukla SK, Mishra D, Adak T, Kumar K. Constraints in production to consumption chain of mango (*Mangifera indica* L.) in Malihabad, Lucknow, Uttar Pradesh. *Agricultural Sciences*; 2013;5(1):87-91.
7. Singh KV, Singh GP, Priyadarshi A. Extent of adoption of improved practices of mango production by mango growers in Muzaffarnagar district of Uttar Pradesh. *Indian Research Journal of Extension Education*; 2010;10(3):107-113.
8. Thorat KS, Suryawanshi DB, Ban SH. Technological gap in adoption of recommended cultivation practices of mango growers and constraints faced by them. *Mysore Journal of Agricultural Sciences*, 2012;46(1):160-163.
9. Tanwar SR, Singh D, Yadav RN, Singh DK, Singh VK. Studies on adoption level of orchardists to package of practices for mango production. *Annals of Horticulture*, 2013;6(1):99-106.
10. Ugehe FD, Iyango PO, Swem TJ. Mango (*Mangifera indica* L.) fruit production and production constraints in Gbokolocal government area of Benue state. *Production Agriculture and Technology Journal*, 2012;8(1):164 -174.
11. Yadav RN, Triveni D, Singh D, Singh VK. Constraints faced by mango orchardists and suitable strategy for promotion of quality mango production. *Progressive Agriculture*, 2010; 10(1):106-110.