

Analysis of Guava Farming in Sirsa District of Haryana

Manisha, Research Scholar (Economics), Deptt. of Arts, Craft and Social Sciences, Tanta University, Sri Ganganagar (Raj.)
Dr. Randheer Singh, Assistant Professor, Research Supervisor (Economics), Deptt. of Arts, Craft and Social Sciences, Tanta University, Sri Ganganagar (Raj.)

ABSTRACT

Introduction: *The production of citrus fruits on a massive scale in tropical and subtropical environments is illustrative of their significance to the economy of the whole globe. Citrus has a significant influence on the socioeconomic system as well as the cultural landscape of the whole society.*

Aim of the study: *the main aim of the study is to Analysis of Guava Farming in Sirsa District of Haryana*

Material and method: *Geographical considerations in site selection were informed by the study's overarching goal of elucidating the production and marketing of guava.*

Conclusion: *it is concluded that the guava was hailed as a lucrative cash crop with a reputation for its exquisite flavour and high nutritional value.*

1. INTRODUCTION

1.1 OVERVIEW

Growing fruit may be a demanding and rewarding pastime, as well as a pleasant and pleasurable experience. There are several compelling arguments in favour of cultivating fruit trees. Your garden will be more colourful and interesting if you have fruits in it. Growing a large quantity of fruit in a relatively short space is entirely possible. Fruits that are purchased from a store are often selected, transported, and sold before they have reached their full ripeness. Additionally, stores typically carry varieties that are the most visually appealing but may not always have the greatest flavour. Additionally, fresh garden fruits are an excellent source of a variety of nutrients, including vitamins, minerals, carbs, and fibre, and they will provide your family with food that is tasty, delectable, and nourishing. In addition to this, the flavour of the fruits you cultivate will be much enhanced in comparison to the flavour of fruits purchased from the supermarket. The establishment of an orchard is an investment made over a long period of time and calls for careful planning, the selection of an appropriate location and site, a planting method and planting distance, varieties, and nursery plants to provide the highest possible level of output. By planting fruit trees in containers, you may still have the satisfaction of harvesting fresh fruits from your garden even if you have a restricted amount of room. You may start any kind of fruit tree out in a container and then move it to its permanent location after a few years. You might alternatively go for a dwarf type, which has a smaller stature and is more suitable to being grown in a container. If you give careful consideration to the species and subspecies of a fruit when you plant it, you will be able to gather fruit that is fit for dessert consumption from early summer all the way through the autumn. The term "edible landscaping" refers to the practise of using plants that may be eaten to enhance the appearance of a space. Apples, citrus fruits, blueberries, and figs are just a few examples of fruits that may be grown into beautiful decorative plants. Some individuals believe that the most visually beautiful landscape has a natural environment with plants strategically distributed throughout the landscape. However, this results in a more difficult maintenance schedule.

1.2 ECONOMIC ANALYSIS OF GUAVA (PSIDIUM GUAJAVA L.)

Guava (*Psidium guajava* L.), sometimes known as the "poor man's fruit" or the "apple of the tropics," is a well-liked tree fruit that thrives in tropical and subtropical climates. Its original range encompasses all of tropical America, from Mexico to Peru. India, which has a production of 2.27 million metric tonnes and an area coverage of 0.20 million hectares, is one of the countries that has embraced it. Haryana, on the other hand, is the most significant guava producing state among the several states, with a total of 137022 MT produced during the 2017-18 agricultural year and an area under cultivation of 12089 hectares (Horticultural department government of Haryana). In today's world, guava is regarded as one of the most elegant, lucrative, and nutritionally beneficial crops. It is used for both fresh consumption and the production of processed goods. In addition to this, it provides high economic returns while

requiring a relatively little amount of input, which is one of the reasons why a number of farmers have begun engaging in guava production on a commercial basis. However, the selling of guava crop is one of the most significant challenges that producers are confronted with, and it has a direct influence on the prosperity of the growers. As a result, during the agricultural year 2017-2018, an effort was made to conduct an economic study of guava production in the Sonapat area of Haryana.

1.3 RECENT ADVANCES IN ENHANCING THE PRODUCTIVITY OF GUAVA (PSIDIUM GUAJAVA L.) THROUGH HI-TECH PRACTICES

The cultivation of fruit is very lucrative since it results in an increase in the number of job prospects and because it enables commercialization in the agricultural sector. In addition to this, it offers a plethora of possibilities for the maintenance of a big number of agro-industries, which in turn creates a considerable number of job prospects. The adoption of more sophisticated technology by Indian farmers has led to a significant rise in the country's annual horticultural output in recent years. The increased output is the direct result of the increased land area. In India, the amount of land devoted to horticulture has expanded by 2.6% each year on average over the last decade, while yearly output has climbed by 6%. The agricultural output of 285.21 Million MT from an area of 95.45 Million Hectares is surpassed by the horticultural production of 314.67 Million MT of horticultural produce from an area of 25.87 Million Hectares during the 2018-2019 growing season. Since 2004-2005, the total amount of fruit that was produced has gone from 50.9 MT to 96.75 MT at the end of the 2018-19 fiscal year. Fruit crops are now in second place in terms of output, providing 31.5% of the total. It is vital to boost output using the resources that are available in order to meet the rising demand that has resulted from the dramatic rise in population. The highest amount of vitamin E was found in the Allahabad Safeda tissue (19.4 mg/g), followed by the Lucknow 49 tissue (17.53 mg/g) and the Arka Kiran tissue (11.34 mg/g). demonstrate that guava fruits possess powerful antioxidant properties, which may be the cause of its pharmacological benefits. Increasing the productivity of the culture via the use of high-tech methods is one way to accomplish this goal. This article compiles and discusses modern high-tech methods that have a favourable influence on the production of guava, and it does so in the context of an analysis.

2. LITERATURE REVIEW

Bal, Santanu & Prasad, J.V.N.S & Singh, Vinod (2022) The technical bulletin is a collection of information relevant to the causes and repercussions of recent heat waves of 2022 on crops, horticulture, livestock, and fishing sector of Indian Agriculture. This material was compiled in 2022. In addition, the technologies that have been created for the purpose of reducing the effects of heat stress as well as the performance of these technologies during the heatwaves that occurred in several states in 2022 are also discussed.

Jain, Shikha & Saini, Shikha & Jagga (2022) As a consequence of a continuous decrease in the fraction of arable land that is accessible, increasing energy and land costs, and a rise in demand for horticultural products, the idea of high-density planting of horticultural crops has gained traction in recent years. It is an innovative concept that allows for the accommodation of the maximum number of plants per unit area, with the goals of reducing the gestation period, increasing productivity, obtaining the maximum return per unit of tree volume, and enhancing the quality of the fruit, all without imparting the plant and soil fertility. In the early 1960s, the HDP method was first pioneered in Europe for the apple industry.

Ashwini, N. & Kumar, Pramod & Joshi (2022) Guava cv was the subject of this inquiry that was carried out. During the two consecutive wet seasons of 2017 and 2018, lalit were positioned at 2 metres and 1.5 metres apart at the plant-soil interface of the meadow. At the bud burst stage, foliar applications of humic acid were performed at two different concentrations, namely 30 ml/L (HA30) and 60 ml/L (HA60). Additionally, bio-inoculants were applied to the rhizosphere of the trees at two different combinations, namely B1: PSB @ 10 ml/plant Azotobacter chroococcum @ 10 g/ plant, and B2: PG (NPK80). The trial used a Randomized Complete Block Design, with eight different treatment combinations, each of which was reproduced three times, and a control was also included.

Soni, M. & Meel, Birbal & Saxena (2021) Experiments were carried out to investigate the effects of intercropping Kinnow with vegetable crops on production as well as the economic performance of the system. There were five different treatment combinations, and they were as follows: I Kinnow + (Onion (*Allium cepa*)-Indian squash (*Citrullus lanatus* var. *fistulosus*), (ii) Kinnow + (Radish (*Raphanus sativus*- Cowpea (*Vigna unguiculata*), (iii) Sole Onion-Indian squash, (iv) Sole Radish-C Intercropping had a beneficial impact on the height, girth, and canopy spread of Kinnow compared to the plantation that it was growing in alone. When compared to growing just Kinnow, the fruit production of intercropped Kinnow saw a considerable increase thanks to intercrops.

Yogi, Vikram & Kumar, Pramod & Singh (2020) In the northwestern section of India, which is comprised of the states of Punjab, Haryana, and Rajasthan, there is a significant amount of kinnow cultivation. The investigation of 180 kinnow farmers from three districts in the northwestern part of India, specifically the Fazilka and Bathinda districts of the state of Punjab and the Sirsa district of the state of Haryana, revealed the existence of a number of marketing channels for the marketing of kinnow, each of which has varying levels of efficiency. In spite of what most people think, conventional marketing channels (TMC) really gave a 15–19% larger net gain in the event that price and yield risk was connected with the farms. Farms that are part of value chains that have strong value chain finance (TMC) tend to be more productive than farms that are part of value chains that have poor value chain finance and that include new marketing channels (EMC).

3. METHODOLOGY

3.1 Sampling Design

Geographical considerations in site selection were informed by the study's overarching goal of elucidating the production and marketing of guava. From a horticultural perspective, the Sirsa District possessed several unique characteristics, the most notable of which was the presence of three very different climates—the temperate, subtropical, and tropical climates. There were no other Districts in Harayan State that included many distinct agroclimatic zones. The Sirsa District was chosen because it produced the largest guava crop in Harayan in 2019-2020, covering an area of 1229 hectares. There were 7 taluks in the Sirsa District. Kurukshetra and Ambala taluks had the greatest concentration of guava farms, whereas Sirsa taluks only had a few scattered plots. Guava was not cultivated at all in the Veda sandhur and Palani taluks. So, only villages in those two taluks were included for the sample.

3.2 Tools Adopted for The Study

The variables impacting guava yield were studied using a production function model based on the Cobb-Douglas type. The marginal value productivity of each input variable was compared to the acquisition costs in order to assess the resource-use efficiency in Guava Cultivation. Compound growth rates were computed using semi-log or exponential functions to determine expansion in Guava plantation size, output, productivity, and international sales.

4. RESULTS

4.1 Export Marketing Of Guava

A new market for fresh fruits might be created as the trend toward vegetarianism spreads throughout the developed world. Although India has a vast agricultural production capacity and cheap production costs, the country only accounts for a small percentage of the world's total exports of food and agricultural products. India contributed just 0.5% of global fruit exports while producing over 15% of the world's fruit. After learning about the different marketing functions and how they apply to guava, it would be beneficial to evaluate the possibility for growing the guava company by targeting international markets. The export of guavas from India, which is a major producer of the fruit, has been on a downward trend, making such research more pertinent in this context. The majority of India's guava exports went to Bangladesh, Kuwait, Saudi Arabia, and the United Arab Emirates in very modest amounts. As a result, India may have expanded her fruit exports to several countries.

4.1.1 India's Guava Exports (in Volume)

Table 4.1 shows the volume of India's guava exports from 2010-11 to 2019-20, along with the percentage growth or reduction from the prior years.

TABLE 4.1 India's Guava Exports (Volume-wise)

<i>Year</i>	<i>Quantity (in Kilograms)</i>	<i>Increase or Decrease over the Previous Year</i>	<i>Percentage of Increase or Decrease over the Previous Year</i>
2010-11	670		
2011-12	890	220	32.84
2012-13	1372	482	54.16
2013-14	2195	823	59.99
2014-15	3340	1145	52.16
2015-16	5360	2020	60.50
2016-17	3393	-1967	-36.70
2017-18	2496	-897	-26.44
2018-19	1691	-805	-32.25
2019-20	516	-1175	-69.49

Table 4.1 shows that the lowest quantity of guava exported was 670.16 kilogrammes in 2010-2011, the greatest was 889.72 kilogrammes in 2011-2012, and the lowest was 5359.88 kilogrammes in 2015-2016. Since then, it has steadily fallen, and by 2019–20, it had dropped to a pitiful 516.3 kg. Since 2015–16, there has been a steady decline in Value as well. The absence of agro processing units, along with the low quality of the guava that was harvested, led to this downward trend.

4.1.2 India's Export Earnings from Guava

TABLE 4.2 India's Guava Exports (Value-wise)

<i>Year</i>	<i>Amount (in Lakhs of rupees)</i>	<i>Increase or Decrease over the Previous Year</i>	<i>Percentage of Increase or Decrease over the Previous Year</i>
2010-11	128		
2011-12	172	44	34.38
2012-13	348	176	102.33
2013-14	563	215	61.78
2014-15	693	130	23.09
2015-16	983	290	41.85
2016-17	773	-210	-21.36
2017-18	417	-355	-45.98
2018-19	304	-113	-27.27
2019-20	113	-191	-62.83

Table 4.2 displays the annual value of India's guava exports from 2010-11 to 2019-20, together with the percentage growth or reduction from the preceding year.

According to Table 4.2, the guava export market was worth a total of 128 Lakhs of Rupees in 2010-11, 348 Lakhs of Rupees in 2012-13, and a record-breaking 983 Lakhs of Rupees in 2015-16. Since then, it has been steadily falling, and in 2019-20, it amounted to a meager 113 Lakhs of Rupees. This downturn was caused by a decline in guava exports.

The Compound Growth Rate of Guava Exports was computed to shed light on the Rate of Growth of Exports in Terms of Both Volume and Value. Table 4.4 displayed the results that were obtained.

Table 4.4 Trend, Growth Rate and the Magnitude of Variability of the Exports of Guava from India during the Period 2010-11 to 2019-20

Particulars	Semi-log		R ²	CGR (% Annun)	CV (%)
	Constant	Regressionco-efficient			
Quantity	7.183 (0.719)	0.045 ^{NS} (0.107)	0.029	10.917	73.44
Values	5.537 (0.709)	0.047 ^{NS} (0.106)	0.032	11.429	73.73

Table 4.4 shows that the guava export trend coefficient has been positive, which indicates that guava exports have been on the rise. Table 4.84 shows that over the period of analysis, both the quantity and value of guavas exported from India rose at a compound annual growth rate of 10.92% and 11.42%, respectively. The exports of guava from India fluctuated by 73.44 percent in terms of quantity and by 73.73 percent in terms of value throughout the time period analysed here.

5. CONCLUSION

The guava was hailed as a lucrative cash crop with a reputation for its exquisite flavour and high nutritional value. The poor man's apple — guava — consistently produced a large harvest with respectable economic returns on modest investments of time and resources. Commercial Guava varieties were mostly cultivated and harvested in India, Pakistan, and Brazil. Production of guavas had previously been dominated by India. In terms of land area and yield, guava was formerly ranked fifth in importance in India, just after mango, citrus fruit, banana, and apple. Allahabad, located in the state of Uttar Pradesh, is well recognised as the epicentre of India's guava industry. In terms of guava output, Harayan ranked 11th among the states. About 92,500 metric tonnes of guava were harvested from an area of almost 10,000 hectares in Harayan. Allahabad Safeda and Lucknow 49 guavas were the most sought after in Harayan. It's worth noting that the Guava was completely ripe and tasty. Fresh guava was popular, but it was also used to make candies, jellies, jams, and juice. The vitamin C and iron content of guava juice was well-known to be very high. Many tropical alcoholic beverages made use of the tasty fruit juice Guava Nectar because its sweetness went so well with booze. Sorbet and ice cream might be made by combining it with carbonate water to make a refreshingly chilly drink. At the current time, people all around the globe are drinking the incredibly nourishing Guava juice. Consumption of guava, both as a table fruit and in the form of its natural juice, has been on the rise all over the globe in recent years, perhaps as a result of people's increased concern for their own health and their appearance. While very perishable in their natural state, these fruits had untapped potential in their processed forms, which meant that people all over the globe would have access to and benefit from them.

REFERENCES

1. Bal, Santanu & Prasad, J.V.N.S & Singh, Vinod. (2022). Heat Wave 2022: Causes, impacts and way forward for Indian Agriculture. 10.13140/RG.2.2.15040.20482.
2. Jain, Shikha & Saini, Shikha & Jagga, Shubham & Maurya, Poonam & Ingole, Aditya & Subhasmita, Subhashree & Kiran, Bhargav. (2022). High Density Planting in Sub Tropical Fruit Crops. 10.22271/int.book.165.

3. Ashwini, N. & Kumar, Pramod & Joshi, Ak & Sharma, Naveen & Sharma, Nivedita & Sharma, Nisha. (2022). Synergistic action of humic acid substances and bio-inoculants in guava (*Psidium guajava* L.): impact on growth traits, fruiting, nutrient profiling and rhizosphere stoichiometry in meadow rainy season plant-soil interface. *Journal of Plant Nutrition*. 1-15. 10.1080/01904167.2022.2046069.
4. Soni, M. & Meel, Birbal & Saxena, Anurag & Nangia, Vinay & Yadava, N.D.. (2021). Intercropping with vegetables on productivity and economic returns of Kinnow in arid region. *Indian Journal of Horticulture*. 78. 211-215. 10.5958/0974-0112.2021.00030.X.
5. Yogi, Vikram & Kumar, Pramod & Singh, Dharam & P., Prakash & Kar, Amit. (2020). Are traditional marketing channels of kinnow really bad?. *Indian Journal of Traditional Knowledge*. 19. 846-860.
6. Gill, Mandeep & Khehra, Savreet & Gupta, Navjot. (2018). Impact of intercropping on yield, fruit quality and economics of young Kinnow mandarin plants. *Journal of Applied and Natural Science*. 10. 954-957. 10.31018/jans.v10i3.1814. Singh, Shailesh. (2018). Characterization of Kinnow Mandarin Fruit Juice Stored under Incubator. *Annals of biology*. 31. 126-129.
7. Singh, Shailesh. (2018). Characterization of Kinnow Mandarin Fruit Juice Stored under Incubator. *Annals of biology*. 31. 126-129.
8. Pareek, Pawan & Bhatnagar, Prerak & Chander, Subhash. (2017). Effect of Nitrogen and Vermicompost Interaction on Growth and Development of Kinnow mandarin in Vertisols of Jhalawar District. *Chemical Science Review and Letters*. 6. 1555-1560.
9. Bakshi, Parshant. (2017). Effect of Deficit Irrigation Scheduling on Yield and Quality of Kinnow Mandarin Fruits. *International Journal of Current Microbiology and Applied Sciences*. 6. 261-269. 10.20546/ijcmas.2017.607.031.
10. Ghosh, Saswati & Sarkar, Sukamal & Sau, Sayan & Karmakar, Sruti & Brahmachari, Koushik. (2017). Influence of Guava (*Psidium guajava* L.) based Intercropping Systems on Soil Health and Productivity in Alluvial Soil of West Bengal, India. *International Journal of Current Microbiology and Applied Sciences*. 6. 241-251. 10.20546/ijcmas.2017.611.029.

