



## Horticulture agriculture in India: prospects, challenges and achievements

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### Abstract

This research paper studies the possibilities, challenges and achievements of horticulture in India. Plants are absolutely essential for life. No basic work from breathing to eating and drinking would be possible without plants. Plants not only act as food sources but also release oxygen and help maintain the water table. The simple fact of the matter is that we cannot survive without plants. Many types of plants grow in the forest, people cultivate and grow certain plants, shrubs and shrubs in their homes or yards. This activity is known as gardening. Horticulture agriculture is truly a wonderful blend of art and science. In which fruits, vegetables, spices, flowers, medicinal and aromatic flowers are cultivated. The field of horticulture involves not only the beautification of the surroundings, but also the study of plants and their importance. Horticultural agriculture ranges from crop production of plants to soil preparation, climate, irrigation systems, chemical fertilizers, use of pesticides, market prices and production costs.

**Keywords:** horticulture agriculture, importance of horticulture, horticulture prospects and challenges in India, horticulture agriculture priority area, achievements and findings of Indian horticulture

### Introduction

#### Horticulture Agriculture

Gardening is a Greek word that literally means "garden farming". It has Greek roots similar to agriculture, but it means "farm farming". As can be seen by their roots, the words mostly differ in scale. However, history has shaped them to be further separated. While horticulture deals with many species and how they can occupy a tight space, agriculture focuses on producing large quantities of a single species. Agriculture is also concerned with the production of animals for food and other products, which is not horticulture.

Another science related to plants is agronomy and agricultural geography. Geographers focus on agriculture, the unique anatomy that makes them, and the chemical processes that drive their lives. Gardening is more concerned with how these plants live and reproduce, and this means that plants can be used to nourish, harvest and maintain plants in a garden. It is also concerned with making plants attractive and attracting visitors. While the differences may seem arbitrary, these characteristics operate in different sectors of the economy. Agronomists and geographers focus on the production of crops on a large scale, while horticulturists focus on many varieties and they can be combined both logically and aesthetically. Gardening provides humanity with new varieties and methods of gardening, which can then be applied on a large scale.

#### Field of study

India is one of the largest countries in the world. The latitudinal expanse of India is 08°04 minutes to 37°06 minutes North and 68°07 min to 97°25 minutes East. The total area of India is 32,87,263 sq km from north (Jammu and Kashmir) to south (Kanyakumari), the total length of India is 3,214 km while India's width is from east (Arunachal Pradesh) to west (Gujarat). 2,922 km. India has a total land border of 15,200 km while the coastline is 7,516 km. This is a wonder in itself. On the one hand, there is

heavy snowfall in the Himalayan region in the north. At the same time, the temperature in the plains is quite hot. Whereas, the temperature remains largely the same in the marine areas. Many different climate changes within a country are unique in their own right.

#### Aim

The objectives of the research paper presented are as follows.

1. The nature of horticulture agriculture in India has been clarified
2. The importance and achievements of horticulture agriculture in India have been studied.
3. The possibilities and challenges of horticulture in India have been studied.

#### Speculation

1. The growth of Horticulture Agriculture in India is continuously increasing.
2. Efforts are being made to manage horticulture agriculture.

#### Method of study

Primary and secondary data have been used in the presented research paper. The data has been compiled through questionnaires, schedules, interviews, personal contacts and diaries, magazines, newspapers and various websites and books. The nature of this study is descriptive.

#### Importance of Horticulture

Many types of plants grow in the forest, people cultivate and grow certain plants, shrubs and shrubs in their homes or yards. This activity is known as gardening. While this may appear as a hobby for some, the fact is that gardening is actually quite beneficial and, therefore, important to us. Gardening is a fairly physical activity. This includes weeding, watering plants, mowing, mowing and harvesting –all of which require labor from gardeners. Therefore, it becomes an excellent addition to your exercise routine.

Gardening is also a very practical activity. This allows you to grow your own vegetables and fruits and ensures that you have a healthy meal on the table. When you cut vegetables from your garden, you know you're getting the freshest produce.

Gardening for aesthetics appeals to the human need for beauty. Decorative gardening is on our side which loves beauty. In addition, flowers are part of most occasions such as births, anniversaries, weddings, birthdays and funerals.

Gardening also helps to sharpen problem-solving skills. Researching the best ways to grow your garden, experimenting with different techniques and designing irrigation systems that work for you help improve your skills in creativity, problem solving, and planning.

Horticulture crops are of great importance in the Indian rural economy. Since 1950, the production of horticultural crops has increased almost 10 times. Horticulture crops have become the main source of income for the north-eastern states of the country. For the development of horticulture, the government has merged various schemes and organized them as "Integrated Horticulture Development Mission".

### **Horticulture Prospects and Challenges in India**

In India, about 25-30 percent of fruits and vegetables become wasted after harvesting, due to which they do not get a fair market price. To prevent this damage, it is necessary to have proper storage facilities, especially cold storage. India is the second largest producer of fruits and vegetables in the world. India has to import them after harvest and due to lack of food processing facilities. Expansion of processing facilities can reduce imports of processed fruits and vegetables. The number of processing units of only horticultural crops is much less than their production. Efforts should also be made to increase their number. Horticultural crops like Kafal, Malta, Orange, Buran etc. are produced in hilly areas, especially in remote areas of Uttarakhand, but due to lack of proper connectivity with roads and markets, farmers do not get the right price. Promoting the development and consumption of nutritious horticulture crops can lead our country towards nutritional security. To make horticulture farming more profitable, farmers should adopt intensive horticulture instead of traditional farming. For this, they can use dwarf varieties of various fruits developed by scientists, such as amrapali, extract and aruna, lemon paperwork, apple red chief, red spur etc.

### **Horticulture Agriculture Priority Areas**

Horticulture (fruits, nuts, fruits, vegetables including potatoes, tuber crops, mushrooms, ornamental plants including cut flowers, spices, planting crops and medicinal and aromatic plants ) is an important contributor to the economic development of many states of the country and its contribution is to agriculture. D. The cry of a cuckoo reminding lovers of each other. The contribution is 30.4 percent. ICAR The Horticulture Division of India plays a major role in this technology-based development. Increasing and utilizing genetic resources, increasing production capacity and reducing production losses in environmentally friendly ways are the priority of research in this area.

### **Horticulture Achievements in India**

It is the second largest producer of fruits and vegetables in the world.

The top producing countries are mango, banana, coconut, cashew, papaya, pomegranate etc.

The country is the largest producer and exporter of spices.

It ranks first in the productivity of grapes, bananas, cassava, peas, papaya etc.

Exports of fresh fruits and vegetables accounted for 14 percent of value and processed fruits and vegetables 16.27 per cent.

- Proper focus on horticulture increased production and exports. A 7-fold increase in horticulture yield increased nutritional security and employment opportunities.
- The total 72,974 genetic resources include 9240 fruits, 25,400 vegetable and tuber crops, 25,800 plants and spices, 6,250 medicinal and aromatic plants, 5300 ornamental plants and 984 mushrooms.
- Molecular characterization of the available germplasm of many horticultural crops such as mango, banana, citrus fruits, etc. was carried out.
- Hybrids of 1,596 highly productive varieties and horticultural crops (fruits - 134, vegetables - 485, ornamental plants - 115, planting crops and spices - 467, medicinal and aromatic plants - 50 and mushrooms - 5) were developed. As a result, there has been a significant increase in the production of horticultural crops like banana, grapes, potatoes, onions, cassava, cardamom, ginger, turmeric etc.
- Quality varieties of apple, mango, grapes, banana, orange, guava, litchi, papaya, pineapple, chikoo, onion, potato, tomato, peas, cauliflower etc. were developed for export.
- Varieties were developed for the purpose of processing in various fruits, vegetables, medicinal and aromatic plants and resistant to various biotic and abiotic stresses.
- Transgenic varieties of eggplant and tomato were developed using biotechnology.
- Advanced techniques were developed to produce disease-free, good quality planting material for citrus fruits, bananas, guava, potatoes, cassava and sweet potatoes. Micro-amplification techniques standardized for various fruits, spices and botanically grown plants.
- Serological and PCR-based diagnostic techniques have been developed to test for viruses, bacteria, fungi and nematodes in bananas, citrus fruits, grapes and pepper.
- The material (Dogrizz and Pwt) was identified for drought and salinity tolerance in grapes. The basic ingredients of citrus fruits, apples, guava and mangoes were identified.
- Guava and intensive planting techniques were developed in bananas and pineapples, for the vertical and ground use of the site.
- Beehive management practices were standardized for various temperate and temperate fruits for the use of solar energy.
- The technology was developed to renovate the old orchards of mango, guava, plum and amla.
- Water and nutrition efficiency was increased for many horticultural crops by micro irrigation method and fertilization technique.
- Inter-cropping and multi-layered cropping systems were developed for coconut, arecanut, plum and gooseberry for sustainable benefits.

- Good agricultural practices were developed for medicinal plants such as white musli, lemon grass, palmarosa, army etc.
- In a short span of time, India has made significant progress in the production of cut flowers and medicinal plants.
- Mushroom production has picked up in the last decade, greatly improving the socio-economic status of mushroom growing farmers and entrepreneurs. Highly productive oyster and blue oyster mushroom species and production technology have been standardized.
- Safe production has been standardized for the production of quality of various vegetables and ornamental plants. This technology is gaining popularity due to high productivity, quality products and low prices.
- To reduce dependence on toxic pesticides, bio-reagents such as trichogramma, NPV, pythium, pacillium etc. were developed. Trichoderma, P. Effective strains of Theoresenra, Aspergillus, etc. were isolated for the management of gum germs, such as Fusarium, Regectoria, Pythemes, Phytophthora and plant parasite sources.
- By developing fruit harvesters, grading and harvesting machines, dryers, etc., farm machinery was used to increase farm harvesting and to increase crop efficiency.
- Low-cost eco-friendly quiet room has been developed for field storage of fruits and vegetables.
- Databases, information and expert methodology on germplasm resources, pests and diseases in potatoes, grapes, spices have been developed. Many value-added products of coconut, mango, guava, amla, litchi, potato, tuber crops, mushrooms etc. have been developed.
- Cassava making wine, cassava starch-based plastic, cassava flour and handmade cassava chips machines have been patented.
- Crop specific training and demonstration programmes for dissemination of technology in the respective institutes/institutes. Directorates/ Are run by national research centers.

### Conclusion

Horticultural crops help in keeping the environment clean. By increasing the area of these crops, the balance of gasses like oxygen and carbon dioxide in the atmosphere is maintained. Ornamental plants and fruit trees can be planted in non - agricultural areas other than the city and village. Their planting also supports other animals and birds and ultimately promotes biodiversity. In many areas of the country, soil and soil erosion continues. Horticultural crops can be grown in these areas to protect against soil erosion. The roots of fruit and ornamental trees extend far and wide, which holds the soil. Therefore, horticultural crops play an important role in soil conservation. Now organic agriculture is being used in the production of many vegetables. Crops grown without chemical fertilizers and pesticides are beneficial to the health of both man and the environment. Horticulture agriculture can play an important role in achieving the goal of doubling farmers' income in the next 5 years. This will not only increase the income of farmers but will also increase employment opportunities in rural areas. Coordinated efforts can brighten India's future in the horticulture sector.

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