



HORTICULTURES DEVELOPMENT IN INDIA

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ABSTRACT :

Horticultures crops play an important role in all human nutrition, preventing disease and contributing to the nation's development and prosperity. The horticulture sector encompasses a wide range from crops of fruits crops, vegetables crops, potato crops, tuber crops, ornamental crops, medicinal and aromatic crops, spices and plantation crops. Fruits and vegetables are rich source of vitamins, minerals, proteins and carbohydrates that are essential in human diet. Flowers and ornamental crops enhance aesthetic value of our environment while medicinal crops yield pharmaceutical constituents. The horticulture assumes great importance in food and nutritional crops, general health and well being of our population of our country. Organic horticulture, quality management and safety assumed special significance.

KEYWORDS : Horticultures crops play , spices and plantation crops , minerals, proteins.

INTRODUCTION

Horticultures production and cultivation process of continue in the agricultures. Horticulture crops generate significant employment opportunities for the rural and urban population mainly rural farmers. Horticulture crops from a vital role of the Indian agricultural production. India is second largest producers of fruits and vegetables in the world. India is contributing 11.2 per cent share in global fruits producing in the world. India is next only to China in area and production of vegetables and occupies prime position in the production of cauliflower, second in onions and third in cabbage in the world. India is also made noticeable advancement in the production of flowers. India is maintained leadership in the production of many commodities like mango, banana, acid lime, coconut, areca nut, cashew nut, ginger, turmeric and black pepper. India occupied First place in production of mango, banana, papaya, pomegranate, sapota and aonla. It is essential to mention that production and productivity of banana and sapota is the highest in the world.



It clearly, banana, mango and citrus together dominated the world scenario in acreage around 66 per cent during the year 2006-07. But in terms of production banana with around 36 per cent share was ahead of mango and citrus. Among the fruits, papaya followed by the banana indicated higher productivity in comparison to the other fruits crops.

Horticultures production is the main focus of present and future agricultural development in India as well as

nations. All the crop value of agriculture crops particularly horticultural crop value is high. India is bestowed with a varied agro-climate, which is highly favorable for growing a large number of horticultural crops such as fruits, vegetable, root tuber, ornamental, aromatic plants, medicinal herbs, spices and plantation crops like coconut, areca nut, cashew nut and cocoa.

The trend of horticultural development by "Golden Revolution" (GR) recording a growth rate of six per cent per annum and enhanced contribution of GDP of agricultural sector in India.

Fruits

India is a large range of varieties of fruits in this basket and account for the percentage of 13 per cent of the world total fruits production in India. Mango, banana, citrus, pineapple, papaya, guava, cheeku, jackfruits, sapota, pineapple, litchi and grape, among the tropical and sub-tropical fruits; apple, pear, peach, plum, apricot, almond and walnut among the temperate fruits and aonla, ber, pomegranate, annona, fig, phalsa among the arid zone fruits are important. India leads the world in the production of mango, banana, cheeku and acid lime and in productivity of grapes per unit land area.

India is the largest producer of mango, banana, cheeku and acid lime in the world. India emerged as second largest producer of fruits by contributing more than the 13 per cent share in global fruits production in the world. India occupied first place in production of mango, banana, papaya, pomegranate, sapota and aonla. It is essential to mention that production and productivity of banana and sapota is the highest in the world.

Vegetables

India is a tropical, sub-tropical and temperate region. India is many kinds of vegetables production belonging to different group, namely, solanaceous, cucurbitaceous, leguminous, cruciferous, root crops and leafy vegetable are grown in India. India is important vegetable crops grown in the country are tomato, onion, potato, tapioca, brinjal, cabbage, cauliflower, okra, peas, sweet potato and others. India ranked as the highest producer of vegetables. In the world, India occupied first position in the production of cauliflower, second in onion and third in cabbage.

Flowers

Through out the year cultivation has been practiced in India since times immemorial, floriculture has blossomed into a viable business only in recent years. Increased growing of contemporary cut flowers like rose, gladiolus, tuberose, carnation, etc, has led to their use for bouquets and arrangements for gifts, as well as decoration of home, work place and functions. Flower availability of diverse agro-climatic conditions in the county facilitates production of all major flowers throughout the year in the flowers all over the country.

Spices

Spices constitute an important group of horticultural crops and define as vegetable products or mixture thereof, free from extraneous matter used for flavoring, seasoning and imparting aroma in foods. The term applies equally to the production in the whole from or in the ground from. India is known as the home of species and produces a wide variety of spices like black pepper, cardamom small and large cardamom ginger, turmeric, chili and a large variety of tree and seed spices.

Plantation Crops

Plantation crops constitute a large group of crops. The major plantation crops include coconut tree, areca nut, oil palm, cashew nut, tea, coffee and rubber; the minor plantation crops include cocoa. The total coverage is comparatively less and they are mostly confined to small holdings. An important role in view of their export potential as well as domestic requirements and in employment generation and poverty alleviation programmers particularly in rural area sector.

India is also the largest producer and consumer of cashew nuts. The cultivation of vanilla in India started in 1990s and was confined mostly to Karnataka and Kerala to a lesser extent in Tamil Nadu, Northeast region, Lakshadweep and the Andaman and Nicobar Islands. India is the third largest producer of coconut and leads 90 coconut-producing countries of the world. It occupies a number one position in areca nut production. As a result, horticulture is not only an integral part of food and nutritional security, but also an essential ingredient of economic security.

Medicinal and Aromatic Plants

Medicinal and aromatic plants have been used in the country for a long time for their medicinal properties. About 2000 native plant species have curative properties and 1300 species are known for their aroma and flavor. The Indian systems of medicines, popularly known as Ayurveda, Unani and Siddha drugs are of great demand in the country. There is already a spurt in demand for plant-based drugs and lately many such native species of medicinal value are being brought under systematic cultivation. India has been considered a treasure house of valuable medicinal and aromatic plant species. The Ministry of Environment and Forests, Government of India have identified and documented over 9,500 plant species considering their importance in the pharmaceutical industry. Out of these, about 65 plants have large and consistent demand in world trade. India however, produces only limited quantities of these materials. In terms of market share in production value, India holds only the 6 place with a mere 7 per cent share. On the contrary, we are still importing about 10 types of essential oils to the tune of 8000 tons per annum.

Statement of the Problem

India is one of the leading producing fruits and vegetable in the world. The study has analyzed the position of fruits and vegetables production in the world. India contributes one fourth of the total fruits and vegetables production in the world. The horticulture production may not equal during the all years there may be fluctuating in production and productivity hence it is necessary to study the trend of horticulture production in India. In India all the states are not equal contributing to the horticulture production considerably. There is regional wise variation so the study has analyzed state-wise horticulture production. Andhra Pradesh is one of the leading states of fruits production state.

Objective of the Study

The study has the following objectives

- To study the trend of horticulture production in India.
- To study the state wise status of horticulture production in India.
- To collect the data on area, production and yield of horticulture crops data collected by the department of horticulture and directorate of economic and statistics of India.

Methodology

The study is based on secondary data .The secondary data were collected from Indian Horticulture Data base 2017. National Horticulture Board, Gurgaon, and Department of Economic and Statistics of India. The study based on secondary data only.

Result and Findings

The followings tables give the results regarding top countries in the world. It gives area of horticulture cultivation, quality of horticulture production, productivity percentage share of area of horticulture cultivation, percentage of horticulture production of each country on total horticulture production in the world and rank of each country.

The horticulture crops as a major fruits cultivated in India. Hence, it is necessary to know its trend of production. The following tables gives the results of area of cultivation, production and productivity of fruits and total fruits production in India for the period of five years from 2012-13 to 2016-17.

Table - 1
Trend of Fruits Production in India

Years	Area	Production	Productivity
2012-13	6982	81285	11.64
2013-14	7216	88977	12.33
2014-15	6110	86602	14.17
2015-16	6301	90183	14.31
2016-17	6480	92846	14.33

Sources: National Horticultures Board Gurgaon, India.

The above table shows that both area of fruits cultivation and production was increasing over the study period from 2012-13 to 2016-17. Area of fruits production was 6982 hectares during the year 2012-13, it increased by 234 hectares over the previous year and it stood at 7216 hectares and it decreased to 6110 hectares. During the following area of fruits cultivation was increasing till 2015-16 to 2016-17 and its rate of increase was gradual during the years.

Fruits produced 81285 thousand MT in India during 2012-13, fruits production was increasing over the study period. During the year 2014-15 fruits production went down drastically by over the previous year and quantity of production stood at 88977 to 86602 thousand MT, but during the next year 2015-16 production of fruits increased rapidly with over the previous year and its production was 90183 thousand MT. Production of fruits by increased 2663 thousand MT during the year 2016-17 in the 2016-17 in production 92846 thousand MT, hence it is appreciable growth over the study period.

Productivity of fruits was found fluctuating over the study period. Productivity of fruits ranged between 11.64 MT per hectare to 14.33 MT per hectare over the study period. It was found that low during the first two years of the study period, with 11.64 MT and 12.33 MT per hectare. Productivity of fruits was found to be 14.31 MT to 14.33 MT per hectare respectively during 2015-16 and 2016-17. It revealed that area of fruits production in India was increasing over the study period. It was cultivated in 6982 thousand hectares during the 2012-13 and it was decreased over the study period and during 2016-17 fruits were cultivated in 6480 thousand hectares.

Production of fruits in India was increasing over the study period except during 2014-15. Total fruits production was 92846 thousand MT during 2016-17. It increased at higher rate during 2016-17, with over the previous year. During 2016-17 the share of horticulture crops of fruits cultivations land area was found high and during such year fruits was cultivated in 31.5% of total horticulture producing area. These results showed that among total fruits production occupies more than one third of share with the land sharing of two tenth of total producing area.

As per the results of the above table India is the largest producer of fruits in world. Fruits cultivated in almost all the states of India, but production level differs from state to state. The following table gives the results of the major vegetable cultivated and producers in India. Hence, it is necessary to know its trend of vegetable production in India. The following table gives the results of area of cultivation, production and productivity of vegetables production in India for the period of five years from 2012-13 to 2016-17.

Table – 2
Trend of Vegetables Production in India

Years	Area	Production	Productivity
2012-13	9205	162187	17.62
2013-14	9396	162897	17.34
2014-15	9542	169478	17.76
2015-16	10106	169064	16.73
2016-17	10290	175008	17.01

Source: National Horticulture Board Data bases 2016-17 Gurgaon, India.

The above table shows that both area of vegetables cultivation and production was increasing over the study period from 2012-13 to 2016-17. Area of vegetable production was 9205 hectares during 2012-13, it increased by 191 hectares over the previous year and it stood at 9396 hectares. During the following years of vegetable cultivation was increasing till 2014-15 and its rate of increase was gradual during the years.

Vegetable was produced 162187 thousand MT in India during 2012-13, vegetable production was increasing over the study period. It increased by 710 thousand MT during 2013-14 with the production of 169478 thousand MT with growth over the previous year. Vegetable production increased over the previous year during 2015-16 to 2016-17 with the production of 169064 thousand MT, 175008 thousand MT respectively.

Productivity of vegetables was found fluctuating over the study period.

The horticulture crops of flowers and aromatic is a major cultivated and producer in India. Hence, it is necessary to know its trend of production of flowers and aromatic. The following tables gives the results of area of cultivation, production and productivity of flowers and aromatic total production in India for the period of five years from 2012-13 to 2016-17.

Table – 3
Trend of Flowers and Aromatic in India

Year	Area	Production	Productivity
2012-13	790	2647	3.35
2013-14	748	3192	4.27
2014-15	908	3193	3.46
2015-16	912	3206	3.52
2016-17	943	3277	3.48

Source: National Horticulture Board, Data bases, Gurgaon, India.

The above table shows that the both area of flowers and aromatic cultivation and production was increasing over the study period from 2012-13 to 2016-17. Area of flowers and aromatic production was 790 hectares during 2012-13, it decreased to 748 hectares over the its previous year. During the following years area of flowers and aromatic cultivation was increasing till 2014-15 and its rate of increase was gradual during the 2014-15 to 2016-17 was 908 hectares, 912 hectares and 943 hectares, the production was increased through the year.

The flowers and aromatic produced 2647 thousand MT in India during 2012-13, flowers and aromatic was increasing over the study period. It increased by 545 thousand MT during 2013-14, 3192 thousand MT and it increased further to small level of growth over the previous year. Flowers and aromatic production increased further by 3206 thousand MT, 3277 thousand MT respectively over the previous year during 2015-16 to 2016-17.

Productivity of flowers and aromatic was found fluctuating over the study period. Productivity of flowers and aromatic ranged between 3.35 MT per hectare to 4.27 MT per hectare over the study period. It was found low during the last three years of the study period, with 3.46 MT, 3.52 MT and 3.48 MT per hectare. The above table also shows area of cultivation and production of all horticulture crops in India. It revealed that area of flowers and aromatic production in India was increasing over the study period. It was cultivated in 790 thousand hectares during 2012-13 and it was increasing over the study period and during 2016-17 flowers and aromatic cultivation increased over the study period but rate seems to be low.

The plantation crops are a one of the major cultivated product in India. Hence, it is necessary to know its trend of plantation crops production. The following table gives the results of area of cultivation, production and productivity of plantation crops production in India for the period five years from 2012-13 to 2016-17.

Table – 4
Trend of Plantation crops in India

Year	Area	Production	Productivity
2012-13	3641	16985	4.66
2013-14	3675	16301	4.44
2014-15	3534	15575	4.41
2015-16	3680	16658	4.53
2016-17	3677	16867	4.59

Source: National Horticulture Board, Data bases, Gurgaon, India.

The above table shows that both area of plantation crops cultivation and production was increasing over the study period from 2012-13 to 2016-17. Area of plantation crops production was 3641 thousand hecters during 2012-13, it increased by 34 thousand hecters over the previous year and it stood at 3675 thousand hecters and it's decreased to 3534 thousand hecters. During the following years area of plantation crops cultivation was increasing till 2015-16 and its rate of increase was gradual during the years. During the year 2016-17 area of plantation crops cultivation decreased to 3677 thousand hecters, which accounted some percent decrease over the its previous year and during 2016-17.

Plantation crops was produced 16985 thousand MT in India during 2012-13 to 2013-14 plantation was decreased by 684 thousand MT 726 thousand MT over the study period. It increased by some per cent during 2015-16 with the production of 16658 thousand MT and it increased further to 16867 thousand MT growth over the previous years.

Productivity of plantation crops was found fluctuating over the study period. Productivity of plantation crops ranged between 4.41 MT per hecters to 4.66 MT, 4.44 MT, 4.53 MT and 4.59 MT per hecters respectively during 2012-13 to 2016-17.

The spices crops are of the major cultivated crops of horticulture production in India. Hence, it is necessary to know its trend of spices crops production. The following table gives the results of area of cultivation, production and productivity of spics crops production in India for the period of five years 2013-13 to 2016-17.

Table – 5
Trend of Spices crop in India

Year	Area	Production	Productivity
2012-13	3076	5744	1.87
2013-14	3163	5908	1.87
2014-15	3317	6108	1.84
2015-16	3474	6988	2.01
2016-17	3535	7077	2.02

Source: National Horticulture Board, Data bases, Gurgaon, India.

The above table shows that both area of spices cultivation and production was increasing over the study period from 2016-17. Area of spices production was 3076 thousand hecters during 2012-13, it increased by over the previous year and it stood at 3163 thousand hecters and it's further to increased by 3317 thousand hecters. During the following years area of spices cultivation was increasing till 2015-16 to 2016-17 and its rate of increase was gradual during the years. It was considered by low and therefore growth in spices producing area was less.

Spices was produced 5744 thousand MT in India during 2012-13, spices production was increasing over the study period. It increased by 5908 thousand MT during 2013-14 and its increased further to 6108

thousand MT growth over the previous year. Spices production increased further by 6988 thousand MT and its 7077 thousand MT respectively over the previous year during 2015-16 to 2016-17.

Productivity of spices was found fluctuating over the study period. Productivity of spices ranged between 1.87 MT per hectare to 2.02 MT per hectare over the study period. It was found that small level of productivity was during 2014-15 was low. Compare to previous year. It revealed that area of spices production in India was increasing over the study period.

State Wise Production

The following table gives the results of states wise production of horticulture crops in fruits, its production, and share on total production states in India for the year 2016-2017.

Table – 6
Production Share of Leading Fruits Producing States 2016-17

S.No	States	Production	% Share
1	Andhra Pradesh	12098.6	13.0
2	Maharashtra	10378.4	11.2
3	Uttar Pradesh	10353.5	11.2
4	Gujarat	8482.8	9.1
5	Karnataka	7425.1	8.0
6	Tamil Nadu	6079.9	6.5
7	Madhya Pradesh	5937.0	6.4
8	Bihar	4272.9	4.6
9	West Bengal	3708.5	4.0
10	Telangana	3536.7	3.8
11	Others	25470.45	27.4
	Total	92845.98	100.0

Source: National Horticulture Board, Data bases, Gurgaon, India.

The above table that indicates the state of Andhra Pradesh stood first in fruits production during the year 2016-17 with the quantity of 12098.6 thousand MT in the share of 13.0% Maharashtra pulled into second place in production of fruits in India 10378.4 thousand MT in the share of 11.2% in fruits production.

The state of Uttar Pradesh stood third in fruits production during the year 2016-17 with the production of 10353.5 thousand MT in the share of 11.2% in fruits production but the state of Maharashtra and Uttar Pradesh always as some per cent of share in fruits production in India.

Gujarat is another major state which is producing fruits in India. It produced 8482.8 thousand MT in production of fruits during the year 2016-17 and stood 4th position and share of 9.1%.

The state of Karnataka stood 5th place in fruits producing in India with the quantity of 7425.1 thousand MT during the year 2016-17. Their contribution in total production was 8.0 per cent in 2016-17. Tamil Nadu occupied sixth place in fruits production with quantity of 6079.9 thousand MT during the year 2016-17 with share of 6.5% middle level in Tamil Nadu fruits production.

The state of Madhya Pradesh stood seventh place in fruits production in India their quantity of fruits production 5937.0 thousand MT with share of 6.4%.

The state of Bihar stood at 8th place during the year 2016-17 contributed 4.6% of total production quantity of production 4272.9 thousand MT.

West Bengal occupied 9th place in fruits production in India its production 3708.5 thousand MT with the share of total production 4.0% during the year 2016-17.

The state of Telangana contributed 3.8 per cent of total production and stood 10th place during the year 2016-17 and its production is contributed 3536.7 thousand MT.

Rest of the state in India all together produced 25470.45 thousand MT of total production during the year 2016-17 and they contributed only 27.4% of total production in 2016-17. The results of the above table Andhra Pradesh is the leading state in fruits production in India.

The table shows that in the all India production and productivity of horticulture crops of India.

Table - 7
All India Area, Production and Productivity of Horticulture Crops over the year 2016-17

Crops	Area	Production	Productivity	Rank	%
Fruits	6480	92846	14.33	2	31.5
Vegetables	10290	175008	17.01	1	59.3
Flowers & Aromatic	943	3277	3.48	5	1.1
Plantation Crop	3677	16867	4.59	3	5.7
Spices	3535	7077	2.02	4	2.4
Total	24925	295164	11.84	-	-

Source: National Horticulture Board, Data bases, Gurgaon, India.

The horticulture production was produced in the total area of 24925 hectares production 295174 MT productivity 11.84 per cent among them India stood in area of production in horticulture crops. The horticulture crops in vegetables in India area 10290 hectares in 175008 productions in MT, productivity 17.01 percentage 59.3% horticulture crops first place in vegetable rank in first.

The second place in fruits production area 6480 hectares 92846 productions in MT, productivity 14.33 percentage 31.5% rank in second place in fruits. The third place in plantation crops area 3677 hectares production 16867 MT productivity 4.59 percentage 5.77 ranks in third place forth one the spices 3535 hectares area production 7077 MT in production productivity 2.02 and 2.4% in rank 4th place. The horticulture crops last one flowers and aromatic production area 943 hectares 3277 production in MT 3.48 productivity in 1.1%percent in 5th rank during the year 2016-17.

CONCLUSION

Horticulture crops form a vital role of in Indian agricultural production. India is the second largest producer of fruits and vegetables in the world. Horticulture crop of vegetables ranked as the highest producer in India. The horticulture crops constituting fruits, vegetable including potato, tuber and mushroom, ornamental plants including cut flowers, spices, and plantation crops have become a key driver for economic development in many states of the country and contribute significantly to the GDP of agriculture. This trend of horticulture development has been marked as "Golden Revolution" recording a growth rate of 7 per cent per annum and its enhanced contribution to GDP of agriculture. India as second largest producer of fruits 75.8 MT by contributing 12.1 per cent share in global fruits production during the year. India occupied first place in production of mango, banana, papaya, pomegranate, sapota and aonla. It is the essential to mention that production and productivity of banana and sapota is the highest in the world. India has also made noticeable advancement in the production of flowers. Development of the horticulture sector, exports are considered to be most important for the growth of the horticulture sector. India is a major producer of horticulture products and is reasonable market access for its agro exports which are largest producer in India.

The country may adopt innovative methods in order to improve productivity of horticulture crops in the country. It was also evidenced by the paper that all the states of India are not good production of horticulture crops. The Government should concentrate in the states where production and productivity of horticulture crops were found lower. Major variation in order to increase productivity of horticulture crops

from state to state, reasons for the variation may be found and rectified in order to increase productivity of horticulture crops and which will lead to give more income to horticulture crops cultivators in the country.

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