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**STATUS OF FRUIT CROPS IN TEZPUR AREA OF ASSAM: A STUDY IN URBAN HORTICULTURE**

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**Abstract**

*Tezpur falls in the district of Sonitpur and acts as an administrative headquarter of the district. From the agricultural point of view, Tezpur occupies a significant portion in the whole district. Urban area of Tezpur witnessed a very few agricultural activities due to the non-availability of sufficient open or vacant space. Among the agricultural activities, horticultural sector finds a significant place in urban area, whereas both horticulture and other agricultural activities are visible in fringe and peri-urban areas of Tezpur. The environmental and climatic condition of the area offer an excellent opportunity for the growing of various fruits, vegetables, flowers, spices etc. Tezpur region accounted only 7.5 percent of the total horticultural land of the district. This small portion of horticultural land is devoted largely to the cultivation of fruit crops, vegetables and spices in sufficient quantities. In the study, an attempt has been made to analyze the present status of fruit crops in Tezpur area and the future prospects of the same. The study may be helpful to government officials, policy makers, agriculturalists etc. to take some effective steps for the future development of the branch of horticulture in the field of agriculture.*

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**Introduction**

“Urban Agriculture (UA) is an activity that produces, processes, and markets food and other products, on land and water in urban and peri-urban areas, applying intensive production methods, and (re)using natural resources and urban wastes, to yield a diversity of crops and livestock.” (Jacobi, Drescher, & Amend, 2000). “Urban agriculture can be defined as the growing of plants and the raising of animals for food and other uses within and around cities and towns, and related activities such as the production and delivery of inputs, and the processing and marketing of products. Urban Agriculture is located within or on the fringe of a city and comprises of a variety of production systems, ranging from subsistence production and processing at household level to fully commercialized agriculture” (Veenhuizen, 2006). The current study aims to analyze the pattern of horticultural development in the context of Tezpur urban area. The history and progress of horticulture is closely connected to the history and expansion of agriculture. From this point of view, horticulture is a part of the story of human’s desire to gain control over nature. This story involves exploration, conquest, experimentation, invention and globalization. The expansion of horticulture is traced as it progressively developed independent of

agriculture, into the cultured art and science that it is today. This special domain of agriculture encompasses particular tools and practices, the growth of market gardening and commercial horticulture, the alteration of food and ornamental plants from one region to another (Baeyer, 2010).

Horticulture is a combination of two Latin words i.e. *Hortus* meaning Garden and *Cultura* meaning Cultivation. Thus, horticulture has been defined as the art and science of growing fruits, vegetables, herbs, nuts and ornamental plants (Baeyer, 2010). Unlike agriculture, horticulture does not involve intensive crop practices or large scale production. Instead, it focuses on the usage of small plots with a wide diversity of mixed crops. Horticulture, in a broader sense, is the science of growing and managing of fruits, vegetables, ornamental & medical plants, spices, plantation crops, and their processing, value addition and marketing. India’s horticultural sector contributes 13.08 percent of Gross Cropped Area (192.79 Million Ha) of the country, and accounted about 30% of India’s Agricultural GDP (Thaman, 2016). Horticulture, as a large branch of agriculture, is not limited to the study of fruit and vegetable crops; rather it is committed to include the following branches

(Table-1) of study (Preece *et. al.*, 2005):

SI No	Branches	Focus Area
1	Olericulture	The Production of Vegetables
2	Pomology	The production of fruit and Nuts
3	Viticulture	Production of Grapes (Largely for Wine-Making)
4	Floriculture	The Production of Flowers and Ornamental Plants
5	Arboriculture	Cultivation and care of individual trees and shrubs, vines for landscape and amenity purposes

### Objectives

Major objectives of the current study are as following:

1. To understand the current status of fruit crops in the study area.
2. To know the practices of different fruit crops with associated matter.

### Methods & Methodology

The present research work has been conducted in Tezpur urban and peri-urban area in the district of Sonitpur, Assam. The entire study is based on both the primary as well as secondary data, which were collected in order to achieve the results of specified objectives of the study. The data collected from study area have been carefully analyzed and interpreted using suitable research techniques and methods. Primary or first-hand data have been collected by conducting field survey in the study area. During the survey, personal observation from the side of researcher has formed an essential source of primary data. Moreover, data related to the agricultural crops and their area and production trends have been obtained from District Agricultural Office, Tezpur. Information regarding the horticultural crops and their area and production has been obtained from Horticultural Department of the District. Apart from that, different journals, book, periodicals etc. have also been taken into consideration for various secondary data for the entire study. In the current research work, numerous tools and techniques for analyzing as well as interpretation

of the collected data have been used. All the collected data, both primary and secondary, have been tabulated and interpreted in a suitable way. In order to ensure better quality of the gathered information, simple statistical techniques have widely been used wherever necessary.

### Results & Discussion

#### Major Horticultural Crops in the Study Area

Tezpur has been emerged as one of the important horticultural crop producing areas not only in the district but in the state as well. The environmental and climatic condition of the area offer an excellent opportunity for the growing of various fruits, vegetables, flowers, spices etc. Among the fruits Litchi, Banana, Jackfruit, Papaya, Guava, Areca Nut, Assam Lemon etc. are important. Similarly, Cabbage, Cauliflower, Tomato, Potato, Mustard Leaves, Spinach etc. are come under the domain of vegetables. On the other hand, Garlic, Ginger, Coriander, Chilly, Black Pepper etc. find an important place in the spice sector. All these horticultural crops are grown in a limited agricultural land of 1930 hectare, and possess high economic significance for the region. All the horticultural crops are planted, sowed and harvested in different seasons. Spice and vegetable cultivation are seen to be dominated in the winter season, while fruits are seen to be harvested in all the time, subjected to the maturity as well as ripening of the same. Horticultural crops of the study area along with their harvesting season are presented in the

table no-2:

Fruits	Harvesting Season	Vegetables	Harvesting Season	Spices	Harvesting Season
Banana	All	Cabbage	Winter	Ginger	Winter
Pineapple	Winter/Summer	Cauliflower	Winter	Chilly	All
Areca Nut	All	French Bean	Winter	Onion (Local)	Winter
Assam Lemon	All	Mustard Leaves	Winter	Turmeric	Winter
Litchi	Summer	Potato	Winter	Garlic	Winter
Papaya	All	Tomato	Winter	Black Peeper	Winter

**Source:** Compiled from Field Survey

### Pattern of Horticultural Development in the Study Area

Horticultural development in Tezpur region is not so fast as compared to other regions of the district. Although the climatic condition of the region is suitable for the growing of large horticultural crops, but due to the limited cultivable land for horticulture, the sector is not able to keep pace with other agricultural sectors. As mentioned earlier, the region accounted only

7.5 percent of the total horticultural land of the district, horticultural development is seen to be limited within this small portion of land. This small portion of horticultural land is devoted largely to the cultivation of fruit crops, vegetables and spices. However, floriculture has been a recent trend for most of the urban dwellers. Among the horticultural crops, Vegetables occupy the largest area, followed by fruit crops and spices

(Table-3):

SI No	Crops	Area (in Ha)	P.C. Share
1	Vegetables	1155	60%
2	<b>Fruit Crops</b>	<b>415</b>	<b>21.50%</b>
3	Spices	360	18.70%
4	<b>Total</b>	<b>1930</b>	<b>100%</b>

**Source:** Compiled from Basic Agriculture Information, DAO, Tezpur

It has been found that Vegetables accounted 60 percent of the total horticultural land of the study area. This 60 percent area is devoted to the cultivation of Cabbage, Cauliflower, Tomato, Potato etc. in urban, fringe and peri-urban area. After vegetables, Fruit Crops contributed 21.5 percent of the total horticultural land of the study area, which is devoted to the cultivation of Litchi, Banana, Papaya, Jackfruit etc. in both urban and peri-urban area. The area under spice cultivation is 18.7 percent of the total horticultural land of the study area (**Fig-1**). This portion of land is used for the cultivation of Garlic, Ginger, Chilly, Black Peeper etc.

### Status of Fruit Cultivation in the Study Area

Fruit has been found to be the second most important horticultural crops in the study area after vegetables. Area under fruit cultivation contributed 21.50 percent of the total horticultural area of Tezpur region. Under this limited portion of land, fruit crops like Litchi, Assam lemon, Banana, Papaya, Areca Nut etc. have been practiced. All the fruit crops cover individual area of cultivation within the study area, and this individual area are found to be increased and decreased from time to time

(Table-4):

SI No	Crops	Area (in Ha)						
		2014	2015	2016	2017	2018	2019	2020
1	Banana	64	62.87	70.8	70.94	70.4	70.5	71
2	Coconut	54.72	54.72	52.27	52.27	53	53	53
3	Pineapple	21.58	21.58	21.58	21.81	21.06	21.11	21
4	Areca Nut	76.07	76.14	74.03	74.04	73.78	73.78	76
5	Assam Lemon	63.76	63.76	63.76	64.83	64.83	65	65
6	Litchi	84	84	84	85	85	86	86
	<b>Total</b>	<b>364.13</b>	<b>363.07</b>	<b>366.44</b>	<b>368.89</b>	<b>368.07</b>	<b>369.39</b>	<b>372</b>

**Source:** Compiled from District Agriculture Office, Tezpur

The trend of production of these fruit crops are seen to be varying with the change of their cultivable lands from time to time. Apart from change of area, climatic condition, soil fertility

etc. affect the production trend of these fruit crops. The trend of fruit crop production in the study area is presented in the following

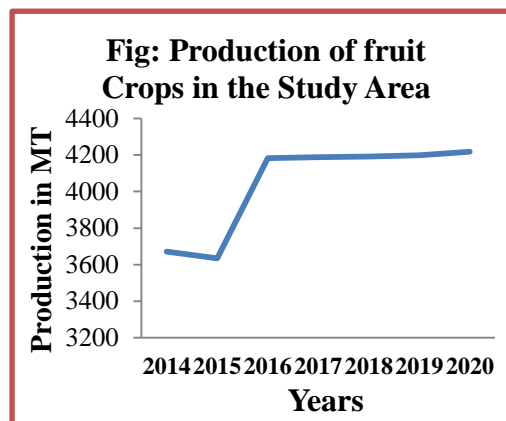
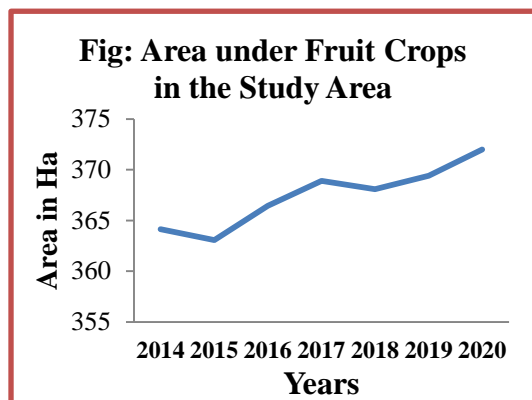
(Table-5):

SI No	Crops	Production (MT)						
		2014	2015	2016	2017	2018	2019	2020
1	Banana	1417	1381	1564	1568	1567	1565	1575
2	Coconut	314.36	314.36	594.43	594.43	602	602	602
3	Pineapple	343.74	343.74	343.74	348.59	343.82	341.08	341.13

4	Areca Nut	61.14	61.14	93.47	93.49	93.63	93.63	96.45
5	Assam Lemon	518.58	518.58	518.58	519.47	519.47	519.74	519.74
6	Litchi	1016	1016	1069	1064	1066	1077	1083
	<b>Total</b>	<b>3670.82</b>	<b>3634.82</b>	<b>4183.22</b>	<b>4187.98</b>	<b>4191.92</b>	<b>4198.45</b>	<b>4217.32</b>

Source: Compiled from District Agriculture Office, Tezpur

Unlike area, the total production of fruits in the study area are found to be increased from 3670 MT in 2014 to 4217 MT in 2020, increasing about 547 MT in 6 years, i.e. about 91 MT per year. Among the fruit crops, except, Pineapple, all the crops have experienced increasing trend in their production from 2014 to 2020.



### Conclusion

Horticultural sector in the area of Tezpur is growing continuously, as horticultural crops were seen to be widely practiced both in fringe as well as peri-urban area of Tezpur. Among the crops, vegetables dominant the sector followed by fruits and spices. Among the fruit crops banana and litchi are the dominant ones in the area. Although horticultural cultivation is growing continuously in the area, but the same is not able to fulfill the needs of the people of the area. Many factors exist and affected on the overall development of the sector. Lack of irrigation facility, storage facility, climatic causes are some of the factors in this regard. Moreover, expansion of Tezpur urban area has continuously decreased the agricultural lands that ultimately affect the production pattern of horticultural crops. As the farming sector of the study area is affected by the expansion of urban area, it is essential to develop diverse agricultural strategies. Future strategy should be concentrated on increasing cropping intensity and productivity in horticultural crops, with sufficient emphasize on fruit crops due to the greater demand of fruit crops in the region. Extensive irrigation facility should be ensured for better productivity of fruit crops as litchi cultivation in the area has greatly suffered from water scarcity during the deficient time. As such, government and private organization will have to cooperate with one another in order to help horticultural farmers to increase horticultural crop production. It is only after attaining the growth in farming sector,

Sameer Baruah

economic growth of a region can well be ensured. Thus, prospects for the farming sector should essentially be found out to receive top-most priority.

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