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A BRIEF PICTURE OF PINEAPPLE PRODUCTION IN TRIPURA

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Abstract: *Pineapple has been primarily cultivated by the tribal in Tripura. It is at large a commercial cultivation which fetches a good return to the cultivators. The 'queen' variety pineapple is a state of Tripura. Based on past ten years information the study presents the growth, variation of fruit and region-wise distribution of pineapple production, the study employs methods such as CAGR, Coefficient of variation and other simple statistical tools. Dhalai district has the highest area and production and North district has the highest productivity. Pineapple constitute 16% of the area under fruit cultivation and 24% out of total fruit production. The Coefficient of Variation of area, production and productivity are 25.67%, 21.2% and 20.43% respectively. Similarly, The CAGR of area, production and productivity are 3.65%, 2.56% and -0.71% respectively.*

Keywords: Pineapple, Tripura, Area, Growth, Variation.

I. Introduction

Pineapple is an important fruit crop in Tripura. The Kew and the Queen variety are cultivated in the region. Slim harvesting begins from mid-may and peak harvesting occurred in June and July, lasting until august end. Particularly, the Queen Variety is the state's fruit of Tripura. The fruit has also been exported not only to other states within but also beyond the national borders. Every eight districts in Tripura has little or more area under cultivation, among them Dhalai district has the highest production and area under cultivation. Total production and area under cultivation in 2017-18 are 126996 metric tons and 8728 hectare (DHSC). The cultivation in the region is primarily practice by the rural tribal inhabitants. 'Ananas Cosmosus' is the botanical name of the fruit, Pineapple. The Spanish term of Pineapple was 'Pina' (little Pine) due to its resemblance to Pine-cone and the word 'apple' is a loose name for any kind of round fruits in the early days, thus the two words 'Pine' and 'Apple' makes the term Pineapple. The pineapple is assume to had been originated and first cultivated around 2000 B C in the Parana-Paraguay basin near the present-day borders of Brazil, Paraguay, Uruguay and Argentina, the inhabitants had then traded with other inhabitants and explorers. (Levith, 2014). This paper primarily focuses on over-time growth and variation in area, volume of production and productivity. Besides, district-wise production distribution and share of pineapple in total fruit production are also presented.

Tripura is the third smallest state in India, geographically located in North-Eastern region of India and surrounded by international borders, about 84% percent of its boundary is share with Bangladesh. A major portion of the geographical area is hilly region, however the plain area is largely inhabited than the hilly area. The state is connected with the rest of the country with a national Highway-44. The capital is Agartala which is well connected by railways and airways. As per Census 2011, the literacy rate of Tripura is 87.22 %population in Tripura is 36,73,917, out of which the schedule tribe consists of 31.75 %. (DE&SP, 2018)

II. Data and Methodology

Analysis under this study is solely base on secondary information sourced from different issues of state govt. publication, Directorate of Horticulture & soil Conservation Govt. of Tripura, and other online database. Time series data of the recent past ten years (2008-09 to 2017-18) of area, production of pineapple is analyze and the latest information (2017-18) available is use to show distribution of different fruits production and district-wise production distribution. Annual Compound Growth rate is determined by the following formula for the period of ten years.

$$CAGR = \left(\frac{E\ V}{B\ V}\right)^{\frac{1}{n-1}} - 1$$

Where,
CAGR: Compound Annual Growth Rate.
BV: Beginning value of Area, Production and Productivity.
EV: Ending value of Area, Production and Productivity.
n: No. of observation (Years).

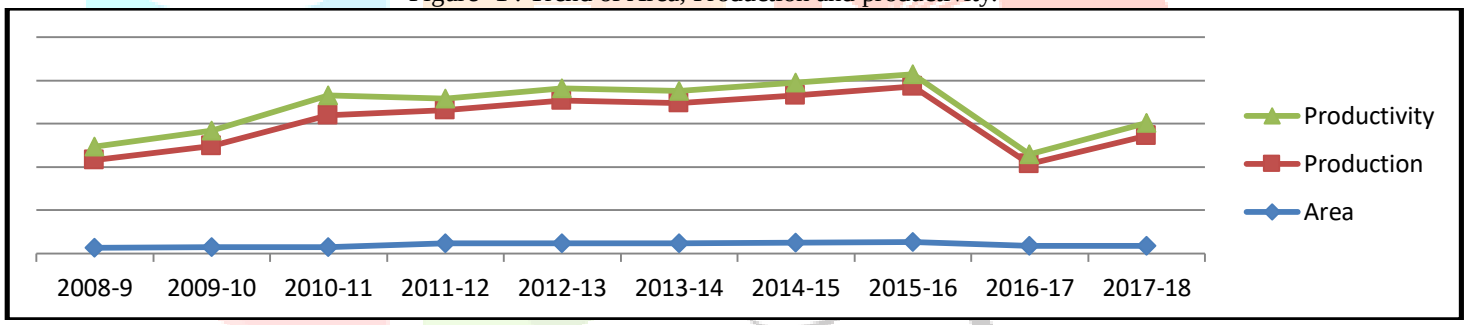
Coefficient of Variation is use to show Variation in Area, Production and Productivity.

$$C.V. = \frac{Mean}{Standard\ Deviation}$$

Besides, the above two formulae, simple tools like percentage growth rate, diagrammatic representation are employed to show distribution of different fruits production and district-wise production distribution.

III. Analysis and Interpretation

Figure -1 : Trend of Area, Production and productivity.



The above figure-1 intends to show only the visual overtime fluctuation of the three parameters (Productivity, Production and Area). A look at the above figure shows that the bottom trend-line i.e. area under pineapple cultivation is fairly constant with a very negligible fluctuation. The middle trend-line i.e. volume of production shows relatively more fluctuation at the end of the time periods than the initial years. The top trend-line i.e. productivity follows the same as the production trend.

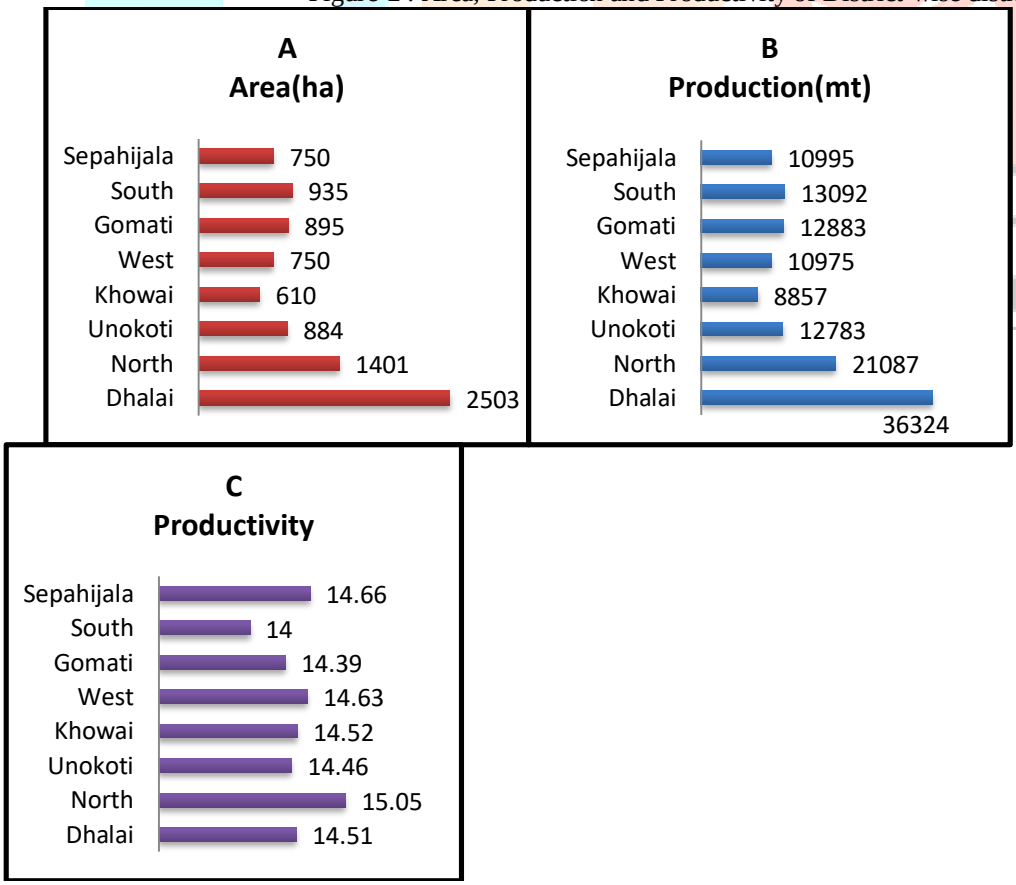
Table-1: Overtime Annual Percentage Growth in Area, Production and Productivity.

Year	Area		Production		Productivity	
	'000' ha	% Growth	'000' mt	% Growth	mt/ha	% Growth
2008-09	6.3	-	101.20	-	16	-
2009-10	6.8	7.94	117.50	16.11	17.3	8.13
2010-11	6.8	0.00	153.30	30.47	22.6	30.64
2011-12	11.6	70.59	154.28	0.64	13.3	-41.15
2012-13	11.8	1.72	165.00	6.95	14	5.26
2013-14	11.6	-1.69	162.30	-1.64	14	0.00
2014-15	12	3.45	170.90	5.30	14.3	2.14
2015-16	12.69	5.75	180.26	5.48	14	-2.10
2016-17	8.85	-30.26	94.67	-47.48	11	-21.43
2017-18	8.7	-1.69	127.00	34.15	15	36.36

Source: horti.tripura.gov.in, Indiastat.

A perusal of the above table-1 shows the annual percentage growth of area, production and productivity, where the maximum growth in area is seen in 2011-12 i.e. 70.59%, the lowest is -30.26% in 2016-17 and the year 2010 -11 has no changes. The highest growth of production is in 2010 -11 i.e. 30.47 and the lowest is in 2016-17 i.e. 47.48. Implication that can be drawn from the above figure that both area and production have witness acute fluctuation, the variable area has the highest annual growth and variable production, the lowest negative growth. As result of these two variable fluctuations productivity also exhibits sharp fluctuation.

Figure-2 : Area, Production and Productivity of District-wise distribution.

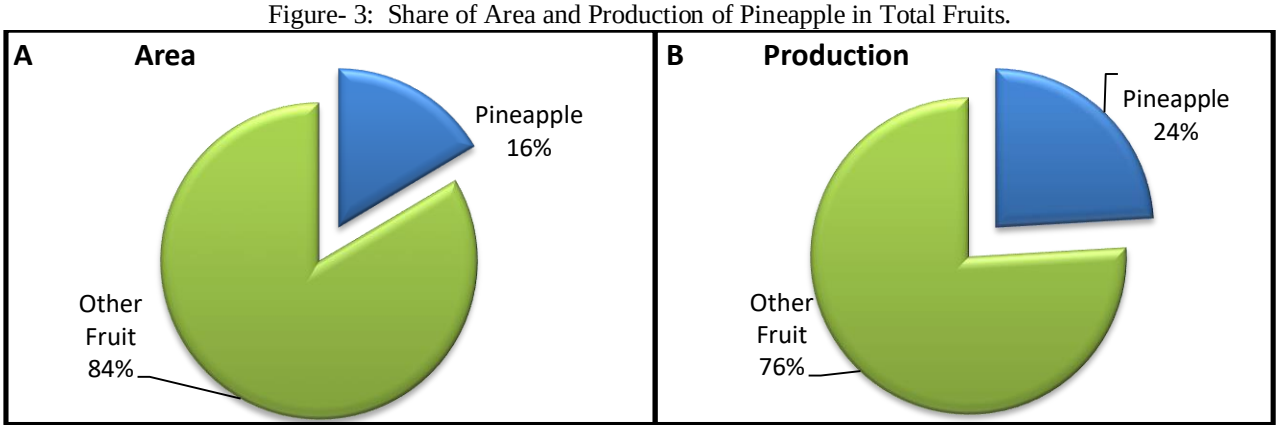


Source: horti.tripura.gov.in

The above 3 boxes show district wise distribution of area, production and productivity respectively. The figures presented in the box are of the year 2017-18. It's evident from box-A that Dhalai District has the highest area under pineapple cultivation and Khowai district, the lowest. Similarly, box-b shows that Dhalai district has the highest production and khowai district the lowest. Dhalai district, not only 2-17-18 has always been consistently the highest in terms of area and production of pineapple over the last few decades.

However, in box-C Dhalai district hasn't been the highest productivity but North district and lowest productivity is in South district.

Figure- 3: Share of Area and Production of Pineapple in Total Fruits.



Pineapple is the second highest production and productivity after jackfruit and also it is the third highest area under cultivation (DH&SC, 2017-18) , from the above figure, box A shows that out of total area under cultivation of fruits in Tripura pineapple constitute 16 %, and box B shows that out of total fruits production, pineapple constitute 24%. The other 84 % fruits are mango, orange, jack fruits, banana, litchi, lemon, papaya, musambi etc.

Table-2: Variation and Growth rate.

1	**Parameters**	**Area (000' ha)**	**Production ('000mt)**	**Productivity (mt/ha)**
2	Mean	9.71	142.64	15.15
3	Standard Deviation	2.49	30.27	3.09
4	Coefficient of variation	25.67%	21.2%	20.43%
5	CAGR	3.65%	2.56	-0.71%

The above table presents variation and growth rate in terms of Area under cultivation, production and productivity of pineapple, it is evident from the table that the parameter, standard deviation shows production has the highest variation, however according to standard coefficient of variation area under cultivation has the highest variation followed by production and productivity. The growth rate in terms of compound annual growth rate shows that area under cultivation has the highest growth rate followed by production and productivity has not only been low but negative. Therefore, variations in all the three have been moderately high and the overtime growth of pineapple cultivation has been slow.

IV. Conclusion

Following the overall analysis, it is apparent that pineapple cultivation in Tripura hasn't showed an increasing trend in terms of area, production and productivity. Besides, fluctuation has also been observed with a declining trend. Especially the negative growth rate of productivity is of greater concern. Thus, the state horticulture authority has to put emphasis on the cultivation of the pineapple as it supports livelihood especially in rural areas.

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