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GROWTH RATE OF PRODUCTION, PRODUCTIVITY AND AREA OF PEPPER IN KERALA: A COMPARATIVE STUDY BETWEEN PRE AND POST GLOBALIZATION ERA

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ABSTRACT

The present study has analyzed the growth performance of pepper in Kerala in terms of area, production, productivity and price for the past 50 years (1970-71 to 2019-20) and quantified the impact of productivity growth and area growth on production growth. The analysis was carried out for three periods: pre-globalization period (1970-71 to 1990-91), post-globalization period (1991-92 to 2019-20) and the overall period (1970-71 to 2019-20). There was a decelerating trend in the area and production of pepper in the pre-globalization period. The rate of deceleration was high in production (7.5%) compared to that of area (6.8 %). However, productivity and real price have shown an increasing trend. The post-globalization period has shown a decelerating trend in the area, production, productivity and real price. The rate of deceleration was high in productivity (7.3 %) when compared with area (1 %), production (4.7 %) and price (0.1 %). The overall (50 years) trend has shown a deceleration in area, production and productivity of pepper. The rate of deceleration was high in production and productivity However, the real price has accelerated by 0.2 % per year.The decomposition analysis has shown the contributing factors to the growth of pepper production in the state which has increased in the case of area, from pre globalisation to globalization era. However, productivity has shown a negative effect. The interaction effect has increased by 11.25 % in 50 years.

Keywords: Decomposition analysis, Growth analysis, Globalisation, Pepper

INTRODUCTION

In India, the highest area utilized for pepper production is from Kerala and contributes a major share in the production of pepper compared to other states. Kerala had a monopoly in the pepper production for a long period of time. The two major pepper growing districts in Kerala are Idukki and Wayanad. Idukki district stands first position with an area of 42090.45 ha and the contribution to state total is 51.25 %. Wayanad district stands second position in area during the last 10 years. It is 11.25 % of the state total during 2020-21 (Agricultural Statistics, 2022). These two districts together accounted for 62.5 % of the total area under pepper cultivation in

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Kerala in 2022. In 1971, Kerala accounted for 89 % of the total production in India. But the pepper production in the state has slipped to 33 % in 2019-20. Since 1970-71, for about 40 years, Kerala had a dominant position in the production of pepper. Thereafter, a decreasing trend started and the production and productivity of the pepper in Kerala were showing declining trend over the period of time.

In the new liberal era, the demand for pepper has been increasing in the international market as well as in the domestic market and India is striving to expand new markets and develop competitiveness in new areas. But it is being observed that in the post globalisation era there was a declining trend in the production and productivity of pepper. In 1991-92, the production of pepper in Kerala was 178126 tonnes and the productivity was 282 Kg/ha and in 2019-20 the production was 20000 tonnes and the productivity was 242 Kg. Price variation tempted the pepper cultivators of the major pepper growing districts of Kerala like Idukki and Wayanad to switch over to other crops (Thomas, 2019). One of the main risks that influenced the production, profitability and well-being of the pepper cultivators was volatile pepper prices (Jose, 2018).

It is an established empirical fact that pepper production in the state has been sinking and many studies in the Kerala context have reported that the production of pepper has been seriously declining. The purpose of the study was to find out how the area, production, productivity and price level of pepper in the state have changed over the years.

Thus, the study was undertaken with an objective to estimate the growth rate of production, productivity, area and price of pepper in Kerala.

MATERIAL AND METHODS

Data Sources

Secondary data were used to analyse trends in terms of area under cultivation, production and productivity of pepper in Kerala. Secondary data have been retrieved from various publications, official reports, research papers/articles, Ph.D. theses etc. The data sources mainly include reports of Spices Board of India, Kochi (various issues), Directorate of Arecanut and Spices Development Ministry of Agriculture, Government of India Calicut, Kerala and Pepper Statistical Yearbook -International Pepper Community Jakartha (various issues).

Tools for analysis

The long-term growth path was traced by estimating the annual growth rates statistically using annual time series data. The rate of change of growth was then measured by the acceleration/deceleration of growth. Fifty years of time series data were collected from 1970-71 to 2019-20. The analysis was carried out for three periods, the pre-globalization period (1970- 71 to 1990-91), post-globalization period (1991- 92 to 2019-20) and overall period (1970-71 to 2019-20). Decomposition Model was used to estimate the contribution of area and productivity in the production of pepper.

Analysis Framework

The analysis was carried out to (a) estimate the growth rate of area, production and productivity of pepper (b) quantify the impact of productivity growth and area growth on production growth.

In order to calculate the compound growth rate of area, production, price and productivity of pepper in India during pre and post-globalization periods, the following exponential function was used.

$Y = a\, b^t e^e$ ..... (1)

Where, Y = Area / Production / Productivity

a = Intercept

b = Regression coefficient

t = Time variable

e = Disturbance term in the year't'

By transforming equation (1) into log linear form: log Y = log a + t log b + e

We can calculate the compound growth rate using the following equation:

CGR = [antilog b – 1] * 100——— (2)

The equation (2) has been estimated by applying the Ordinary Least Square (OLS) method. The t- test was applied to test the significance of 'b'. This equation presumes that a change in agricultural output in a given year would depend upon the output in the preceding year. The models are framed on the basis of the pattern of relationship derived by plotting the variables. Log linear models and log Quadratic models were framed as per the nature of the relationship revealed by the data. Using both models allows to choose the best fit for each parameter, increasing the accuracy of estimates and model predictions.

Growth Rate of Area under Cultivation of Pepper

Estimation of growth rates of Area in 1970-71 to 1990-91period,

Log-Quadratic model Log $Y=a + b\, t + c\, t^2 + e$

Estimation of growth rates of area in period 1991-92 to 2019-20,

Log-linear model Log Y = a + b t + c Lag (Log Y) + e.

Estimation of growth rates of Area in 1970-71 to 2019-20 period using

Log-linear model Log Y = a +b t + c Lag (Log Y) + e.

Where,

Log Y - Growth rate of area after applying logarithmic transformation.

a - Intercept

b - Regression coefficient of t (time variable)

c - Regression coefficient of t^2

e - Disturbance term in the year't'

c Lag – Coefficient of Auto correlation component

Growth Rate of Production of Pepper

Estimation of growth rate of production in 1970-71 to 1990-91 periods using Log-Quadratic model

Log $Y=a+bt+ct^2+e$.

Estimation of growth rate of production from 1991-92 to 2019-20 period using Log-linear model

Log Y=a+bt+e.

Estimation of growth rate of production in 1970-71 to 2019-20 periods using Log-linear model

Log Y=a+ bt + cLag (Log Y) + e.

Where,

Log Y - Growth rate of production after applying logarithmic transformation.

a - Intercept

b - Regression coefficient of t (time variable)

c - Regression coefficient of t^2

e - Disturbance term in the year't'

c Lag – Coefficient of Auto correlation component

Growth rate of Productivity under cultivation of pepper

Estimation of growth rate of Productivity in 1970-71 to 1990-91 periods using Log-linear model

$$\text{Log } Y = a + b\,t + e.$$

Estimation of growth rates of Productivity in 1991-92 to 2019-20 period using Log-Quadratic model

$$\text{Log } Y = a + b\,t + c\,t^2 + e.$$

Estimation of growth rate of Productivity in 1970-71 to 2019-20 period using Log-linear model

$$\text{Log } Y = a + b\,t + c\,\text{Lag}(\text{Log } Y) + e.$$

Where,

Log Y - Growth rate of productivity after applying logarithmic transformation.

a - Intercept

b - Regression coefficient of t (time variable)

c - Regression coefficient of t^2

e - Disturbance term in the year't'

c Lag – Coefficient of Auto correlation component

Growth rate of Real Price of pepper

Estimation of growth rates of Real Price of pepper in 1970-71 to 1990-91 period Using Log-linear model

$$\text{Log } Y = a + b\,t + c\,\text{Lag}(\text{Log } Y) + e.$$

Estimation of growth rates of Real Price of pepper in 1991-92 to 2019-20 period using Log-linear model

$$\text{Log } Y = a + b\,t + c\,\text{Lag}(\text{Log } Y) + e.$$

Estimation of growth rates of Real Price of pepper in 1970-71 to 2019-20 period using usingLog-linear model

$$\text{Log } Y = a + b\,t + c\,\text{Lag}(\text{Log } Y) + e.$$

Where,

Log Y - Growth rate of real price after applying logarithmic transformation.

a - Intercept

b - Regression coefficient of t (time variable)

c - Regression coefficient of t^2

e - Disturbance term in the year't'

c Lag – Coefficient of Auto correlation component

Decomposition Model

Decomposition analysis is attempted to examine the impact of area growth and productivity growth on the output growth.

If A0, P0 and Y0, respectively area, production and productivity in base year and An, Pn and Yn are values of the respective variable in n^{th} year item.

$$Po = Ao \times Yo \text{ and } Pn = An \times Yn \quad \ldots\ldots (1)$$

Where, Ao and An represent the area and Yo and Yn represents the yield in the base year and n^{th} year respectively.

$$Pn - Po = \Delta P,\ An - Ao = \Delta P\ Yn - Yo = \Delta Y \ldots\ldots (2)$$

From equation (1) and (2) we can write $Po + \Delta P = (Ao = A)(Yo + \Delta Y)$

Hence, $P = A0\,\Delta Y \times 100 / \Delta P + Y0\,\Delta A \times 100 / \Delta P + \Delta Y\,\Delta A \times 100 / \Delta P$

Production = Productivity effect + Area effect + Interaction effect.

RESULTS AND DISCUSSION

Analysis of the growth rate of area, production and productivity of pepper

The table 1 provided the trend in the area under cultivation of pepper. It was

Table 1. Growth rate of area under cultivation of pepper

Growth rate of area under cultivation of pepper in pre - globalization era							
Period	Regression Coefficients			R-Square	NGR	Growth Rate	DW
	a	b	c				
1970-71 to 1990-91	11.823* (210.86)	-0.068* (-5.82)	0.004* (7.40)	0.830	Decelerating	6.8	1.6
Growth rate of area under cultivation of pepper in post - globalization era							
Period	Regression Coefficients			R-Square	NGR	Growth Rate	DW
	a	b	c				
1991-92 to 2019-20	2.689 (1.95)	-0.010* (-2.16)	0.786* (7.09)	0.853	Decelerating	1.0	2.1
Growth rate of area under cultivation of pepper - 1970-71 to 2019-20							
Period	Regression Coefficients			R-Square	NGR	Growth Rate	DW
	a	b	c				
1970-71 to 2019-20 (Overall)	0.695 (0.968)	-0.001 (-1.04)	0.944* (15.47)	0.840	Decelerating	0.1	2.1

***** indicates significant at 5 % level; Parenthesis indicates t-value; NGR-Nature of growth rate; DW – Durbin Watson

analysed for the pre and post globalisation era, along with the overall change between 1970-2020.

The trend, during the pre-globalization era has defined by quadratic linear model and the result showed that the model can explain the variation by 83 % as the R-square value is 0.83. It also gives that the data is positively autocorrelated as the Durbin Watson test value is 1.6. It indicates that the autocorrelation lies in a satisfactory range and the result of the regression is fit to explain the variation. The t-value for the corresponding co-efficient i.e. (-5.82) supported a significant decelerating trend in the growth rate of area under cultivation of pepper in the pre-globalization era (1970-71 to 1990-91). The growth rate decelerated by 6.8 % per year.

The change in the area of cultivation during the post globalisation era was explained by a log linear model. The R-square value, say 0.853, supports the capacity of the model to explain 85.3 % of the variation, if all other factors are kept constant. The Durbin Watson test result that bears the value of 2.1 supports the fitness of the model and a negative autocorrelation in data. There was a statistically significant decelerating trend in the area under cultivation of pepper in the post-globalization era (1991-92 to 2019-20) as the t-value of the coefficient is (-2.16). There was an impact of pepper price fluctuations and post globalization trade policy on the production of pepper. The pepper price fluctuations led to a reduction in productivity, mixed farming, and a shift into other crops which have resulted in the decline in the area under pepper cultivation (Thomas, 2019). The growth rate has decelerated by 1 percent (including denomination).

The log linear model to address the change in the area under pepper cultivation in Kerala for 50 years i.e. (1970-71 to 2019-20), provided a decelerating trend in growth

Table 2. Growth rate of production of pepper

Growth rate of production of pepper in pre - globalization era							
Period	Regression Coefficients			R-Square	NGR	Growth Rate	DW
	a	b	c				
1970-71 to 1990-91	10.329* (78.65)	-0.075* (-2.74)	0.005* (3.92)	0.665	Decelerating	7.5	1.5
Growth rate of production of pepper in post - globalization era							
Period	Regression Coefficients			R-Square	NGR	Growth Rate	DW
	a	b	c				
1991-92 to 2019-20	11.186* (144.87)	-0.047* (-10.54)		0.804	Decelerating	4.7	1.3
Growth rate of production of pepper 1970-71 to 2019-20							
Period	Regression Coefficients			R-Square	NGR	Growth Rate	DW
	a	b	c				
1970-71 to 2019-20	1.386 (1.76)	-0.002 (-0.84)	0.871* (11.53)	0.744	Decelerating	0.2	2.5

Source: Computed data

***** indicates significant at 5 % level; Parenthesis indicates t-value; NGR-Nature of growth rate; DW – Durbin Watson

as the t-value is (-1.04). The growth rate has decelerated by 0.1%. Here also, the Durbin Watson test has a value of 2.1 that indicates negative autocorrelation, and it is within the admissible limit. The result supports the fitness of the model and the model is able to explain 84 % of the variation as the R-Square value is 0.84.

Growth rate of Production of pepper

Table 2 contains the change in the production of pepper from 1970-71 to 2019-20. The change in production during the pre and post globalization era was separately analyzed along with the overall change during 50 years. The results give that there was a significant decelerating trend in the growth rate of production of pepper in the pre-globalization era (1970-71 to 1990-91) as the t-value is -2.74. The growth rate decelerated by 7.5 % per year. The log quadratic model framed to address the change is fit for explaining the variation, as the Durbin Watson test result has a value of 1.5. It also supported the presence of positive autocorrelation in the data. The model has the power to explain 66.5 % variation as the R-square value is 0.665.

The change in production of pepper during the post globalization period also shows a decelerating trend by 4.7 % per year and the t-value, say -10.54, supports the same. The log linear model explained 80.4% variation as the R-square value is 0.804. The Durbin Watson test supports the fitness of the model. The value of the Durbin Watson test is 1.3, which is admissible and it indicates positive autocorrelation in data. The deceleration in production is mainly due to the fact that pepper was not included under the purview of the Minimum Support Price of the government and there was a risk of a decrease in price and incurrence of losses in production and FTAs. An important feature of the present trade of pepper is related to the free import of pepper into India from Sri Lanka through an FTA between India and Sri Lanka. The FTAs such

Table 3.Growth rate of productivity of pepper

Growth rate of productivity of pepper in pre - globalization era							
Period	Regression Coefficients			R-Square	NGR	Growth Rate	DW
	a	b	c				
1970-71 to 1990-91	5.337* (85.27)	0.013* (2.69)		0.276	Accelerating	1.3	1.7
Growth rate of productivity of pepper in post - globalization era							
Period	Regression Coefficients			R-Square	NGR	Growth Rate	DW
	a	b	c				
1991-92 to 2019-20	5.955* (36.56)	-0.073* (-2.93)	0.002* (2.48)	0.295	Decelerating	7.3	1.2
Overall Growth rates of productivity from 1970-71 to 2019-20							
Period	Regression Coefficients			R-Square	NGR	Growth Rate	DW
	a	b	c				
1970-71 to 2019-20	2.563* (3.73)	-0.002 (-0.69)	0.539* (4.35)	0.313	Decelerating	0.2	2.1

Source: Computed data

***** indicates significant at 5 % level; Parenthesis indicates t-value; NGR-Nature of growth rate; DW – Durbin Watson

as the ASEAN and ISFTA, were a serious concern to pepper cultivators as it harms the domestic market and reduces the production of pepper. (Jose, 2018).

Log linear model was built to explain the overall growth in the production of pepper. The model can explain 74.4 % variation as per the R-square (0.744) value. The Durbin Watson test value is 2.5, which indicates both the fitness of the model and the negative autocorrelation in data. The results show that there was a significant decelerating growth rate of the production of pepper over 50 years (i.e. 1970-71 to 2019-20) and the same is supported by the corresponding t-vale (-0.84). The growth rate has decelerated by 0.2 %.

Growth rate of Productivity of pepper

Table 3 depicts the change in the productivity of pepper from 1970-71 to 2019-20. The analysis of the trend in productivity was carried out for 50 years. The productivity during the pre and post globalization was analyzed separately. The results give the trend in the growth rate of productivity of pepper in the pre-globalization era (1970-71 to 1990-91). The growth rate was accelerated by 1.3 % per year and the effect is supported by the value of t-statistic, say 2.69. The model followed a log linear function and the R-square value (0.276) gives that the model explains 27.6 % variation, keeping all other factors as constant. The Durbin Watson test results support the fitness of the model and its value 1.7 indicates positive autocorrelation in data.

The log quadratic model framed provided that there was a significant decelerating trend in the growth rate of productivity of pepper in the post-globalization era (1990-91 to 2019-20) as the t-value is -2.93. The growth rate has decelerated by 7.3 % per year. The R-square value (0.295) gives that the current model can explain 29.5 % variation in productivity during post-

Table 4. Growth rate of real price of pepper

Growth rate of Real price of pepper during pre-globalization era							
Period	Regression Coefficients			R-Square	NGR	Growth Rate	DW
	a	b	c				
1970-71 to 1990-91	0.485 (1.478)	0.003 (0.015)	0.741* (4.181)	0.52	Accelerating	0.3	1.2
Growth rate of Real price of pepper during post-globalization era							
Period	Regression Coefficients			R-Square	NGR	Growth Rate	DW
	a	b	c				
1991-92 to 2019-20	0.441 (1.508)	-0.001 (-0.012)	0.804* (6.772)	0.67	Decelerating	0.1	1.4
Overall Growth rates of Real price of pepper from 1970-71 to 2019-20							
Period	Regression Coefficients			R-Square	NGR	Growth Rate	DW
	a	b	c				
1970-71 to 2019-20	0.391* (2.199)	0.002 (0.852)	0.781* (8.508)	0.66	Accelerating	0.2	1.3

Source: Computed data

Foot note:* indicates significant at 5 % level; Parenthesis indicates t-value; NGR-Nature of growth rate; DW – Durbin Watson

globalization era. The Durbin Watson test value, say 1.2, supported the existence of positive autocorrelation in data and the fitness of the model.

There were statistically significant decelerating trends in the growth rate of productivity of pepper for 50 years (i.e. 1970-71 to 2019-20) and the t-statistics the log linear model value, say -0.69, provided for the same. The growth rate has decelerated by 0.2 %. The R-square value (0.313) gives that 31.3 % variation can be represented by the model. The fitness of the model is given by the Durbin Watson test and its value 2.1 revealed the existence of negative autocorrelation in data.

Growth rate of real price of pepper

Table 4 shows the trend in the real price of pepper. The log linear model framed to explain the change of the price of pepper during the pre-globalisation period (1970-1991) reveals that it has accelerated by 0.3 % per year. The value of the t-statistic supports such trend as it is 0. 015. The result of Durbin Watson test provided that the model is appropriate to explain the variation, as its value lies between the admissible limit, say 1.2. But it also supports the existence of positive autocorrelation in data. The R-square value (0.52) gives that the particular model can explain 52 % variation in the real price during pre-globalisation era.

The real price of pepper during the post-globalization period had shown a deceleration by 0.1 %. The value of t-statistics of log linear model formulated to define the changes, supported such trend, as its value is -0.012. The R-square value revealed that 67 % of the variation in the real price can be explained by the model. The Durbin Watson test that was used to verify the fitness of the model shows that there was positive autocorrelation among the data. However, the value of the test, say

1.4, is within the permissible limit and it gives the existence of the model.

The growth rate of the real price of pepper for 50 years (i.e. 1970-71 to 2019-20) has accelerated by 0.2 % per year and the value of the t-statistic (0.852) corresponding to the coefficient given by the log linear model supports the effect. As per the R-square value, 66 % of the change in real price from 1970-2020 is explained by the model. The Durbin Watson test result supported the existence of the model and its value i.e. 1.3 provided for positive autocorrelation in the data. Acceleration of price is very slow (only 0.3 %) compared to other cash crops in Kerala (Ratish and Scaria, 2023).

Quantification of the impact of productivity growth, area growth and price growth on production growth

Increase in production of pepper is the result of increase in area and increase in productivity of pepper in Kerala. Variation in both components (area and productivity) at different rate impacts the production. Decomposition analysis was used to estimate the contribution of area and productivity in the production of pepper in Kerala. The output change in pepper is split into three components: output change due to change in area alone, change in productivity alone and the interaction in area and productivity. The components could be respectively referred to as the area effect, the productivity effect and the interaction effect on output.

Table 5 shows that in the pre globalisation era i.e. 1970-71 to 1990-91 period the contribution of productivity (60.86 %) was higher than the area (37.27 %) i.e. Productivity effect > Area effect. The interaction effect was 1.88 per cent. In the post globalization era the contribution of area (70.61 %) is larger than the productivity (31.39 %), Area effect > Productivity effect. The interaction effect was -2. The overall production (50 years) of pepper i.e. 1970-71 to 2019-20 shows that about 464 % growth in pepper was due to area effect whereas there was negative productivity (-375.15 %) effect, Area effect > Productivity effect. The interaction effect was 11.25 %.

The result provided that the pre globalisation period was a higher yielding period for pepper as the productivity effect dominates than the area effect. It means that the yielding capacity from the available cultivating land is comparatively higher. The cultivators have got the advantage of the better production. But the effect cannot be viewed simply as effective utilisations of land as the study has not considered other determinants of pepper production.

The decomposition analysis has shown the contribution of factors in the growth of pepper production in state has increased in case of area in 50 years, however the productivity has shown a negative effect. The interaction effect has increased by 11.25 in 50 years. The rise in interaction effect supports

Table 5. Relative contribution of different factors in the growth of pepper production

	Period		
Effect	**1970-71 to 1990-91**	**1991-92 to 2019-20**	**1970-71 to 2019-20**
Area	37.27	70.61	463.9
Productivity	60.86	31.39	-375.15
Interaction	1.88	-2	11.25

Source: Computed data

Appendix

Area (Hectare), Production (Tonnes) and Productivity (Kg) of pepper in Kerala from 1970-71 to 2019-20 (50 Years)

Year	Area	Production	Productivity
1970-71	117540	25000	213
1971-72	116343	25100	216
1972-73	116343	25150	216
1973-74	118250	27750	235
1974-75	118410	27000	230
1975-76	108250	24580	227
1976-77	108700	24500	225
1977-78	101045	20146	199
1978-79	80500	20420	254
1979-80	107180	26793	250
1980-81	105770	28600	270
1981-82	108070	28500	264
1982-83	106710	25670	241
1983-84	103470	21470	210
1984-85	105835	17350	164
1985-86	121565	33121	272
1986-87	128865	30378	236
1987-88	146081	46819	321
1988-89	157006	43241	275
1989-90	167104	54135	324
1990-91	168507	46802	278
1991-92	178126	50620	284
1992-93	183478	49670	271
1993-94	184410	49850	270
1994-95	186720	59260	317
1995-96	190840	59940	314
1996-97	172600	53770	312
1997-98	173860	55520	319
1998-99	230890	68510	297
1999-00	184370	47540	258
2000-01	202130	60930	301
2001-02	203960	58240	286
2002-03	208610	45500	218

Year	Area	Production	Productivity
2003-04	216440	43400	201
2004-05	237670	49000	206
2005-06	237990	34000	143
2006-07	216710	33400	154
2007-08	175679	33950	193
2008-09	153711	33950	221
2009-10	171489	27500	160
2010-11	172182	20640	120
2011-12	172182	16500	96
2012-13	84710	25000	295
2013-14	84065	20000	238
2014-15	85430	30000	351
2015-16	85940	21000	244
2016-17	85210	20000	235
2017-18	85140	22000	258
2018-19	82761	17000	205
2019-20	82540	20000	242

Source: Spices Board of India, Kochi & Directorate of Arecanut and Spices Development Ministry of Agriculture Government of India, Calicut, Kerala

the existence of exogenous factors that determine the production of pepper.

CONCLUSION

The trend analysis of Kerala for 50 years from 1970-71 to 2019-20 shows that in the pre-globalization period i.e., from 1970-71 to 1990-91, there were decelerating trends in the area and production. The rate of deceleration was comparatively high in production compared to the area. However, the productivity and price have shown an increasing trend. The acceleration rate of productivity was comparatively higher than the price.

There was a decelerating trend in the area, production, productivity and real price of pepper in the post-globalization period. The rate of deceleration was comparatively high in productivity when compared to area and production. The real price decelerated by 0.1 %. The overall (50 years) trend of pepper from 1970-71 to 2019-20 has shown a deceleration in the area, production and productivity of pepper in the state. The rate of deceleration was comparatively high in production and productivity.However, the real price has accelerated by 0.2 % per year.

The decomposition analysis has shown that the contribution of factors to the growth of pepper production in the state has increased in the case of area in 50 years, from the pre globalisation to the globalisation era however, productivity has shown a negative effect. The interaction effect was also increased from pre-globalization to the globalization era.

The study concludes that the pepper economy of Kerala is in a crisis situation. A holistic approach is needed to bring out the interrelationships among the various factors associated with the problems and prospects of the pepper economy of Kerala.

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