Original Research Article

Trends in Area, Production, and Productivity of Capsicum in H.P. and Solan

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A B S T R A C T

The present study was conducted to work out the trends in area, production and productivity of capsicum in the H.P. and Solan during 1995-96 to 2015-16. The area under capsicum production in H.P. and Solan was found increasing with a significant growth rate of 6 per cent and 7.90 per cent per annum. The production of capsicum has shown fluctuations with a per annum significant growth rate of 10.30 per cent in H.P and 15 per cent in Solan. Productivity is increasing at a per annum significant rate of 4.30 per cent in H.P and 7.20 per cent in Solan.

Introduction

Capsicum is widely known as a highly preferred vegetable and salad. Himachal Pradesh contributes a relatively large amount of capsicum production in India. India contributes one-fourth of the world's production of capsicum. It is one of the cash crops in India and is grown in an area of about 24 thousand hectares with an annual production of 326 thousand tonnes (NHB, 2018). India's vegetable productivity is at par to the world as 17.3 metric tonnes/ha to 18.8 metric tonnes/ha (Tegar *et al.,* 2016).

Capsicum is also called as sweet pepper due to absence of capsaicin thus it has taken up the role of an important vegetable crop in Himachal and around

Globe. Himachal Pradesh ranks first in capsicum production in India with a production of 57.41 thousand tonnes (19.90 %) followed by Karnataka with 56.70 thousand tonnes (19.66 %), Madhya Pradesh with 33.84 thousand tonnes (11.73 %).

The cultivation of vegetables are restricted to particular geographical condition so there is a need to increase the crop diversification to enhance productivity, nutrition and food security (Devi *et al.,* 2020). Capsicum requires relatively low temperature for fruit set and development. In hilly areas it grows well in summer. Himachal Pradesh is a leading supplier of capsicum to the plains during the summer and rainy seasons. It is mainly grown in Solan, Sirmour, Bilaspur, Mandi, and lower areas of

district Shimla (Singh *et al.,* 2020). Solan district of Himachal Pradesh ranks first in capsicum production with a total production of 34850 tonnes in 1217 hectare.

The time-series data on area and production of capsicum were available from the year 1995-96 onwards. Hence, the analysis was covered for the period from 1995-96 to 2015-16. The popularity of capsicum production increased over the years so does its area and productivity.

The compound annual growth rate (CAGR) is a useful measure of growth over multiple time periods. In the significance of this the present research work is focused on analyzing the trends in area, production and productivity of capsicum in the H.P. and Solan during 1995-96 to 2015-16.

Experimental Procedures

The compound growth rates were computed by fitting the exponential function to area, production and productivity of capsicum in Himachal Pradesh and Solan for the period 1995-96 to 2015-16.

The ordinary least square method was used to fit the exponential function of the following form and it was converted into log-linear function with the help of logarithmic transformation as under:

$Y = ae^{bt}$

$\text{Ln } Y = \text{Ln } a + bt.$

where,

Y = Dependent variable (area, production and productivity)

t = Independent variable (time in year).

Compound growth rate (CGR) was calculated by using the following formula:

$CGR = b \times 100$

Standard error (SE) of CGR was calculated by using the following formula:

$SE \text{ of } CGR = 100 \times SE \text{ (b)}$

Results and Discussion

The trends in area, production and productivity of capsicum in the H.P. and Solan during 1995-96 to 2015-16has been presented in Table 1.

It could be seen from the Table 1 that the maximum area under capsicum cultivation has been 3606 ha during the crop year 2015-16 in H.P. The maximum production under capsicum has been seen during the crop year 2015-16, which was 71930 MT respectively. The area under capsicum has been found lowest during the year 1995-96 in H.P. (1045 ha). The production of capsicum has been found to be minimal during the crop year 1996-97 i.e., 9750 MT. The area under capsicum production in H.P. is increasing with a significant growth rate of 6 percent per annum. The production of capsicum has shown fluctuations with a significant growth rate of 10.30 percent per annum. Productivity is increasing at a rate of 4.30 percent per annum which is found significant.

The trends in the area, production, and productivity of capsicum in the Solan District represents that the lowest area and production have been found during the year 1995-96 which was 210 ha and 2150 MT respectively. The lowest productivity of 1.06MT/ha has been recorded during the year 2001-02. The highest productivity was recorded during the year 2015-16 which was 1217ha, 34850 MT and 28.64 MT/ha. The area under capsicum crop in Solan district is increasing at a significant growth rate of 7.90 percent per annum. Production has shown significant growth of 15 percent and productivity is increasing with a significant growth rate of 7.20 percent per annum. Significant positive growth in the area, production, and productivity of capsicum in H.P. was observed during the period of investigation. Similar trends were exhibited in the case of the Solan district.

Table.1 Area, production, productivity of capsicum in H.P. and Solan

Years	H.P			Solan		
	Area (ha)	Production (MT)	Productivity (MT/ha)	Area (ha)	Production (MT)	Productivity (MT/ha)
1995-1996	1045	10241	9.80	210	2150	10.24
1996-1997	1300	9750	7.50	360	2410	6.69
1997-1998	1400	11500	8.21	380	3200	8.42
1998-1999	1500	12300	8.20	390	3200	8.21
1999-2000	1550	13880	8.95	410	3700	9.02
2000-2001	1630	15250	9.36	425	3040	7.15
2001-2002	1650	15430	9.35	390	415	1.06
2002-2003	1420	16870	11.88	220	1760	8.00
2003-2004	1642	17862	10.88	385	3465	9.00
2004-2005	1834	19455	10.61	460	3588	7.80
2005-2006	2081	30876	14.84	601	7813	13.00
2006-2007	2277	33534	14.73	649	8437	13.00
2007-2008	2577	37529	14.56	652	8490	13.02
2008-2009	2447	31810	13.00	653	8510	13.03
2009-2010	2978	42738	14.35	955	14400	15.08
2010-2011	3206	44888	14.00	960	14600	15.21
2011-2012	3116	44735	14.36	969	15182	15.67
2012-2013	3102	46692	15.05	975	16396	16.82
2013-2014	3344	53032	15.86	1068	19844	18.58
2014-2015	3531	69443	19.67	1205	34510	28.64
2015-2016	3606	71930	19.95	1217	34850	28.64
CAGR (%)	6.00*	10.30*	4.30*	7.90*	15.00*	7.20*
	(0.30)	(0.40)	(0.40)	(0.80)	(2.10)	(1.90)

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