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Growth rate of Chilli production in Raigarh district of Chhattisgarh

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ABSTRACT
The present study has analysed the growth rate of chilli production in Raigarh district of Chhattisgarh. Knowledge of the growth trend in area, production and productivity of a crop is an important ingredient of perspective planning and policy decisions. The vegetable production has vital importance as it provides three to four times more calories of energy and cash incomes per hectare of land as compared to cereals. Vegetable crops hold a great promise for fostering economic growth and improving the diet of the people. Vegetable cultivation gives much higher returners per unit of land, labour and capital investment as compared to cereals crops. Chilli crop is grown all over India not only for a huge home market but also for export purposes. It has become indispensable in every Indian home. Chilli is valued for its diverse commercial uses. Demand is increasing for value added products using chillies such as chilli paste, curry powders and sauces for the convenience of food industry. It occupies an important place in Indian economy. In Raigarh district, growth rates of area, production and productivity has increased due to very suitable climatic condition, good market availability, timely availability of quality inputs and the effective extension work. But, in Chhattisgarh, decreasing trend is seen growth rate of area whereas production and productivity had been positive. The figures clearly indicate that production of this crop is not only increasing due to increase in area under crop but productivity of chilli is also contributing to the production significantly. Thus, the government must come forward to concentrate more on chilli production through research and development, which has more scope for export earnings.
Keywords: Growth rate, chilli, Raigarh, Policy.

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INTRODUCTION

Chilli (*Capsicum annuum* L.*)* is one of the most valuable crop of India which belongs to the solanaceae family. It is a crop of both tropical and sub-tropical areas which can be grown up to 2000 meter altitudes and requires a warm humid climate in Indian condition. Though, chilli can be grown in many types of soils, well drained loamy soils rich in organic matter with soil pH range of 6-7 are best suited for its cultivation. The Chilli plant is a white flowered, dark green or purple leaved plant that grows up to 1.5 m in height. Fruits are variable in size, shape, colour and pungency. There are more than fifty chilli varieties grown in India.

Chilli is an indispensable condiment of every Indian household. It is used in a number of activities such as vegetables, spice, condiments, sauce, pickles and chutneys for culinary purposes. Dry chillies are used for curry powder. The pungency in chillies is due to an alkaloid capsaicin which has high medicinal value. Chilli occupies an important place in Indian diet and it is consumed daily as condiment in one or the other form. Green chillies are rich in Vitamin A and C, minerals and protein. Dry chillies are also rich in Vitamin A and D. A non-conventional use of chilli is in the self-defense sprays which are gaining popularity in USA.
In the world, area and production of chilli is around 19.89 million hectare and 33.52 million tonnes respectively. Major chilli growing countries are India, Myanmar, Bangladesh, Pakistan, Thailand, Vietnam, Romania, China, Nigeria and Mexico etc. The bulk share of chilli production is with Asian countries. The largest producer of chillies in the world is India accounting for 13 million tonnes of production annually followed by China with a production of around 3 million tonnes. Out of the total (33.52 million tonnes) world chilli production, 38.78 percent is contributed by India followed by China (8.65 percent). India also leads in the context of maximum area covered under chilli cultivation. The world trade in chilli account for 16 percent of the total spice trade in the world occupying second position after black pepper.

The total area under spices is 92769 hectare in the Chhattisgarh state with a production of 632031 metric tonnes. Chilli is the important vegetable and spice crop of the Chhattisgarh state. The dry climate during the ripening of fruit is ideal condition therefore there is lot of scope to improve the productivity of this crop in the state as we are behind from several countries like Bangladesh, Pakistan, Thailand, Nigeria, Mexico and China in case of productivity.

Table.1 Area, production and productivity of chilli in Chhattisgarh (2012-13)

District	Area (in hectare)	Percent share of total area	Production (in metric ton)	Percent share of total production	Productivity (qtl/ha)
Raigarh	4558	11.02	29130	10.39	63.90
Kabirdham	3060	7.39	30600	10.91	100
Bilaspur	2908	7.03	18395	6.56	63.25
Surguja	2612	6.31	22933	8.18	87.79
Mahasamund	2376	5.74	14256	5.08	60
Jashpur	2200	5.31	14058	5.01	63.9
Durg	2190	5.29	5913	2.10	27
Raipur	2128	5.14	13621	4.85	64
Korba	2100	5.07	9506	5.24	45.26
Rajnanadgoan	1778	4.29	11557	4.12	65
Others	15449	37.35	110343	37.56	
Total	41359	100	280312	100	

MATERIALS AND METHODS

Knowledge of the growth trend in area, production and productivity of a crop is an important ingredient of perspective planning and policy decisions. Keeping this point in view, the rates of growth of area, production and productivity of Chilli Raigarh District and in Chhattisgarh have been estimated in this study the results are presented in table.

Secondary information is taken from the office of Deputy Director of Horticulture, Raigarh. The district-wise data on area, production and productivity of this crop is collected from the office of Director of Horticulture, Raipur in order to calculate the compound growth rate. Thirteen years data during the period of 2001-2002 to 2012-2013 is collected, for the purpose to estimate the compound growth rate of area, production and productivity of this crop.

To study the growth rate in Area, Production and Productivity of Chilli in Raigarh District, the compound growth rate was computed using the exponential growth model.

$Y = a\ bt$

$\log y = \log a + t \log b$

$Y = A + B\ t$

Where,

$Y = \log y$

$A = \log a$

$B = \log b$

Y = Area (ha)/ production (tonnes) and productivity (kg/ha)

t = Time elements which takes the value 1,2…n for various years

A = Intercept

B = Regression co-efficient

Compound Growth Rate „r = (Antilog of B-1) × 100.

t = r/SE(r)

Where,

r = Compound growth rate

SE= Standard Error.

RESULTS AND DISCUSSION

The compound growth rates of area, production and productivity of chilli in Raigarh districts as well as in Chhattisgarh state during the period of study 2000-01 to 2012-13 is presented in Table 2 The table reveals that production of chilli in the state is increased significantly. The compound growth rate of production (54.99 percent) in the state may be the consequent of significant growth rate of area (18.52 percent) and productivity (30.45 percent) as well.

The fast urbanization and industrialization of the state are some important reasons for lowest growth rate in area of crop. It is not only true for this crop but for other crops also in the state. A significant growth in productivity of chilli is estimated as during the study period both at district level and state level. The production of chilli also shows an increased significantly growth rate in the districts and state. The growth rate in production varies from 62.41 percent to 54.99 percent. These figures clearly indicate that production of this crop is not only increasing due to increase in area under crop but productivity of chilli is also contributing to the production significantly.

Table.2. Growth rate of chilli in Raigarh District and Chhattisgarh

S. No.	Particulars	Growth rate
1.	Raigarh	
	a. Area	21.81* (0.00661)
	b. Production	62.41* (0.02609)
	c. Productivity	33.35* (0.01281)
2.	Chhattisgarh	
	a. Area	18.82* (0.00453)
	b. Production	54.99* (0.02711)
	c. Productivity	30.45* (0.01994)

Note: figures in the parenthesis indicate the Standard Error of Coefficient.
* - Significant at 1 percent probability level

CONCLUSION

The Chhattisgarh state has 27 districts in which 41359 hectare. Area under chilli having 280312 metric tonne of production. Out of this, 4558 hectare area (11.02 percent) is in Raigarh district which is highest among all 27 districts of the state. The growth on area, production and productivity of chilli increased significantly over the study period (2000-01 to 2012-13) both at district level and state level similar trend is observed in other selected districts. In Raigarh district, growth rates of area, production and productivity has increased due to very suitable climatic condition, good market availability, timely availability of quality inputs and the effective extension work. But, in Chhattisgarh, decreasing trend is seen growth rate of area whereas production and productivity had been positive. It is clearly indicated that production of this crop is not only increasing due to increase in area under crop but productivity of chilli is also contributing to the production significantly. Thus, the government must come forward to concentrate more on chilli production through research and development, which has more scope for export earnings.

REFERENCES

1. Acharya S. P., Basavaraja, H., Kunnal, L. B., Mahajanashetti S. B. and Bhat, A. R. S. 2012. Growth in area, production and productivity of major crops in Karnataka, Karnataka J. Agric. Sci., 25 (4): 431-436
2. Ahmad1, I. M., Samuel E., Makama S.A. and Kiresur V.R. 2015. Trend of area, Production and Productivity of major cereals: India and Nigeria Scenario. Research Journal of Agriculture and Forestry Sciences 3(2): 10-15.
3. Anwarul Huq, A.S.M and Fatimah Mohamed Arshad, 2010. "Technical Efficiency of Chili Production", American Journal of Applied Sciences, 7(2): 185-190.
4. Choudhary K. and Kundal R. 2015. A Study on Area, Production and Yield of Tomatoes in India from 2002 to 2011 International Journal of Advance Research in Computer Science and Management Studies, 3 (7): 90-94
5. Dinesha M. V. and Sriramappa S. E. 2015. Growth in Area, Production and Productivity of Vegetables and Fruits in India with Special Reference to Karnataka IJAR; 1(8): 288-293
6. Kondal K., 2014. Growth Rate of Area, Production and Productivity of Onion Crop in Andhra Pradesh. Indian Journal of Applied Research, 4 (5): 4 - 6
7. Prabhakaran, K. and Sivapragasam, C. 2013. Analysis of growth rates of rice and sorghum in Andhra Pradesh. International Journal of Farm Sciences. 3(1): 1-9
8. Rajur, B.C., B.L. Patil and H. Basavaraj, 2008. "Economics of Chilli Production in Karnataka", Karnataka Journal of Agricultural Sciences, 21(2): 237-240.

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