

Original Research Article

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Estimate the Compound Growth Rate (CGR) of Area, Production and Productivity of Chick-Pea in Chhattisgarh State

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ABSTRACT

Keywords

Compound growth rate, area, production, productivity & significant

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The present study was carried out to estimate the compound growth rate of area, production & productivity of chick-pea in Chhattisgarh. The current study made use of secondary data on area, production & productivity from 2009-10 to 2018-19 was collected from various government sources including the Directorate of Economics & Statistics and Department of Agriculture etc. To examine the growth rates in area, production and productivity of chick pea in Chhattisgarh for the period of 2009-10 to 2018-19 exponential form were estimated. It can be clearly seen that the area, production & productivity of chick pea in Chhattisgarh registered positive significant growth rate. In context of area Chhattisgarh shows positive significant growth. In context of production Chhattisgarh shows positive significant growth. In context of productivity Chhattisgarh shows positive significant growth.

Introduction

In many developing countries, chick pea is a major source of protein, especially among the poorest segments of the population who depend on vegetable sources to meet their protein and energy needs. Chickpea is cultivated primarily as a rainfed crop in India in almost all parts of the country. Chickpea production was projected at around 11.23 million tones (mt) during 2017-18, which is 46 percent of the overall production of pulses

(23.95 mt) in India. Madhya Pradesh accounted for 36.37 percent of the total gram area and 45.54 percent of the country's total gram production in 2018-19, ranking first in both area and production. In terms of area, Maharashtra (16.94 per cent) and Rajasthan (15.92 per cent) were next. The ten states of MP, Rajasthan, Maharashtra, Karnataka, UP, AP, Gujarat, Jharkhand, Chhattisgarh and Telangana accounted for more than 90% of the country's gram output during the reporting period. In Chhattisgarh, in 2018-2019, pulse

crops were grown in a sizeable area of 70313 tonnes of total production. Chhattisgarh's most important pulse crops are Lathyrus, Pigeon Pea, Chickpea, Black Gram and Green Gram. The Chick pea is the most significant pulse crop in the state of Chhattisgarh. It currently occupies an area of 33.09 thousand hectares, with production in Chhattisgarh of 34.55 thousand metric tonnes. Bemetara, Rajnandgaon, Kabirdham and Durg are the main districts for chick-pea cultivation.

Materials and Methods

Method of enquiry and data collection

The current study made use of secondary data on area, production & productivity from 2009-10 to 2018-19 were collected from various government sources including the Directorate of Economics & Statistics and Department of Agriculture etc. to estimate the compound growth rates in area, production and productivity of chickpea.

Analytical tools

Computation of growth rate

Annual compound growth rates in area, production and productivity of Chickpea in Chhattisgarh state was done by fitting an exponential function of the following form.

$$Y = \alpha \beta^t$$

$$\log Y = \log \alpha + t \log \beta$$

Where,

Y= Area, production & productivity of Chickpea in Chhattisgarh

α = Constant

β = Regression coefficient

t= time in year

Compound growth rate (%) = $(\text{Antilog } \beta - 1)100$.

Results and Discussion

To examine the growth rates in area, production and productivity of chick pea in Chhattisgarh for the period of 2009-10 to 2018-19 exponential form were estimated.

Growth rate in area, production and productivity of chick pea

Growth rate in area, production and productivity of chick pea in Chhattisgarh is presented in Table 3.1. It can be clearly seen from the table that the area, production & productivity of chick pea in Chhattisgarh registered positive significant growth rate.

In context of area Chhattisgarh shows positive significant growth. In context of production Chhattisgarh shows positive significant growth. In context of productivity Chhattisgarh shows positive significant growth.

Growth rate in area, production and productivity of chick pea in Chhattisgarh is presented in Table 3.1. It can be clearly seen from the table that the area, production & productivity of chick pea in Chhattisgarh registered positive significant growth rate. In context of area Chhattisgarh shows positive significant growth.

Table.1 Compound Growth Rate of area, production and productivity of chick pea

S. No.	Region	Compound Growth Rate		
		Area	Production	Productivity
1.	Chhattisgarh	2.94**	4.07**	1.07**

Note- **Significant at 1% level of significance.

Table.2 Area, production and productivity of chick pea in Chhattisgarh

S. No.	Year	Area (ha)	Production (qt)	Productivity (qt/ha)
1.	2009	263937	230187	0.87
2.	2010	250496	239609	0.96
3.	2011	260208	260728	1.00
4.	2012	267890	304859	1.14
5.	2013	289734	221569	0.76
6.	2014	293263	311152	1.06
7.	2015	280929	218843	0.78
8.	2016	290655	338322	1.16
9.	2017	335025	331674	0.99
10.	2018	330912	345472	1.04

Source: Directorate of Economics & Statistics Ministry of Agriculture, Govt. of India.

Fig.1 Trend in area of chick pea in Chhattisgarh state

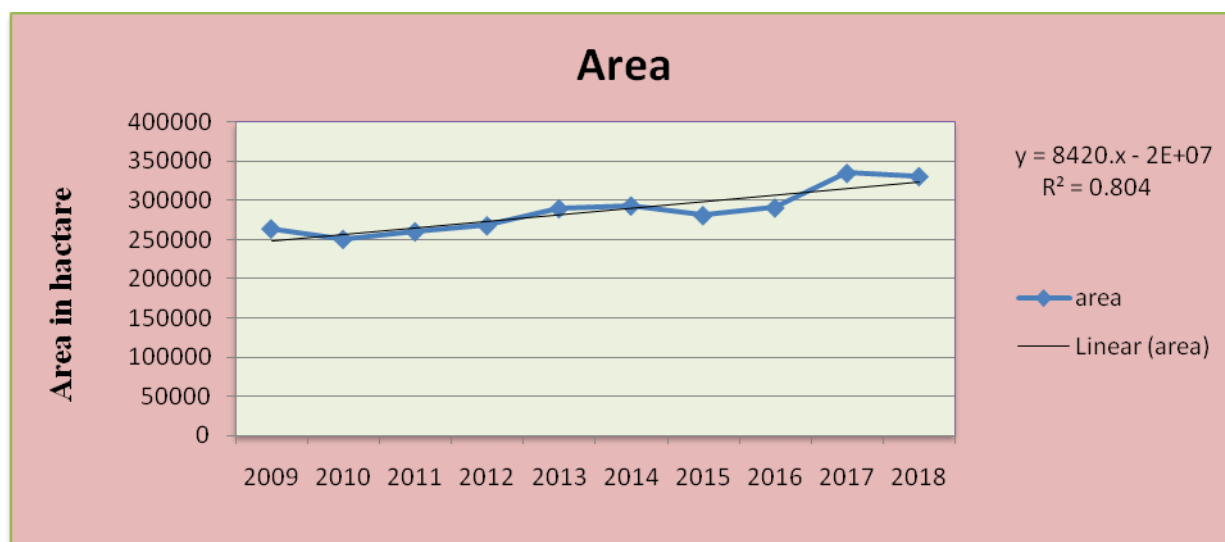


Fig.2 Trend in production of chick pea in Chhattisgarh state

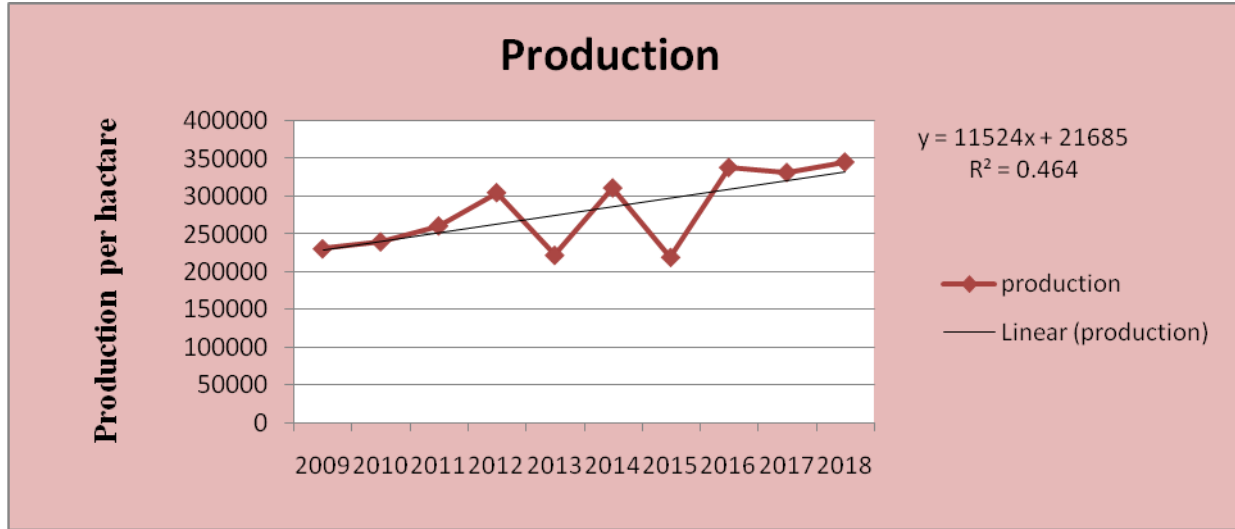


Fig.3 Trend in productivity of chick pea in Chhattisgarh state



In context of production Chhattisgarh shows positive significant growth. In context of productivity Chhattisgarh shows positive significant growth.

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