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## Estimate the compound growth rate (CGR) of area, production & productivity of groundnut in Chhattisgarh state

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### Abstract

The present study was carried out to estimate the compound growth rate of area, production & productivity of groundnut 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 groundnut in Chhattisgarh for the period of 2009-10 to 2018-19 exponential form were estimated. It can be clearly seen that the area & production of groundnut in Chhattisgarh registered negative non-significant growth rate & productivity of groundnut in Chhattisgarh registered positive non-significant growth rate. In context of area Chhattisgarh shows negative non-significant growth. In context of production Chhattisgarh shows negative non-significant growth. In context of productivity Chhattisgarh shows positive non-significant growth.

**Keywords:** compound growth rate, area, production, productivity & significant

### 1. Introduction

Groundnut (*Arachis hypogaea* L.), is an important crop grown worldwide which is cultivated in more than 100 countries. Groundnut is considered as the world's fourth largest source of edible oil and third most important source of vegetable protein. It is also a major oilseed legume crop in India and meets about 30 per cent of the edible oil requirements in the country. Groundnut is one of the major commercial oil seed crop in India and ranked first in area and second in production in the world. This area constitutes approximately one tenth of the total cultivated area in India. India occupies a prominent position, both in regard to acreage and production of oilseed crops in the world. India is one of the largest producers of oilseeds in the world and occupies an important position in the Indian agricultural economy. Groundnut is called as the 'king' of oilseeds. It is one of the most important food and cash crops of our country. While being a valuable source of all the nutrients, groundnut is a low-priced commodity. Groundnut is also called as wonder nut and poor man's cashew nut. Groundnut is one of the most important cash crops of our country. It is a low priced commodity but it has a valuable source of all the nutrients.

Groundnut is important in the diet, being the major source of vegetable protein and edible fat. The haulms are a rich protein feed for livestock. Shelled groundnuts are basically used as seed, consumed as raw edible groundnuts or after transformation into "prepared" groundnuts (roasted, salted, flavoured, etc.) or into groundnut butter/ paste. The seeds can also be crushed for oil and a by-product as groundnut meal (animal feed). Groundnut oil is used as quality cooking oil with a high smoke point (440°F) and neutral flavour and odour.

### 2. Materials and Methods

#### 2.1 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 groundnut.

#### 2.2 Analytical tools

##### 2.2.1 Computation of growth rate

Annual compound growth rates in area, production and productivity of Groundnut in

Chhattisgarh state was done by fitting an exponential function of the following form.

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

$$\text{Log } Y = \log \alpha + t \log \beta$$

Where,

Y= Area, production & productivity of Groundnut in Chhattisgarh

$\alpha$ = Constant

$\beta$ = Regression coefficient

t= time in year

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

### 3. Result and Discussion

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

#### 3.1 Growth rate in area, production and productivity of groundnut -

Growth rate in area, production and productivity of groundnut in Chhattisgarh is presented in Table 1. It can be clearly seen from the table that the area and production of groundnut in Chhattisgarh registered negative non-significant growth rate & productivity of groundnut in Chhattisgarh registered positive non-significant growth rate. In context of area Chhattisgarh shows negative non-significant growth. In

context of production Chhattisgarh shows negative non-significant growth. In context of productivity Chhattisgarh shows positive non-significant growth.

**Table 1:** Compound Growth Rate of area, production and productivity of groundnut

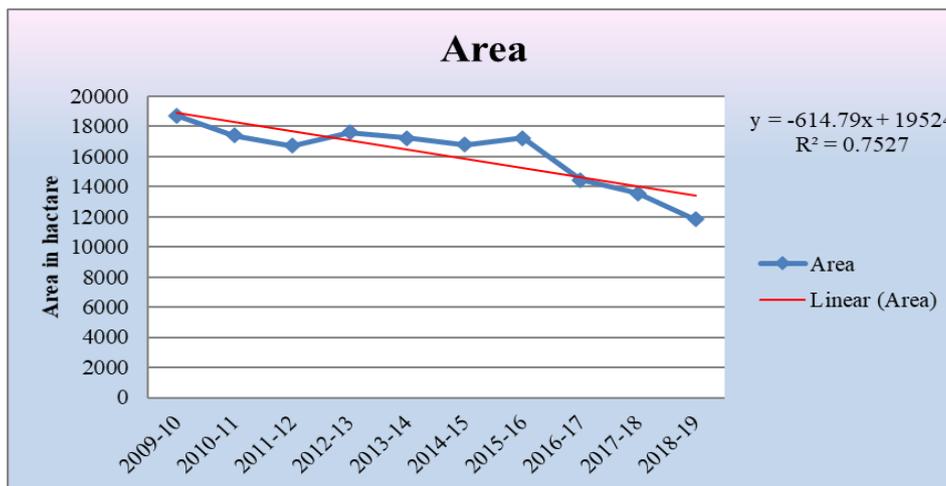
S. No	Region	Compound Growth Rate		
		Area	Production	Productivity
1.	Chhattisgarh	-1.50 <sup>NS</sup>	-0.29 <sup>NS</sup>	1.23 <sup>NS</sup>

Note- NS = Non-significant.

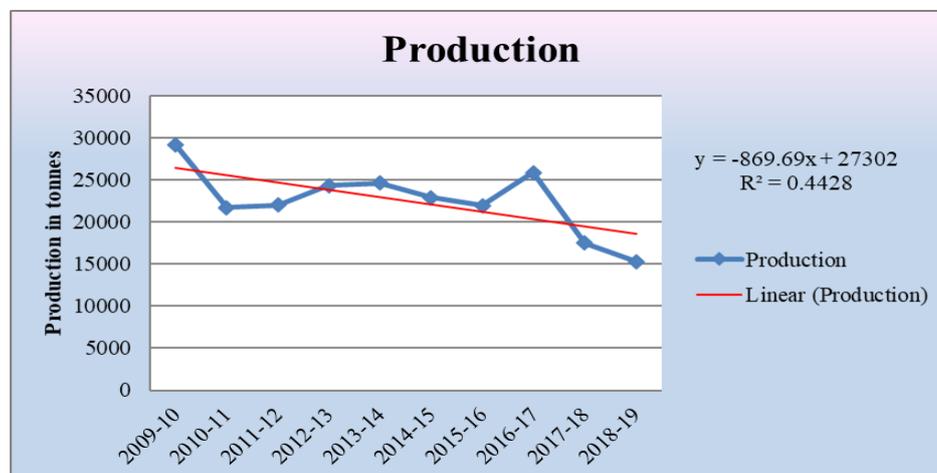
**Table 2:** Area, production and productivity of groundnut in Chhattisgarh

S. No.	Year	Area (ha)	Production (qt)	Productivity (qt/ha)
1.	2009-10	28900	39100	1.35
2.	2010-11	29000	42400	1.46
3.	2011-12	28400	37500	1.32
4.	2012-13	25300	34900	1.38
5.	2013-14	25600	37300	1.46
6.	2014-15	25700	36300	1.41
7.	2015-16	27300	33600	1.23
8.	2016-17	25200	46400	1.84
9.	2017-18	20300	33393.5	1.65
10.	2018-19	30120	40300.56	1.34

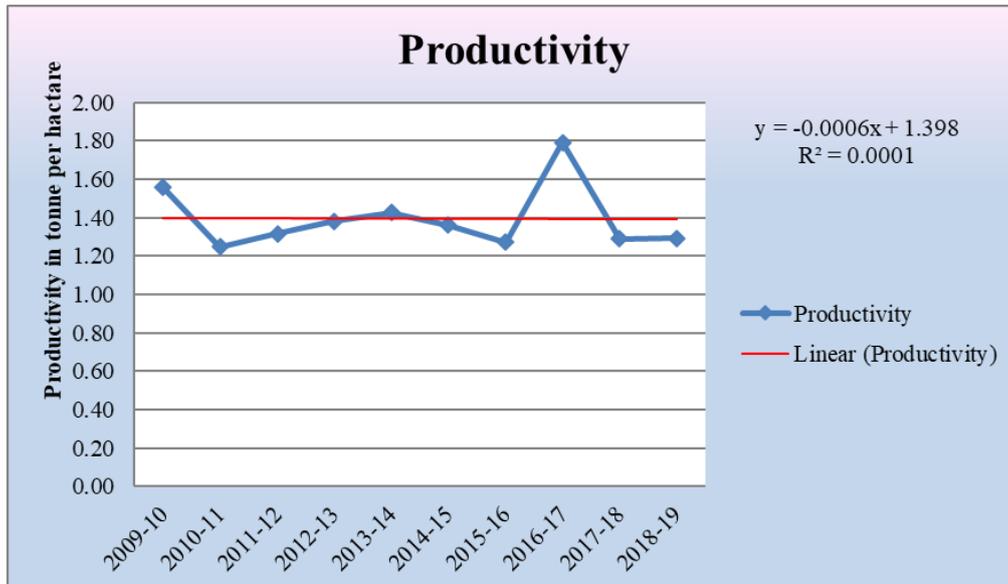
Source: Directorate of Economics & Statistics Ministry of Agriculture, Govt. of India.



**Fig 1:** Trend in area of groundnut in Chhattisgarh state



**Fig 2:** Trend in production of groundnut in Chhattisgarh state



**Fig 3:** Trend in productivity of groundnut in Chhattisgarh state

#### 4. Conclusion

Growth rate in area, production and productivity of groundnut in Chhattisgarh is presented in Table 1. It can be clearly seen from the table that the area and production of groundnut in Chhattisgarh registered negative non-significant growth rate & productivity of groundnut in Chhattisgarh registered positive non-significant growth rate. In context of area Chhattisgarh shows negative non-significant growth. In context of production Chhattisgarh shows negative non-significant growth. In context of productivity Chhattisgarh shows positive non-significant growth.

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