

## ECONOMICS OF CARDAMOM PRODUCTION IN INDIA - A TREND ANALYSIS

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### Abstract

*The richness of the culture and the fragrance of the spices were the major sources of glory of the ancient India. It is really amazing to see that India could maintain her supremacy in the production and trade of spices even from the Vedic ages dating back to 6000 B.C, to the modern era of the third millennium. The geographical and climatic peculiarities of South India in general and Kerala in particular are the major gifts of Nature still providing us an upper hand in the world of spices. "Geographical advantages of the state coupled with the sterling efforts of the people, particularly of the high ranges of the Western Ghats, help us to produce the best quality spices favored all over the world".<sup>1</sup> The history and the density of our country, perhaps the whole world were influenced unbelievably by the spices. It was the taste of the 'Queen of spices' Cardamom, which attracted the Arabs and the Europeans to this country and ultimately led to the foreign domination. It was the search for spices, which tempted the mariners like Vasco de Gama of Portugal, Christopher Columbus of Spain and many others to undertake hazardous voyages to the East. The significance of the spices in the history of the world is evident from the fact that even the discovery of the American continent by Columbus was accidental during the search for spices. The history of the world would have been different had India not been the land of spices. It was a new turn in the history when General Diaz, first arrived at the Cape of Good Hope, in search of spices of Malabar coast, through the sea route. It was this discovery, which eventually led to the arrival of Vasco de Gama at Calicut, Kerala.*  
**Keywords:** Vedic ages, Queen of spices, Cardamom, Ayurveda system, export, Western Ghats

"The basic purpose of the expedition of Gama was to obtain a direct link with the South India for Spices trade, eliminating the Arab and Italian spices traders who had monopoly at that time".<sup>2</sup> India had monopoly in spices production and export for a very long period. But the situation is fast changing and we are facing extreme competition from many spices producing countries, especially with regard to Economic issues. Whatever may be the competition, India is still the leader in spices production and export. On an average, we produce about 28, 00,000 tons of spices every year. In fact, more than 90 percent of our spices production is consumed in India itself. It is amazing to see that the remaining 10 per cent of the spices are exported from India gives us 40 percent share of world spices market.<sup>3</sup> Cardamom and other spices constitute the lion's share of Indian spices export out of which more than 60 percent is the contribution from Kerala.<sup>4</sup> Throughout the world, climate varies, soil varies and flora and fauna vary. So in the life of human beings, climate and soil decide the type of the agricultural products. Broadly speaking the agricultural products are divided in to subsistence level, and plantation crops or cash crops. Pepper, Cardamom, and Ginger, popular spices are used in India and abroad. The objectives of the paper are:

1. To make an overview of the present Economic system of Cardamom Plantation in India.
2. To analyze the trend and growth of Cardamom production, area and yield in India.
3. To offer suitable policy suggestions for making the Cardamom Industry Economically viable and more profitable.

### The Indian Origin of the Cardamom

Cardamom was introduced to the world by India. It was used as a spice for food and to manufacture medicines. In Ayurveda system of medicine Cardamom plays a vital role in the preparation of medicines. Nearly 8000 years ago, Cardamom was used as a spice and a medicine. History records that kings of Eurasia loved Cardamom and longed to possess it in large quantities and to have trade with India. They considered Cardamom more precious than gold. Pepper and Cardamom are called the king and queen of spices respectively since ancient days. It was an

important product of import and export. Even today Indian Cardamom is exported to US, UK, European countries, Japan, Asia, and Arabia and all over the world. Cardamom is used to produce perfumes in Asia and in Europe. Cardamom is used in food, medicine, perfumes and export commodity of very high value deciding the Balance of Payment and at time favorable or unfavorable foreign trade at the international market. Besides Cardamom Plantation provides permanent employment opportunity for millions of skilled and unskilled laborers', Cardamom industries engage millions of men and women in the processing of Cardamom. It is a horticultural crop of tropical and subtropical regions. It needs evenly distributed rain, cool and shady climate and rich soil and the hilly regions. Western Ghats have the ideal soil climate and rain fall to produce Cardamom. The state of Kerala, Karnataka, Tamilnadu, and Andhra in India, and nearby country Nepal produce Cardamom. Guatemala is the tough competitor to India in the export of Cardamom. Small Cardamom is the perennial commercial crop. The following table presents the production of Cardamom Area under cultivation and yield in India during 1991-92 to 2015 -16.

Year	Production Metric Tons	Area (Hects.)	Yield (Kgs./Hects.)
1991-92	5000	81,845	80
1992-93	4,250	82,392	70
1993-94	6,600	83,960	108
1994-95	7,000	83,651	113
1995-96	7,900	83,802	128
1996-97	6,625	73,593	125
1997-98	7,900	72,444	149
1998-99	7,170	72,135	135
1999-00	9,330	72,429	174
2000-01	10,480	72,320	195
2001-02	11,365	72,663	210
2002-03	11,920	73,125	218
2003-04	11,580	73,237	210
2004-05	16,900	73,663	240
2005-06	17,800	73,320	230
2006-07	15,700	73,135	210
2007-08	13,400	72,125	215
2008-09	15,450	73,333	218
2009-10	15,720	73,210	220
2010-11	16,000	73,240	230
2011-12	15,800	73,300	215
2012-13	18,400	73,210	230
2013-14	21,280	73,444	210
2014-15	21,800	73,392	220
2015-16	22,000	73,320	250

Table 1 Cardamom Industry in India

Source: Spice India, March, 2007 and Spice India, March 2016.

The estimation of trend and growth rates for the selected variables of cardamom production, area under cultivation and the yield reveal the position of the cardamom Industry in the period.

Table 2 Trend in Production, Area and yield of Cardamom in India

Variable	Regression Coefficients		R <sup>2</sup>	CGR
	a	b		
Production	8.552079* (141.73)	0.061354* ( 15.11 )	0.90	6.32
Area	11.28* (653.90)	-0.00465* (-4.0025 )	0.41	-0.46
Yield	4.6244* (38.86)	0.04139* (7.833 )	0.72	4.23

It can be inferred from the above table that the production of Cardamom in India had increased steadily and it was more than four times during the period 1991-92 to 2105-16. The compound growth rate for the same was 6.32. It is a good sign for the progress and prosperity of the Indian Cardamom Industry.

Note: 1. \* indicates 5 per cent level of significance  
2. Figures in brackets represent the t-values

In fact, the area under cultivation of cardamom had come down from 81,845 hectares to 73,320 hectares from 1991-92 to 2105-16. This may be due to the reason such as poor rainfall, shortage of finance, frequent occurrences of plant diseases and escalating cost of production. As a result, the compound growth rate for the area of cardamom cultivated was negative and it was -0.46. This situation is to be carefully analysed for overcoming the drawbacks. It is interesting to note that despite fall in the area of cultivation, the yield per hectare of cardamom had a positive sign and the compound growth rate was 4.23. It can be inferred that the growth trend is positive and it seems that there is a lot of scope for improvement in the performance of the Cardamom Industry in India. Fortunately India has tropical, subtropical, Mediterranean and cold climate conditions and has all types of soils available in the world. While the southern part of

India has tropical climate, the Central India has subtropical climate and the Northern India has the continental climate. Indian deserts have Egyptian climate. Indian hilly regions are ideally suitable to cultivate Cardamom. The rich fertile soil of India is favorable to the cultivation of Cardamom which needs humid climate and evenly distributed rainfall. Western Ghats and Eastern Ghats have ideal climatic condition to produce Cardamom. India has oceanic wealth also. The natural ports of India have all the advantages of export and import facilities. India is the land of spices and the land of wealth. Hence many European invaders invaded India. The Portuguese, the Spaniards, the French, the British and the Greeks traded with India and invaded it because of its natural wealth and for its spices like Cardamom.

### Cardamom Plantation in Idukki District in Kerala

Idukki District was bifurcated from Devikulam, Peermedu and Udoppanchola taluk from Kottayam District and Thodupuzha taluk from Ernakulum on the 26<sup>th</sup> of January 1972. It has an extent of 5019 square kilo meters. It has four revenue Taluks. Such as Devikulam, Peermedu, Udoppanchola and Thodupuzha it has 8 blocks as Adimali, Azhutha, Devikulam, Elamdesom, Idukki, Nedumkandom and Kattapana and Thodupuzha. Topographically Idukki is a hilly area with an altitude of 2500 feet to 5000 feet above the sea level <sup>5</sup>. The climate is cool with an average annual rain fall of 700 cm. It is on the slope of the Western Ghats. Idukki hydro projects include Idukki Arch Dam. Cardamom is planted in nearly 3500 hectares. Idukki District has a population of 56, 66,900 of which nearly 52% are men and 48% are women<sup>5</sup>. Idukki district has transport, communication, and electricity facilities. Finance is available easily for the plantation. Cardamom needs humid climate rainfall and shade. It can be cultivated in hills where we have rich and fertile soil. These natural advantages are the favorable conditions to grow Cardamom.

Western Ghats receive monsoon rain and the dense forests provide shade to the Cardamom. Cardamom is a sensitive plant. Too much heat and wild wind are not conducive. Idukki district is known for its damp climate due to sufficient rain and shade because of the forest. In fact, small variety of Cardamom production in Idukki District Kerala Idukki district produces nearly 80% of the total Cardamom produced in India. Karnataka and Tamilnadu along with Kerala produce 1/3 of the world production of Cardamom. Guatemala is toughest competitor to the Indian export of Cardamom. Until the 20<sup>th</sup> century India was the unquestioned monarch in the export of Cardamom <sup>6</sup>. Indian small Cardamom is liked by the European countries and it is superior in quality to the large type of Cardamom that is produced by Guatemala and other countries. Arab countries import such large variety Cardamom, being a cash crop maintains a favorable balance of trade in India by its huge export. The scope of the paper is confined to Idukki District. Udoppanchola taluk, Pampadumpara and Kattapana village have many Cardamom Plantations Idukki District. Cardamom is cultivated in 1000 hectare. It produces Cardamom 7233 Metric Tons on an average every year. Idukki is aptly called 'Spices District'. This cash crop is the golden beads of our foreign trade. This analysis is related to the cultivation, processing, area and yield of Cardamom along with inputs used in plantation in Idukki district of Kerala.

### Cardamom (Small) Production in India

The selected state - wise Cardamom Production in India is given in the following table. Kerala, Karnataka, Tamil Nadu are the major producers of Cardamom in India. Both Area and production are presented.

Table 3

Year	States (Area in Hectares; Production in metric tons)					
	Kerala		Karnataka		Tamil Nadu	
	Area	Production	Area	Production	Area	Production
2000 -01	30,797	6585	19011	1945	3846	800
2001-02	30837	8380	19542	2115	3658	870
2002-03	30855	8680	20038	2310	3711	930
2003-04	30991	8875	20510	1740	3720	965
2004-05	41378	8616	27094	1879	920	5255
2005-06	41367	9765	27173	1775	5255	1000
2006-07	41395	9944	26915	1896	5127	1080

2007-08	41416	10218	25843	1927	5077	1122
2008-09	41527	10696	25616	2084	4916	1134
2009-10	41586	101210	25377	2236	4859	1140
2010-11	41600	11440	25125	2415	4560	1145
2011-12	39660	11350	5080	1050	1560	850
2012-13	39730	14000	25080	1050	1560	950
2013-14	39730	16000	25080	1000	5160	1000
2014-15	39730	19500	25080	1500	5160	1000
2015-16	39730	19500	25090	1557	5163	1250

Source: Spices Statistics IV Edition year 2004 and www.indianspices.com

Cardamom is a major plantation crop in Kerala having much Economic significance and a peculiar method of marketing channels. Cardamom and the value added products taken from the Idukki District constitute the lion’s share of the spices production and trade. The following table gives the estimation of production and area under cultivation of cardamom.

Table 4 Trend in Production and Area of Cardamomat the State Level

States	Regression Coefficients		R <sup>2</sup>	CGR
	a	b		
Kerala Production	8.8483* (30.38)	0.07032* ( 2.355 )	0.28	7.28
Kerala Area	10.398* (20.406)	0.01746* ( 3.315 )	0.43	1.76
Tamil Nadu Production	7.705* (30.21)	-0.0040 ( -0.166 )	0.10	-0.40
Tamil Nadu Area	8.1021* (28.06)	0.011012 ( 0.3638 )	0.01	1.10
Karnataka Production	7.743* (61.767)	-0.0345* ( -2.667 )	0.33	-3.39
Karnataka Area	9.9969* (45.29)	-0.0009 (-0.0393 )	0.10	-0.08

Among the cardamom producing states in India such as Kerala, Tamil Nadu and Karnataka, Kerala is the leading one in the area of cultivation, production and marketing of cardamom for several decades. There is more scope for enhancing the area and production of cardamom in Idukki District in Kerala. It has the conducive climatic condition, rainfall and cost advantage over other states. As a result the trend in cardamom production in Kerala is appreciable.

Note: 1. \* indicates 5 per cent level of significance  
 2. Figures in brackets represent the t-values

The compound growth rate for production in Kerala was 7.28 in the period 2000-01 to 2015-16. However, the state of Tamil Nadu with regard to the production of cardamom had relatively lesser area compared to Kerala. But at the same time, the level of production of cardamom seems to grow over decades. The compound growth rate for the production of cardamom in the state of Tamil Nadu was -0.40. The spices Board advised the planters to follow the improved and scientific methods of growing Cardamom in order to get a high price for Cardamom in the world Market.

It is unfortunate to view the area under cultivation of cardamom was higher with lesser production of cardamom in the state of Karnataka over Tamil Nadu. The compound growth rate for the production of cardamom in the state of Karnataka was -3.39. This may be due to the climatic condition, rainfall for cardamom plantation were not favourable in Karnataka. Moreover, soil management, integrated pest control, channels of marketing in the cardamom industry in Karnataka are to be improved. The state and central government policy are crucial factor in improving the cardamom production and productivity. It is evident that the trend and growth with regard to the production, area and yield of cardamom in India and at the state level is encouraging. The various facilities available such as finance, integrated pest and soil management should be made more effective for further improvement. The central and state government policies are to be made more supportive in achieving higher growth in the cardamom production.

Further, the marketing channels should be made effective for enhanced economic and social benefits. The data bank on cardamom industry in India is to be analysed for development and the basic needs of the planters and labourers and intermediary agencies should be fulfilled.

Thus, the present analysis clearly reveals that there is a positive trend and growth with regard to the area, production and yield of cardamom in India. Moreover, there is much scope for further development and expansion of the marketing structure to make the business economically viable and as a result, all those connected with the Industry will be benefitted in the future.

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