



Trends in area, production and yield of cumin crop in barmer district of Rajasthan

Pradeep Pagaria¹ and Sonali Sharma²

¹Krishi Vigyan Kendra, Gudamalani, Barmer (Rajasthan) India

²Krishi Vigyan Kendra, Danta, Barmer (Rajasthan) India

(Email : p_pagaria@yahoo.com)

Abstract : Cumin (*Cuminum species*) is the major *Rabi* seed spices crop of India. Botanical name of cumin is *Cuminum cyminum*. In India, it is known as 'Jeera' or 'Zeera' in hindi. It is an important spice used in Indian kitchens for flavoring various food preparations. The flavour of cumin seeds is due to the presence of a volatile oil. In indigenous varieties of cumin, this volatile oil is present upto 2.5–3.5 per cent. Cumin seeds are extensively used in various ayurvedic medicines also especially for the conditions like obesity, stomach pain and dyspesia. Nutritional value of cumin seeds is as follows: 17.7 per cent protein, 23.8 per cent fat, 35.5 per cent carbohydrate and 7.7 per cent minerals. Western district of Rajasthan is the largest cumin growing division covering about 48 per cent of the total production of state. Cumin crop plays a vital role in improving economic status of the farming community of Barmer district. Spice crops are high paying crops in the dry regions. Cumin is a multiple use crop. Besides, its oil value, its seeds are also used as condiments in preparation of pickles and flavoring curries and vegetables. The seed is utilized for human consumption throughout India in cooking and frying. Considering the importance of a cumin group of the crop in the Indian economy, the urgent need for undertaking the basic and strategic research for stabilizing and increasing the production and productivity of cumin in our country.

The seed spices constitute an important group of agricultural commodities and play a significant role in our national economy. India alone produces about 2.5 million tones of spices valued at about 7000 crores but our strong domestic demand absorbs over 90 per cent of the total production. Seed spices are also export oriented commodities and about 8 per cent of total produce are being exported to abroad. 10 per cent domestic production of seed spices is sufficient to meet the 55 per cent demand of world. Seed spices are extensively used as flavoring agents in various food products and in pharmaceutical industry, especially in the preparation of Ayurvedic medicines. Seed spices are also used very

frequently in home made medicines for different ailments. Now-a-days value added products such as the volatile oils and oleoresins obtained from spices are also in large demand in the international market. These volatile oils are also used in flavouring liquors and absorbing unpleasant smell of medicines. Rajasthan and Gujarat states have emerged as "Seed spices Bowl" and together contribute more than

80 per cent of the total seed spices produced in the country.

The crop covered as major seed spices are coriander, cumin, fennel and fenugreek whereas *Ajwain* (Bishop Weed), Dill (Sowa), celery and kalonji (Black cumin) constitute minor group of seed spices. Rajasthan alone contributes about 50 per cent of coriander, 60 per cent of cumin, 51 per cent of fenugreek and 10 per cent of fennel production of the country. Cumin plays a major role in export oriented crop production in barmer district as well as in Rajasthan. These crops has specific agro-climatic requirements for their successful cultivation. A cloud free bright weather with low atmospheric humidity particularly during grain formation period and well drained soils are crucial factors for both production and quality of cumin.

Since, climatic conditions prevailing in the State of Rajasthan meet these requirements, therefore, the State has great potential for development of spices having an average area of 10.04 lac ha. with annual production 13.91 lac tones. In Rajasthan state, the cumin crop is mostly cultivated in Barmer, Jodhpur, Jaisalmer, Jalore, Sirohi, Nagaur, Pali and Sikar districts. Cumin are dried seeds, is used to enhance the

flavour of foods. Like any other agricultural product,



cumin may be contaminated by pathogens, naturally occurring toxins such as mycotoxins, agrochemicals such as fertilizers and pesticides, heavy metals and accidental contaminants. Food safety is of considerable significance in this globalized era and the safety of cumin depends on maintaining good agricultural and hygienic practices along the food chain during primary production, post-harvest, packing, processing, retail and at the point of consumption.

Objective of the study: The important objective of this paper is to analyze the trends in the area, production and yield of cumin in Rajasthan and Barmer district of Rajasthan.

Methodology: Agricultural development is a complex problem. Therefore, reliable collection and sources of data are necessary for decision making and future planning. The study relies on secondary data compiled from various published sources. Data on the area, production and yield were collected from the Agricultural Statistics at a Glance from 2001 to 2015, Directorate of Economics and Statistics (DES), Ministry of Agriculture, GOI, Agriculture Department of Yojana Bhawan, C-scheme, Jaipur. To analyze the changes in the area, production and yield of the cumin crop in Rajasthan and Barmer district of Rajasthan, data were collected for the period from 2007-08 to 2016-17.

Trends in area, production and yield of cumin crop: Production of cumin has increased significantly in the country during the last few years. Trends are the drifts in data over long periods of time.

“Gradual changes in the variable data over a long period and cause apparent increase or decrease in it that may not be detected in a year to year analysis” (Goodwin, 1994).

“Trend analysis uses time variable as a surrogate for capturing the effect of changes in other variables that either cannot be measured or in groups of variables that change so gradually that collecting the information is not worth the effort” (Tomek and Kenneth, 2003).

The trend analysis not only depicts the past behaviour pattern of the dependent variable but also provides forecast about its prospects. The trend analysis of the area, production and yield of the cumin crop for 10 years from 2007-08 to 2016-17. There have shown considerable changes in the area, production and yield of the cumin crop in Barmer district of Rajasthan during this period.

Trends in area of cumin crop: One-year averages of the area for the cumin crop are presented in Table 1. Fig. 1 illustrates the trends in the area of the cumin crop in Rajasthan state and Barmer districts of Rajasthan. In Rajasthan and Barmer district of Rajasthan area under cumin crop increased from 215474 ha and 68076 in 2007-08 to 500142 ha and 138021 ha in 2016-17. During the

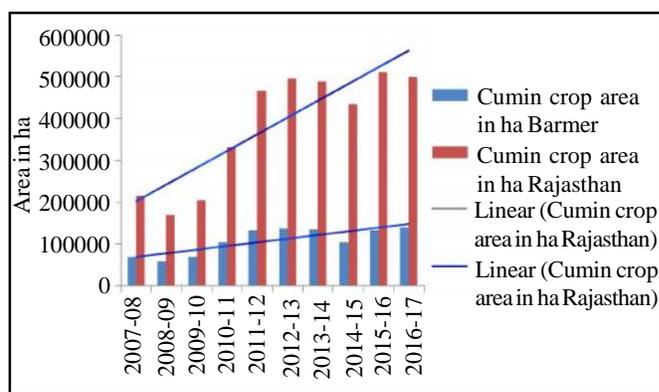


Fig. 1: Trends in area (ha) of cumin crop

Table 1 : Area of cumin in Rajasthan and Barmer (ha)

| Year | Barmer | Rajasthan |
|---------|--------|-----------|
| 2007-08 | 68076 | 215474 |
| 2008-09 | 58172 | 169142 |
| 2009-10 | 68373 | 203855 |
| 2010-11 | 104828 | 330637 |
| 2011-12 | 132524 | 467977 |
| 2012-13 | 137370 | 495691 |
| 2013-14 | 134512 | 488823 |
| 2014-15 | 104523 | 434783 |
| 2015-16 | 132013 | 511078 |
| 2016-17 | 138021 | 500142 |

Source: Agricultural statistics at a Glance 2007-08 to 2016-17

| Table 2: Yield of cumin in Rajasthan and Barmer (kg/ha) | | |
|--|--------|-----------|
| Year | Barmer | Rajasthan |
| 2007-08 | 255 | 308 |
| 2008-09 | 139 | 253 |
| 2009-10 | 221 | 395 |
| 2010-11 | 271 | 348 |
| 2011-12 | 257 | 380 |
| 2012-13 | 245 | 356 |
| 2013-14 | 372 | 478 |
| 2014-15 | 272 | 278 |
| 2015-16 | 241 | 393 |
| 2016-17 | 312 | 414 |

Source: Agricultural statistics at a Glance 2007-08 to 2016-17

year 2008-09 area under the crop declined and reached a level of 169142 and 58174 ha but again increased from 2009 - 2010. Barmer is the most important districts for the Cumin crop regarding the area.

In Fig. 1 red line is the trend line for the cumin crop in Bharatpur region which shows the increasing trends in the area for the mustard crop in Bharatpur region of Rajasthan.

Trends in yield of cumin crop: The yield of the cumin crop in Rajasthan and Barmer has also increased from 308 and 255 kg/ha in 2007-08 to 414 and 312 kg/ha in 2016-17. The productivity may decrease due to deficient rains and a phase of severe hot weather in 2008-09. Farmers were concerned about the negative impact of the hot waves on yield.

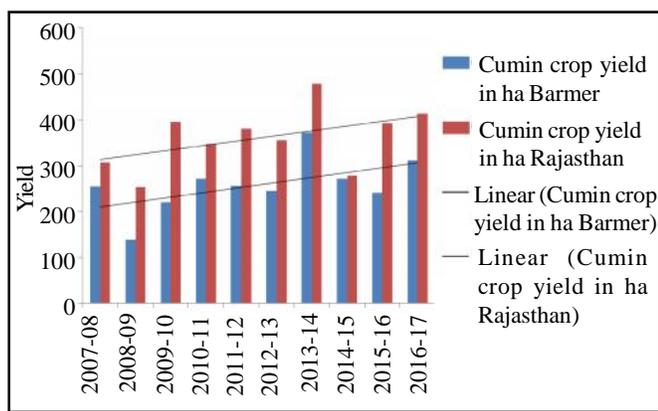


Fig. 2: Trends in yield (kg/ha) of cumin crop

According to Table 1, the area for the cumin crop in Rajasthan is 215474 ha in 2007-08 which has increased and became 500142 ha at 2016-17. In Barmer district,

the area for cumin crop has increased from 68076 ha in 2007-08 to 138021 ha in 2016-17 which is 132.11 per cent in Rajasthan and 102.74 per cent.

As similarly in comparison to Rajasthan and Barmer the yield for the cumin crop is 308 kg/ha and 255 in 2007-08 and 414 and 312 in 2016-17 which is 34.41 per cent and 22.35 per cent increase, respectively.

Conclusion: The present study has discussed the trends of the area and yield for the cumin crop in Rajasthan and Barmer district of Rajasthan. The production of the cumin crop in Rajasthan and Barmer has been witnessing an increasing trend since the 2007-2008 to 2016-17 except 2008-09. Barmer district is having the most extensive sown area and largest producers of the cumin crop. The major avenues for future increases in cumin production are expected to come from enhancement in productivity of this crop. To realize this expectation, a proper mix of technologies and strategies needs to be put in place.

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