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A STUDY OF PROBLEMS OF THE CUMIN FARMING IN BHABHAR TALUKA (BANASAKANTHA) GUJARAT

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Abstract

India is a country of diversity. India has a lot of heterogeneity in terms of topography, climate, land vegetation etc. All these disparities also affect India's economic activity. India is an agricultural country. About two-thirds of the people here depend on subsistence farming. Majority of the country's population derives employment from agriculture. More than 70% of India's population is engaged in agricultural activities and various crops are grown in the country. Such as cereal crops, oil seeds crops, pulses crops and spice crops etc. are found. Cumin is an ancient spice. Domestic use It is in high demand today due to its use in healing, religious and political ceremonies. Gujarat is the largest cumin producing state in India. In Gujarat, cumin is cultivated and produced in Banaskantha district. But at present, as the production of this agriculture is continuously decreasing, it is necessary to conduct research in this field. The present study is to understand the problems faced in cumin cultivation in Bhabhar taluka of Banaskantha district. This study shows that most of the farmers here cultivate cumin

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farming in 50% of their total land. But the production of this crop is decreasing due to use of costly seeds and chemical fertilizers, labour cost, natural calamities, crop diseases etc.

Keyword: Cumin farming, Problems of cumin farming, Cumin in Banaskantha, Gujarat, Production of cumin

Introduction

Indian economy is largely based on agriculture. About two-thirds of the working population is engaged in agriculture. Majority of the country's population derives employment from agriculture. More than 70% of India's population is engaged in agricultural activities and various crops are grown in the country. Such as cereal crops, oil seeds crops, pulses crops and spice crops etc. are found. Cumin is an ancient spice. In early times it was associated with superstition, was used in home remedies, religious and political ceremonies. The history of spices in India goes back thousands of years. India has been the centre of spices since ancient times. India has been trading of Spice since 2000 B.C. Spice crops in India include turmeric, coriander, cumin, fennel, fenugreek, ginger etc. Cumin has an important place in India and India is the first producer of cumin in the world and Gujarat is the first in India. North Gujarat occupies an important place in Gujarat. Also, in Gujarat more cumin is produced in Banaskantha, Surendranagar, Patan, Kutch etc. India's agricultural product is still low compared to other countries in the world. Many factors are responsible for this. Cultivation and production of cumin seeds face various problems, Due to these problems cumin farming yield has also decreased. Various economic and environmental factors are affecting cumin cultivation. In which the following problems are responsible for the cumin crop. Irregularly rainfall, lack of irrigation facilities, soil erosion, defective cultivation of crops, reduction in net cultivated area, disease, pests, birds, storms, frost etc. The farmers of study area are facing some problems for cumin farming. There are lot of Factors like uneven rainfall in the region, climate change, land degradation, overuse of groundwater, increase in salinity, price fluctuations, limited use of modern technologies, traditional farming practices etc. are responsible for this decline.

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This type of study can improve the standard of living and economic condition of farmers. Taking up the same topic will support other researchers for other fields. The study will also be useful for regional planning, NITI Aayog, policy makers, agriculture department at district and state level.

Brief of the study area

Bhabhar is a town and a sub-district of Banaskantha district of Gujarat state. Bhabhar city is located between 24.1 North latitude and 71.40 East longitude. Bhabhar taluka shares the national and international border of Gujarat. Bhabhar is located far away 46 km from Pakistan border and 75 km from the border of Rajasthan. Tharad and Vav talukas are in the north direction of Bhabhar taluka. Deodar and Kankeraj taluks are situated in the eastern direction. Radhanpur taluka of Patan district is in the southern direction. Bhabhar taluka has a population of 1,23,152 people, of which the urban population is 21,894 while the rural population is 1,01,252. Bhabhar taluka has a population density of 273.8 peoples per sq. km 49.03% of the population of the taluka is literate, of which 60.43% males and 36.74% females are literate. There are about 51 villages in Bhabhar taluka.

Methodology

The present study is based on statistical data. Primary and secondary data have been used for this study. 6 villages of Bhabhar taluka were selected using stratified random sampling method to obtain primary data. According to the objectives of our study, 60 questionnaires were prepared, and data were collected door to door in selected villages. Here, secondary data has been used to find out the cultivation status, cumin crop status and farmer demographics in India, Gujarat as well as and Banaskantha. Keeping in view the objectives of the research, various sources of information are relied upon to obtain the required information. The secondary data has been taken from District Panchayat, Taluka Panchayat Extension Officer, Census 2011 Govt of India to get this information.

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Objectives

The following objectives have been set for the present study. Secondary as well as primary statistical data have been used to accomplish these objectives.

1. To know the cultivation and production area of cumin in Bhabhar taluka.

2. To know the problems faced by farmers of Bhabhar taluka in cumin crop.

Brief of the study

In the first phase of this study, the type of cultivation, the meaning of cumin, production in the world, India, as well as in Gujarat are shown. Different names of cumin according to different languages and dialects, different names of cumin in foreign countries, nutritional elements, uses, main varieties, geographical adaptation conditions, crop problems of cumin, literature review are presented. In the second phase an attempt has been made to know the introduction and history of the study area, geographical suitability for agricultural crops. The third phase outlines the objectives of the study, research methodology, primary and secondary data, data collection and sample selection. In the last stage tabulation, analysis and study have been done. In this study, the level of cultivation of cumin in the agricultural area in the study area, suitability of cumin crop, cost incurred in cultivation of cumin, effects on other crops, problems of cumin etc. have been studied and at last suggestions, recommendations and conclusion are presented according to the findings obtained during the research.

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Result

Based on the primary data the data has been interpreted using the following classification, summarization, percentage comparison etc. Which is as follows.

Total Land and Land under Cumin of respondent (in bighas)			
Land (Vigha)	% of Total Land	Land under Cumin	(%)
1 to 15	26.7	1 To 4	36.7
16 To 30	23.3	5 To 8	28.3
31 To 45	25	9 To 12	18.3
46 To 50	25	13 To 16	11.7
> 50	0	>16	5
Source- Field survey 2024			

The above table shows the total land held by the farmers of the study area. Out of them 26.7% respondents have 1 to 15 bighas. And 50% of respondents have 31 to 45 and 46 to 50 bigha cultivated land. While 35% of farmers are cultivating cumin farming in 5 to 8 bigha. As the amount of bigha increases, the cumin farming decreases. And the lowest cultivated area is seen in the current year by more than 16 farmers 5%.

Irrigation facilities		
Irrigation	No of respondent	%
Borewell	28	46.7
well	0	0

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Canal	24	40
Rent	8	13.3
Total	60	100
Source- Field survey 2024		

The above table shows the information of irrigation equipment in the study area. Out of which 46.7% farmers are irrigated by borewells and 40% of farmers are irrigated by canal the least use is found to be tenant farmers at 8%. 40% of farmers are seen using canals. Only 8% of the respondents use rented irrigation facilities.

Seed and fertilizer used for cumin cultivation.

Seed and fertilizer			
Type of seed	% of respondents	Fertilizer	% of respondents
Domestic	21.7	Chemical	61.7
Hybrid	35	Compost	10
Modified	43.3	Both	28.3
total	100		100
Source- Field survey 2024			

The above information shows the type of seed used by the farmers. In which farmers use modified seeds the most. Which is found in 43.3%. While 35% respondents use hybrid seeds, and 21.7% respondents use domestic seeds. Most of the respondents use chemical fertilizers. 61.7% of the farmers in the study area obtain more production from chemical fertilizers. In this

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data 10% farmers state that compost gives more production and 28.3% farmers state that both gives more production.

Frequency of use of chemical fertilizers and pesticide

Frequency of chemical fertilizers and pesticide		
Frequency	chemical fertilizers	pesticide
1	0	0
2	18.3	3.3
3	46.7	11.7
4	20	33.3
> 4	15	51.7
Source- Field survey 2024		

Farmers use chemical fertilizers and pesticides to produce cumin seeds. Majority 60.7% farmers have used chemical fertilizers 3 to 4 times. While 51.7% farmers use the pesticide more than 4 times No farmer uses chemical fertilizers and pesticides at once to get cumin production.

Cost of using chemical fertilizers and pesticide

Chemical fertilizers and pesticide			
Cost of fertilizer	% of respondents	Cost of pesticide	% of respondents
< 3000	35	< 20000	30
3001 To 6000	31.7	20001 To 40000	33.3
6001 To 9000	11.7	40001 To 60000	8.3

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9001 To 12000	11.7	60001 To 80000	13.3
>12000	10	80001 To 100000	3.3
		> 100000	11.7
Source- Field survey 2024			

The above data shows the cost of chemical fertilizers and pesticides in cumin cultivation in the study area. In this data 66.7% farmers spend 3000 to 6000 rupees for chemical fertilizer for cumin crop. While 20% farmers spend more than 9000 rupees for chemical fertilizers. In this data, the highest expenditure on pesticides in cumin cultivation is in the Rs 20,001 to Rs 40,000 range. The proportion of which is 33.3%. While 30% of farmers who spend up to 20000 rupees are seen.

Cumin Crop Yield (Maund)

Per bighas production of Cumin		
production (20kg)	Next year (%)	Current year (%)
1 To 4	66.7	35
5 To 8	21.6	50
9 To 12	10	11.7
>12	1.7	3.3
Source- Field survey 2024		

Farmers were 50% of the maximum production of 5 to 8 maunds (20kg) of cumin seeds in the current year. 66.7% of the farmers are found to have the highest production of cumin in the next year from 1 to 4 maunds. The least farmers in the current year see 1.7% in production

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above 12 maunds and the least farmers in the next year also see more than 12 at 3.3%.Farmers are producing less in the current year than the previous year because drought and disease have reduced cumin production.

Impact of cumin crop to another farming

Other crop		
Crop	No of respondent	%
Castor	37	61.7
Raydo	16	26.7
Wheat	6	10
Parsley	1	1.7
Total	60	100
Source- Field survey 2024		

The above-mentioned information is given by the farmers of the study area about which crop they prefer to grow as a substitute for cumin crop. In which most of the castor crops are planted. As many as 61.67% of the farmers are cultivating the castor crop. After that 26.67% cultivate paddy crop. Then the farmers growing wheat crop are 10%.

Impact of cumin farming on soil fertility and crop rotation		
Yes or No	Soil fertility	Crop rotation
Yes	55	100
No	45	0
Total	100	100
Source- Field survey 2024		

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Here, the above information given shows the impact on soil fertility by cumin crop farmers in the study area. In which most of the 55% farmers have supported the fact that the soil fertility is also affected after planting cumin seeds. And according to remaining 45% farmers, soil fertility is not affected. All the farmers do crop rotation after cumin crop and most of the farmers are planting millet and jar for rotation crops.

Other crop as a substitute for cumin		
Crop	**No of respondent**	**%**
Parsley	2	3.3
Castor	40	66.7
Cotton	2	3.3
Wheat	4	6.7
Raydo	12	20
Source- Field survey 2024		

According to the information shown in the above table, the farmers of Bhabhar taluka have shown the information that other crops will give more production in place of cumin crop. Castor is grown mostly as a substitute for cumin crop. In which 66.7% farmers have planted castor. After that, Raydo's rank is second. Then wheat, Parsley and cotton respectively are planted as substitute crops for cumin.

Total cost of cumin crop		
Cost	No of Respondent	%
< 20000	5	8.3
20001 To 40000	18	30
40001 To 60000	16	26.7

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60001 To 80000	4	6.7
80001 To 100000	6	10
>10000	11	18.3
Source- Field survey 2024		

Interpreting this data, it appears that the highest 30% farmers have spent Rs 20,001 to 40,000 and the lowest 7% farmers have spent Rs 60001 to 80000. The proportion of farmers spending Rs 20,001 to Rs 60,000 is 57%.

Per bighas profit of cumin farming		
Profit	Next year	Current year
0	45	6.7
1 To 5000	30	20
5001 To 10000	8.3	40
10001 To 15000	3.3	13.3
15001 To 20000	3.3	8.3
>20000	10	11.7
Source- Field survey 2024		

The information shown in the above table is about the profit from cumin seeds. In this data, 45% of the farmers have not received profit from cumin crop in the previous year and currently 6.7% of farmers have not received profit. In the current year, most farmers have achieved a profit of 5001 to 10000 per cent. The proportion of which is 40%. The lowest farmers profit is

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zero. Thus, profit is more in the current year than the previous year because the disease came in the cumin crop in the previous year, and it burnt the cumin crop.

Use of produced cumin			
Use	**%**	**Type of selling**	ટકાવારી
Store	26.7	Market	88.3
Sale	73.3	to merchant	10
Other	**0**	Private company	1.7
Source- Field survey 2024			

Here, the above given information shows what the farmers of Bhabhar taluka do after the cumin crop is produced. In this data 73% farmers sell the cumin crop in immediate market. Apart from this, the farmers store cumin crops. In this data most of the farmers sell the cumin crop in the market which is 88.3%.

Price of per 20 kg		
Market price	No of respondent	%
3500 To 4000	11	18.3
4001 To 4500	15	25
4501 To 5000	28	46.7
5001 To 5500	6	10
Source- Field survey 2024		

From this information it is known that most of the respondents fetched a market price of 4501 to 5000 rupees per 20 kg. 46.7% of which are farmers. After that farmers are 25% getting

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market price of 4001 to 4500 per 20 kg. followed by 18.3% of the farmers who get market price of 3500 to 4000 per 20 kg and the lowest farmers who get market price of 5001 to 5500 per 20 kg are 10%. Most of the farmers have got low market price.

Diseases in cumin farming and Natural calamity			
Diseases	%	Natural calamity	%
Charami	26.7	cyclone	3.3
Sukaro	15	Unseasonal rain	63.3
Bhooki chharo	1.7	frost	56.7
Charmi and Bhooki chharo	16.7	Pests	83.3
Sukaro and Bhooki chharo	13.3	Bird	1.7
No	26.7	Other	0
Source- Field survey 2024			

Here as many as 26.7% farmers suffer from Charmi diseases. Along with this, Sukaro and Bhuki Chharo come second. While 26.7% farmers are not affected by any disease. Some natural calamities also influence the cultivation of this crop. In which maximum 83.3% farmers have been affected by pests. After that 63.3% farmers are affected by Mavtha. Then 56.7% are affected by snowfall and 1.7% by birds.

Discussion and recommendation

Most of the farmers in the study area have more than 31 bigha of cultivable land. From this total land, 1 to 16 bighas of land is cultivated with cumin. That means cumin is cultivated in half of the total agricultural land. Irrigation facilities in this area are bore wells and canals. More than 75% farmers use hybrid and modified seeds instead of domestic seeds for cumin cultivation. Which increases the cost of farmers. In terms of fertilizer use, 61.7% farmers

achieve higher production from chemical fertilizers. In this data only 10% of the farmers get more production from fertilizers.

Chemical fertilizers and pesticides are frequently used to obtain cumin production. One cumin crop requires 3 to 4 applications of chemical fertilizers and more than 4 applications of pesticides.

In the present study this data shows that 66.7% farmers spend 3000 to 6000 rupees for chemical fertilizer for cumin crop. While 20% farmers spend more than 9000 rupees on chemical fertilizers. In this data, the highest expenditure on pesticides in cumin cultivation is Rs. 20,001 to Rs. 40,000 in the range. The proportion of which is 33.3%. While 30% farmers are seen spending up to Rs.20000.

The average production of cumin crops this year is 6.2 maunds. In the current year only 35% farmers have produced less than the average production i.e., 1 to 4 maunds less. While most of the farmers have got above average production. Examining the impact of cumin crop on other crops, it was found that castor is grown by 61.2%, Raydo by 20% of the respondents and the production of these crops is also higher than other crops.

Cumin crop also greatly affects soil fertility. 55% of the respondents supported it and all the farmers talked about crop rotation after taking this crop.

Since cumin cultivation is done through canals and borewells and the use of chemical fertilizers and pesticides is also high, the farmers must spend a lot of money. A maximum of 62% farmers have spent more than Rs 40,000. And at least 8.3% farmers have spent Rs 20,000.

Farmers of Bhabhar taluka have also seen the impact of natural calamity in cumin cultivation. Among them, disease pests are the most affected which affects 83.3% of farmers' crops, so farmers must use more pesticides and fertilizers in cumin crops. 63% farmers are affected by drought. Along with this, the problem of several diseases has also been reported in cumin cultivation here.

My primary survey on this topic required surveying the farmer. When I went to survey most of the farmers asked who are you? why did you come here What do we get? He was asking such

and such questions. There is fear of giving some kind of correct information. There was a reluctance to be photographed in the field. After explaining in many ways collected the correct information and said that I am a resident of here. I have collected the correct information explaining the identity of the village and as part of the research I am presenting my research paper. When natural factors affect the cumin crop, the government should provide financial compensation to the affected farmers.

Farmers of this area traditionally cultivate cumin; such farmers should be informed about technological tools and subsidies should be given on such tools. Government should give support price of cumin to the farmers.

Conclusion:

The present study deals with the problem of cumin cultivation in Bhabhar taluka of Banaskantha. Cumin is cultivated in half of the farmers' land here. Due to costly irrigation schemes like borewells and canals, excessive use of chemical fertilizers and pesticides, imported farm labour, crop diseases, natural calamities, etc., the production of this crop is declining. Keeping in view the demand of this crop and the favorable geographical situation here, there is a need to support and research the local bodies, government bodies.

Acceptance:

First of all, we express our gratitude to our Guide for this study. No research work can be done without guidance, advice, suggestion. Farmers of the study area for this research who provided necessary information regarding this study. Also, the personnel officers concerned in the field who have given us secondary information. I am very thankful to all of them.

References

D. R. (2023). Farmers' Purchasing Behaviour of Insecticides in Cumin and problem faced by . *Asian Journal of Agricultural Extension, Economics & Sociology*, 462-474.

Dave, D. M. (2020). *Regional and economic geography of Gujarat.* Ahmedabad: Gujarat university granth nirman board.

Gangadevi. (2022). *Production technology of cumin.* Ajmer: Director ICAR National research on seed spices .

Gautam, D. A. (2010). *Element of economic geography.* Allahabad: Sharada pustak bhavan.

Gautam, D. A. (2013). *Word Geography.* Allahabad: Sharda pustak bhavan.

Kumar, M. (2021). Cumin cultivation: Present status and future prospects. *The Pharma Innovation*, 1121-1131.

Mamoriya, D. C. (2015). *Advanced geography of India.* Agra: Sahitya Bhavan.

R.S.Meena. (2010). *Advance production technology of cumin.* Ajmer: Director ICAR National research on seed speces.

V.K.Gondaliya. (2019). *Growth and prospects of export of major seed spices from India.* Anand: Anand Agricultural University.

Yogeshkumar. (2024). Market Potential and Farmers' Buying Behaviour towards Cumin Seeds in Rajkot District, Gujarat, India. *Journal of scientific research and report*, 420-427.