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# Relationship between profile of cumin growers and their knowledge towards climate smart agriculture

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**Abstract**

Climate is improving the understanding and characterization of extreme weather. Climate Smart Agriculture (CSA) is an approach for transforming and reorienting agricultural development under the new realities of climate change Climate is the average weather in a given area over a longer period of time. A climate description includes information suchas average temperaturein different seasons, rainfall and sunshine. India has a long standing tradition of spice cultivation and holds the distinction of being the largest producer, exporter, and consumer of spices globally. The present study was confined to "Ex-post-facto" research design. The literal meaning of ex-post-facto is "from what is done afterwards". The multistage sampling technique was used to select a representative sample of respondents for present investigation. The study was undertaken in Banaskantha, Patan and Kutch districts which comes under North-West Agro-Climatic zone as well as in the jurisdiction of Sardarkrushinagar Dantiwada Agricultural University. From each selected district two talukas were purposively selected for study based on highest area and production of cumin. Hence, total six talukas were selected. From each selected taluka, five villages and from each village ten cumin growers were selected randomly. Thus, total 300 cumin growers were selected for the study. There were 10 independent variable selected for this study. There were education, scientific orientation, risk orientation and innovativeness had exerted positive and highly significant relationship with knowledge towards climate smart agriculture, while farming experience, mass media exposure and extension contact had positive and significant relationship with knowledge towards climate smart agriculture. Whereas, age, land holding and annual income exerted non-significant relationship with knowledge towards climate smart agriculture.

**Keywords:** Climate, cumin, knowledge, relationship

## 1. Introduction

Climate is the average weather in a given area over a longer period of time. Aclimate description includes information suchas average temperature in different seasons, rainfall and sunshine. Understanding the global climate and its changes is necessary before taking appropriate actions to combat climate change. Climate Smart Agriculture (CSA) is an approach for transforming and reorienting agricultural development under the new realities of climate change. India is the largest producer and consumer of cumin contributing 70.00 per cent to the global production. Cumin is important cash crop, but its production is highly unpredictable and fluctuates drastically from year to year. The instability in cumin production leads to significant variations in the income of farmers who grow it, causing financial uncertainty from one year to the next. Climate Smart Agriculture (CSA) offers an integrated approach that seeks to improve agricultural productivity while enhancing resilience to climate change and minimizing greenhouse gas emissions. CSA emphasizes sustainable practices such as rainwater harvesting, soil health management, and the mitigation of climate-resilient crop varieties.

## 2. Objectives

1. To study the profile of cumin growers
2. To assess the relationship of independent variable with knowledge of the cumin growers towards climate smart agriculture

**3. Methodology:** The present study was conducted in Banaskantha, Patan, and Kutch districts of North-West Agro-Climatic Zone of Gujarat which were leading cumin producing districts and comes under Sardarkrushinagar Dantiwada Agricultural University jurisdiction. The present study was confined to "*ex-post-facto*" research design. For research study, from each selected district two talukas were purposively selected for the study based on highest area and production of cumin. Thus, total six talukas *viz.,* Vav and Kankrej from Banaskantha, Rapar and Bhachau from Kutch and Santalpur and Sami from Patan were selected.From each selected taluka five cumin growing villages were selected randomly. Thus, total thirty villages were selected for the study.From each of selected villages ten cumin growers were selected randomly. Thus, total 300 cumin growers were selected for the study.

## 4. Results and Discussion

### 4.1 Profile of Cumin Growers

On the basis of extensive review of literature and discussions with the experts, some important personal, economic, social and psychological characters have been selected in the present study. The data of these characteristics were analyzed and presented in the table. Table 1 depicted that 65.66 percent of the respondents belonged to middle age categories. The probable reason might be that the parental occupation must have been shouldered by middle age group farmers. 70.00 percent respondents had primary to secondary level of education. It is obvious from the results that the respondents as experienced / understood the significance of education as the means for improvement of overall living standard. Majority of cumin growers 43.33 percent had medium farming experience. Majority of cumin growers 32.67 percent had semi medium size of land holding. The 29.67 percent of cumin growers belonged to medium annual income. Majority of cumin growers 49.67 percent had medium mass media exposure. Majority of respondents 60.67 percent had medium extension contact and more than half of respondents 71.00 percent had medium scientific orientation. Majority of cumin growers (69.67%) had medium risk orientation and 47.00 percent had medium Innovativeness

**Table 1:** Distribution of cumin growers according to their personal profile (n = 300)

| Personal profile | Category | No. | Percent |
|---|---|---|---|
| Age | Young | 53 | 17.67 |
| | Middle | 197 | 65.66 |
| | Old | 50 | 16.67 |
| Education | Illiterate | 8 | 02.66 |
| | Functionally literate | 21 | 07.00 |
| | Primary school | 108 | 36.00 |
| | Secondary school | 102 | 34.00 |
| | Higher secondary school | 35 | 11.67 |
| | Collage education | 26 | 08.67 |
| Farming experience | Low | 61 | 20.34 |
| | Medium | 130 | 43.33 |
| | High | 109 | 36.33 |
| Size of land holding | Marginal | 44 | 14.67 |
| | Small | 86 | 28.67 |
| | Semi medium | 98 | 32.67 |
| | Medium | 55 | 18.33 |
| | Big | 17 | 05.66 |
| Annual income | Very low | 63 | 21.00 |
| | Low | 96 | 32.00 |
| | Medium | 89 | 29.67 |
| | High | 38 | 12.67 |
| | Very high | 14 | 04.66 |
| Mass media exposure | Low | 46 | 15.33 |
| | Medium | 149 | 49.67 |
| | High | 105 | 35.00 |
| Extension Contact | Low | 36 | 12.00 |
| | Medium | 122 | 60.67 |
| | High | 82 | 27.33 |
| Scientific orientation | Low | 39 | 13.00 |
| | Medium | 213 | 71.00 |
| | High | 48 | 16.00 |
| Risk orientation | Low | 58 | 19.33 |
| | Medium | 209 | 69.67 |
| | High | 33 | 11.00 |
| Innovativeness | Low | 48 | 16.00 |
| | Medium | 141 | 47.00 |
| | High | 111 | 37.00 |

### 4.2 Knowledge of the cumin growers towards climate smart agriculture

Knowledge is a decision to make full use of an innovation as the best course of action. Table 2 indicates that 59.00 percent of the cumin growers had high level of knowledge about climate smart agriculture followed by 27.67 percent of them had high and 13.33 percent had low level of knowledge about climate smart agriculture.

**Table 2:** Distribution of the cumin growers according to their knowledge towards climate smart agriculture (n=300)

| Sr. No. | Knowledge | Frequency | Per cent |
|---|---|---|---|
| 1 | Low | 40 | 13.33 |
| 2 | Medium | 177 | 59.00 |
| 3 | High | 83 | 27.67 |
| Total | | 300 | 100.00 |

**4.3 Relationship between the profile of cumin growers and their knowledge towards climate smart agriculture.**
Relationship between cumin growers and their knowledge towards climate smart agriculture and selected independent variables *viz.*, age, education, farming experience, land holding, annual income, mass media exposure, extension contact, scientific orientation, risk orientation and innovativeness was worked out with the help of correlation coefficient (*r*). The data are presented in table 3.

**Table 3:** Relationship between the profile of cumin growers and their knowledge towards climate smart agriculture (n = 300)

| Sr. No. | Characteristics | Coefficient of correlation (r) |
|---|---|---|
| 1 | Age | $0.085^{NS}$ |
| 2 | Education | 0.145** |
| 3 | Farming experience | 0.125* |
| 4 | Land holding | $0.067^{NS}$ |
| 5 | Annual income | $0.074^{NS}$ |
| 6 | Mass media exposure | 0.107* |
| 7 | Extension contact | 0.115* |
| 8 | Scientific orientation | 0.205** |
| 9 | Risk orientation | 0.206** |
| 10 | Innovativeness | 0.200** |

* Significant at 0.05 level of probability. ** Significant at 0.01 level of probability.

## 5. Conclusion
Among the personal, socio-economic, communicational and psychological variables *viz.*, education, scientific orientation, risk orientation and innovativeness had exerted positive and highly significant relationship with knowledge towards climate smart agriculture, while farming experience, mass media exposureand extension contacthad positive and significant relationship with knowledge towards climate smart agriculture. Whereas, age, land holding and annual income exerted non-significant relationship with knowledge towards climate smart agriculture.

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