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A STUDY ON SOCIO-ECONOMIC STATUS OF COLE CROPS VEGETABLE GROWERS IN BIJNOR DISTRICT OF WESTERN UTTAR PRADESH

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Abstract

Total area under vegetables cultivation in India is 10259 thousand hectares with 184394 thousand metric tons production in 2017-18. Out of total area of land under vegetables, cauliflower and cabbage occupies 453 and 399 thousand hectares area with 8668 and 9037 thousand metric tons production in 2017- 18 ,respectively. In the Bijnor district of the Uttar Pradesh, cole crops-grown 5.41 thousand hectares area. Cole crops grown in diverse agro climatic conditions faces differential biotic and abiotic stress limiting the production and productivity of cole crops that in influenced the economic condition of cole crops Growers. The purpose of the present study was to examine the socio-economic status of cole crops growers in Bijnor district of Western Uttar Pradesh. The result of the analysis shows that 40.00 percent of respondent fall within the age range of 46 to 60 years, other backward caste (55.45 percent), education level-literate (84.09 percent), family type-joint family (73.18 percent), family member-4 to 6 members (65.00), land holding size-less than 1 hectare (52.00 percent), irrigation facilities-own (80.00 percent), 73.64 percent of respondents were engaged in farming activities only and 26.36 percent respondent were doing farming with business. 40.00 percent respondent got more than Rs 300000.00 annual income, 40.45 percent respondent have their own pumping set and electric motor and 55.45 percent respondent has not participated in any technical programme.

Keywords: Socio-economic status; cole crops growers; respondent.

The word **"cole"** was derived from the word **"Caules"** means stem. Cole vegetables are a group of highly differentiated plants originated from a single wild ancestor species Brassica oleracea var. sylvestris, commonly known as wild cliff cabbage known as **"Cole worts"** or wild cabbage. They belongs to family Cruciferae and genus Brassica. Cole crops are the most popular vegetables grown in India during winter season. The most important six varieties of Brassica species / crops in cole group grown in India are cauliflower (***Brassica oleracea var. botrytis***), cabbage. (***Brassica oleracea var. capitata***), knol-khol (***Brassica oleracea var. gongiloides or caulorapa***), burssel sprout (***Brassica oleracea var. gemmifera***), sprouting broccoli (***Brassica oleracea var. italica***) and kale (***Brassica oleracea var. acephala***). They are rich sources of vitamin C. Cabbage juice is used as a remedy against poisonous monsoon. Some extract of these cole crops are used to cover wounds and ulcers. They are eaten raw as well as cooked. They have protective property against bowel cancer. All brassica species contain glucosinolates, which is crushed leaves is broken down by the enzyme myrosinge giving a bitter taste.

Broccoli is also gaining popularity among Indians due to its high medicinal value. A large variety of cole crops are grown in India, of which cauliflower (***Brassica oleracea var. botrytis***), cabbage. (***Brassica oleracea var. capitata***) and knol-khol (***Brassica oleracea var. gongiloides or caulorapa***) are the major ones. Apart from these vegetable like, burssel sprout (***Brassica oleracea var. gemmifera***), sprouting broccoli (***Brassica oleracea var. italica***) and kale (***Brassica oleracea var. acephala***) are also grown in sizeable areas. Although cole vegetable is grown throughout of the country, the major growing state are **Uttar Pradesh Plains, Haryana, Rajasthan, Orissa, Uttranchal** (Nainital, Pithaurgarh and Dehradun), **Himachal Pradesh** (Shimla, Kullu and Sirmour), Bihar (Santhal, Pargana, Purina, Katihar, Sitamarhi, Samastipur, Saharsa, Dhanbad, Patna, Nalanda, West and East Champaran, Muzzafarpur, Vaishali, Bhagalpur, Darbangha and Madhubani), **Gujarat** (Mehsana, Khera, Ahmedabad and Baroda), **Maharashtra** (Nasik, Nagpur and Kolhapur) and (Hassan, Bangalore (Rural and Urban), Kolar and Mysore). Apart from India, the other major producers of cauliflower in the world are China, France,Italy, UK, USA, Spain, Poland, Germany and Pakistan. India is the largest producer of cauliflower in the world. Total area under vegetables cultivation in India is 10259 thousand hectares with 184394 thousand metric tons production in 2017-18.. Out of total area of land under vegetables, cauliflower and cabbage occupies 453 and 399 thousand hectares area with 8668 and 9037 thousand metric tons production in 2017- 18 ,respectively. In the Bijnor district of the Uttar Pradesh, cole crops-grown 5.41 thousand hectares area [1]. Socio-economic condition particularly age, education, income, land holding size and extension contact greatly influenced the knowledge level of the farmers. The farmers should be sufficiently exposed to the technological developments so that they will develop confidence as well as competency and adopt improved practices resulting in area expansion, better production and productivity. Bijnor district has much potential to grow cole vegetables farming because district has diverse agro climatic condition so it is essential to find out the socio-economic status of cole vegetable growers for planning of policies and extension strategies in the distinct.

Materials and Methods

This study was conducted in Bijnor district of Western Uttar Pradesh. Bijnor district comprise of 11 blocks. Two villages from each block were selected randomly on the basis of cole crops vegetables availability. Thus the total number of 22 villages was selected for the investigation and 10 cole crops vegetables growers were selected from all selected villages. Thus the total sample size was of 220 respondents. The responses of cole crops vegetables growers were collected through comprehensive schedule developed by researcher later the responses were tabulated. The data were analysed and find out the percentage and frequency [2,3].

Percentage

The frequency of a particular cell was divided by the total number of respondents in that particular category and multiplied by hundred.

Percentage (%)

$$\frac{\text{Actual no. of respondent}}{\text{Respondents or Score}} \quad 100$$

Mean

It was calculated to the average value of particular score. The formula is given below

$$\text{Mean Score} \frac{\text{Total scores on particular item}}{\text{No of Respondents}}$$

Results and Discussion

Socio-economic Status of the Cole Crops Growers

Age

Among the socio-economic status characteristics, age is one of the most important character in understanding their view about the particular problems, by a large age indicates extent of maturity in particular individuals. In that sense age becomes more important to examine the response.

Table 1 indicates that majority of the cole crops growers belonging to the middle age (40.00%) followed by lower middle age (27.73%); young age

(22.27%) and old age (10.00%) cole crops growers respectively. These same trends were also reported by many researchers [4,5,6,7].

Table 1. Distribution of cole crops growers according to their age

SN	Categories (Years)	Cole crops growers	
		Frequency	Percentage
1	Young (15-30)	49	22.27
2	Lower middle (31-45)	61	27.73
3	Middle (46-60)	88	40.00
4	Old age (>61)	22	10.00
	Total	**220**	**100**

Caste

Table 2 focuses that a maximum number of the cole crops growers belonging to general caste category. Out of total sample size highest percentage of cole crops growers (55.45) belonged to other backward caste followed by 35.91 and 08.64 percent belongs to general caste category and scheduled caste and schedule tribes caste categories respectively. The data revealed that the other backward caste person was having dominance in all type of horticultural activities of the village because of being more involve in vegetable production. The lower caste category person did not come together on single platform. This was also observed as one of the main reason due to which the rate of participation of all categories person is lower in training, meeting and development activities [8,9]. Thus, it is concluded that the majority of cole crops growers (55.45) percent were belong to other backward caste.

Table 2. Distribution of cole crops growers according to their caste

SN	Categories	Cole crops growers	
		Frequency	Percentage
1	General caste	79	35.91
2	Other backward caste	122	55.45
3	Scheduled caste/ Scheduled Tribes	19	08.64
	Total	**220**	**100**

Education

It is well known fact that education is one of the most important characteristics that might affect the person's attitudes and the way of looking and understanding any particular social phenomena. In a way, the response of an individual is likely to be determined by his educational status and therefore it becomes imperative to know the educational background of the cole crops growers. Hence the variable 'Educational level' was investigated by the researcher and the data pertaining to education is presented in a given in Table 3.

Table 3 revealed that 84.09 percent majority of the cole crops growers was literate as against illiterate person (15.91 percent). Further, the educational standard of literate cole crops grove in descending order was found as 28.11 percent, 24.86 percent, 21.08 percent, 15.14 percent, 6.49 percent, 3.24 percent and 1.08 percent were of High school, Intermediate, Primary school, Junior High school, Can read and write, Graduate and Postgraduate and about respectively [9,10].

Table 3. Distribution of cole crops growers according to their education

SN	Categories	Cole crops growers	
		Frequency	Percentage
1	Illiterate	35	15.91
2	Literate	185	84.09
(a)	Can read and write	12	6.49
(b)	Primary School	39	21.08
(c)	Junior High School	28	15.14
(d)	High School	52	28.11
(e)	Intermediate	46	24.86
(f)	Graduate	6	3.24
(g)	Post Graduate	2	1.08
	Total	**220**	**100**

Family Type

The type of family in which a person live and gets socialized has immense important in deciding his or her values, beliefs and behavior patterns which are likely to affects his or her attitudes towards a particular problem. Hence, the family type plays its own role in giving the response of an individual and therefore it was thought important to understand the family type of the cole crops growers.

Table 4 indicate that 73.18 percent cole crops growers were associated with joint family system while 26.82 percent cole crops growers were belonged to single family system hence the joint family system was dominated in the study area [5,10].

Table 4. Distribution of cole crops growers according to their family type

SN	Categories	Cole crops growers	
		Frequency	Percentage
1	Single Family	59	26.82
2	Joint Family	161	73.18
	Total	**220**	**100**

Family Size

Family size is also an important factor that influences the dominancy in the society. These influencers are shown in the Table 5.

Table 5. Distribution of cole crops growers according to their family size

SN	Categories	Cole crops growers	
		Frequency	Percentage
1	Up to 3 member	64	29.09
2	4 to 6 member	143	65.00
3	7 and above	13	5.91
	Total	**220**	**100**

It is evident from the Table 5 that the highest percentage (65.00) of the cole crops growers was belongs to the family who had 4 to 6 member in their family. 29.09 percent cole crops grower's family belongs to that family who had three members and 5.91 percent cole crops growers family belongs to that family who had more than 7 family members. It may be concluded that still there is dominancy of joint family system with 4 to 6 member in the study area. Similarly to reported that the most of mango growers were lived in joint family system and had 4 to 6 family members.

Size of Land Holding

Size of land holding is also more important factor in socio- economic status of the farmer's family. Land holding in the study areas of cole crops growers is given in Table 6.

Table 6. Distribution of cole crops growers according to their size of land holding

SN	Categories	Cole crops growers	
		Frequency	Percentage
1	Marginal (<1 ha)	115	52.27
2	Small (1-2 ha)	68	30.91
3	Medium (2-5 ha)	31	14.09
4	Large (>5 ha)	6	2.73
	Total	**220**	**100**

Table 6 indicates that the maximum cole crops growers (52.27) percent were found in the land holding category of marginal cole crops growers (less than 1.0 ha.) followed by 30.91 percent cole crops growers have small land holding category (1 to 2 ha.), 14.09 percent cole crops growers have medium land holding categories (2 to 5 ha.), and 2.73 percent cole crops growers who had more than 5 hectare land. Some researcher also found the same trend that large land holding families grows cole crops [3,9,10].

Irrigation Facility

It is clear from the Table 7 that the 80.00% farmers have their owned irrigation sources (diesel engine and tube well). Along with the 13.18 percent cole crops growers use to hire irrigation sources like government and private tube well. Only 6.82 percent cole crops growers use to natural irrigation sources like canal, river and lakes. The result showed that the most of the 13.18 percent cole crops growers use to hire irrigation sources like government and private tube well. Only 6.82 percent cole crops growers use to natural irrigation sources like canal, river and lakes. The result showed that the most of the cole crops growers were not dependent on natural sources and they did not hired government or private tube well. It showed that the strong economic condition of the cole crops growers of the study area.

Table 7. Distribution of cole crops growers according to their irrigation facility

SN	Categories	Cole crops growers	
		Frequency	Percentage
1	Own (Diesel Engine, Tube well)	176	80.00
2	Hired (Govt. Tube well & Private Tube well)	29	13.18
3	Natural (Canal, River, Lake)	15	6.82
	Total	**220**	**100**

Cole Crops Growers Occupation

Person's occupations have a bearing on his or her personality and so also the ways of looking at the problem before him. The quality of life is also determined by an individual's occupations and the income he drives from it. Occupation of an individual also socialized him or her in a particular fashion which in turn reflects his or her pattern of behaviors and his or her extent understanding of particular phenomena. In other worlds the person response to a problem is possible determined by

the type of occupations who is engaged in and hence venerable occupations was investigated by the researcher and data pertaining to occupation is presented in given in Table 8.

Table 8. Distribution of cole crops growers according to their occupation

SN	Categories	Cole crops growers			
		Occupation	Subsidiary occupation		
		Frequency	Percentage	Frequency	Percentage
1	Agriculture Labour	00	00	00	00
2	Caste based occupation	15	6.82	14	6.36
3	Service	21	9.55	00	00
4	Agriculture (Cole Crops Farming & Agriculture)	162	73.64	129	58.64
5	Business	12	5.45	58	26.36
6	Agro-based Enterprises	10	4.55	19	8.64
	Total	**220**	**100**	**220**	**100**

It is clear from the about table that the cole crops growers was the main occupation 73.64 percent followed by service 9.55 percent, caste based occupations 6.82 percent, business 5.45 percent and agro-based enterprises 4.55 percent, respectively. In case of subsidiary occupations, the maximum 58.64 percent of the cole crops growers belong to agriculture cole crops family category followed by business cole crops family 26.36 percent, agro based enterprises 8.64 percent and caste based occupations 6.36 percent, respectively and anyone was responses were given by cole crops growers as a agriculture labour and service. Similar finding were also reported by who reported that the main occupation of cole crops growers was cole crops farming, with subsidiary occupations including sugar cane and dairy farming and rendering of other services [8,9,10,11].

Annual Income

Income of a person plays important role in shaping the economic conditions of an individual which in turn is likely to have a bearing on the response about the problem posted to him. The researcher, therefore in this study attempted to investigate the income as variable and the data related to income of the cole crops growers is presented in Table 9.

Table 9. Distribution of cole crops growers according to their annual income

SN	Categories	Cole crops growers	
		Frequency	Percentage
1	Up to Rs.1,00,000	36	16.36
2	Rs. 1,00,001 to 2,00,000	41	18.64
3	Rs. 2,00,001 to 3,00,000	55	25.00
4	Above Rs. 3,00,001	88	40.00
	Total	**220**	**100**

The annual income of the cole crops Growers were showed in Table 9 that 40.00 percent cole crops Growers fall in the income group of rupees above 3,00,000/ followed by 25.00 percent farmers whose income is between rupees 200000 to 300000 lac, 18.64 percent farmers whose income is between 100000 to 200000 and 16.36 percent cole crops growers whose income is upto 100000, respectively. The above finding of the table showed that about 40.00 percent of cole crops growers fall in the income group of rupees above 300000/ lac.

Farm Power

Farm power machinery is also a character which indicates the socio-economic status of the cole crops growers. Farm machinery status of the cole crops growers is given in Table 10

Table 10. Distribution of cole crops growers according to their farm power

SN	Categories	Cole crops growers	
		Frequency	Percentage
1	Jhhota buggi	40	18.18
2	Tractor with all required impalements	89	40.45
3	Pumping set/ Eclectic Motors	73	33.18
4	Power sprayer	18	8.18
	Total	220	100

The Table 10 indicates that the 40.45 percent cole crops growers were found having their tractor with all required implements followed by 33.18 percent,18.18 percent and 8.18 percent there are pumping set/electric motors, jhhota buggi and power sprayer, respectively. The results showed that the cole crops growers were good in their materials possession and it is a good to know that the crops growers were improving themselves as it is good for the cultivation of cole crops and improve the production technologies.

Social Participation

Social participation of a person in various events and gathering shows his degree of involvement in his social and cultural life. This is likely to have an impact on this views and attitudes about the particular problem. Keeping this in mind variable social participations was considered for the investigation and data of the same is presented in a cursory glance over the data depicted in the Table 11.

Table 11. Distribution of cole crops growers according to their social participation

SN	Categories	Cole crops growers	
		Frequency	Percentage
1	No participation	122	55.45
2	Participation in one organization	76	34.55
3	Participation in two organization	12	5.45
4	Participation in more than two organization	10	4.55
	Total	**220**	**100**

The Table 11 indicates that out of 220 cole crops growers, 55.45 percent cole crops growers showed no participation in any organization followed by 34.55 percent cole crops growers who were participated in one organization, 5.45 percent cole crops growers who were participated in two organizations and remaining 4.55 percent cole crops growers who were participated in more than two organization, respectively and no one was found as office bearer member of any organization.

Conclusion

Based on the finding of this study, it could be concluded that cole crops production in the study area is profitable but there are many constraints like advantage of other agricultural crops over the cole crops because sugarcane is dominant crop in Western Uttar Pradesh and it is hardy crop and give more return per unit area in any situations. The farm specific techniques and training are not upto the mark so this can encourage farmers to remain in the cole crops farming that means none of the farmers achieved their maximum efficiency level to grow cole crops. Bijnor distinct has much potential to grow cole crops farming because Bijnor has diverse agro climate. There result can call for policies aimed at encouraging new cole crops growers especially the youths who are agile and stronger to grow cole crops and the experienced ones to remain in cole crops farming.

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