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Socio Economic Profile of the Sugarcane Growers in Sitapur District (U.P.), India

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A B S T R A C T

This study was conducted in Khairabad block of Sitapur district (U.P.) by conducting personal interview with 100 respondents which were selected through random sampling technique from 5 sample villages on the basis of majority of sugarcane grower. There were the majority of the respondents 60% were found in middle categories (38-59) of age group, like this 68 % literate, 99% married, 67% other backward caste, 100% Hindu religion, 54% nuclear family, 67% medium family size (5-11 members), 47% marginal land holding size (less than 1 ha.), 78% agriculture main & 67% subsidiary occupation, 80% annual income (45001-172000), 41% mixed houses, , 71% overall material possession (41-84 equipment).

Introduction

Sugarcane is an important cash crop grown all over the world. It belongs to the grass family poaceae. Sugarcane is the world largest crop. In 2012 FAO estimate it was cultivated on about 26.00 million hectare land, in more than 90 countries, with a worldwide harvest 1.83 billion tonnes. India is the largest producer of sugarcane in the world. The next five major producers in amount production are Brazil, China, Thailand, Pakistan and Mexico.

Sugarcane is a tropical, perennial grass that forms lateral shoots at the base to produce multiple stems, typically three to four meter height and about five centimeters diameter. Sugarcane is a cash crop, but it is also used as livestock fodder.

Sugarcane is moderately non-sunny weather loving plant is grown in two distinct climate regions; the tropical and subtropical. The total area under sugarcane in India is 5.06 million hectare with 356.56 million tonnes production in 2014-15, out which 70% lies in the subtropical region and the remaining 30% in the tropical belt.

Major sugarcane growing states in India are U.P, Maharashtra, Karnataka, Tamilnadu, Andhra Pradesh and Punjab etc., but northern India having subtropical climate. The important sugarcane growing states of the northern region are U.P, Haryana, Punjab, Bihar and Jharkhand. Uttar Pradesh is the highest sugarcane producing State in sub-

tropical zone having area about 22.28 Lakh hectare with the production of 134.69 Million tonnes whereas Haryana has highest productivity of sugarcane in sub-tropical zone. In Sitapur district during 2013-14 the sugarcane had an area 1.44 Lakh hectare with the production of 9.32 million tonnes and productivity 64.68 tonnes/ hectare. To sustain a huge agro-industry a wide research infra-structure has been created in country. At present the country has three national institute and 53 state research stations and four sugar factory sponsored research stations. At the national level all research activities are coordinated by an All India Coordinated Research Project which operates under the control of Indian Council of Agricultural Research (ICAR).

Integrated Pest Management (IPM) is a broad ecological approach for pest management which employs all available skills, technique and methods include applications of chemical pesticide as a last resort in a harmonious and compatible manner with a view to suppress pest population below the economic injury level, on regular crop pest surveillance and monitoring. The IPM is a dynamic approach and process varies from region to region, time to time, crop to crop and pest to pest etc. and at minimizing crop losses with due consideration to human health besides safety to environment live and let live is the philosophy behind IPM. IPM approach has been global accepted for achieving sustainability in agriculture.

The philosophy of IPM did not percolate down to the farmers for quite a long time after its presentations and prescription for solving pest problems in modern agriculture. It was also suggested that the illiterate farmers of developing countries were unable to grasp the concept of IPM and, therefore, could not implemented it. However, the pessimists have been proven wrong and the same farmers have now demonstrations that they are quite capable of understanding the intricacies of IPM. The success of farmer field schools (FFSs) in the implementation of IPM in many Asian countries proves that farmers are quite responsive to appropriate Technologies which give due to weightage their traditional wisdom, local conditions and socioeconomic constraints (Bergvinson, 2004).

The most of area's farmers depends only insecticides to control the insect pest it is caused the farmer are unaware about IPM and IPM technologist. Farmers are also unknown about resistant varieties for different insect pest. There is also lack of communications and knowledge in understandable language about IPM and about benefits of IPM. The major insect pest of sugarcane crop are Root borer, Early shoot borer, Pyrilla, Gurudaspur borer, Top borer, sugarcane white fly and Black bug etc.

To keep pest number below harmful life Economic Threshold Level (ETL) instead of their eradication.

To protect and conserve the environment including bio-diversity.

To make plant protection feasible, safe and economical even for the small farmers.

There is always a distorted view of IPM as pest control without chemical or biological control. In fact IPM is based on the optimization, not maximization of chemical pesticides.

The IPM approach encompasses all available control techniques to contain and combat pest infestation with the aim of lessening the pesticides load in the environment. To get economic production it is essential to combine all suitable technique and methods of pest suppression in as compatible a manner

as possible to maintain pest population at level below those causing economic injury.

Importance of Integrated Pest Management

The strategy of a good IPM programme advocates need based use of insecticides rather than calendar based prophylactic treatment.

Protects the environment from pesticidal pollution through air, water, soil and food chain system.

Minimizes the chances of the development of insect pest resistance against insecticides, pest resurgence and Secondary pest outbreak.

IPM is useful to maintain ecological balance.

Protects beneficial insect and natural enemies from the effects of synthetical chemical pesticides they are easily bio-degradable.

It is beneficial to public health. It is economically viable and socially propositional.

It is essential for food processing, particularly for export.

IPM is an effective and environmentally sensitive approach to pest management that relies on a combination of common sense practices. IPM programme use current comprehensive information on the life cycle of pest and their interaction with the environment. This information, in combination with available pest control methods is use to manage pest, damage by the least possible hazards to people, property.

IPM is not a single pest control method but rather a series of pest management evaluation, decisions and controls. In practicing of IPM, growers who are aware of the potential for pest infestation follow a four-tiered approach. The four steps include:

Set action thresholds.

Monitor and identify pest.

Prevention.

Control.

Through the use of good agronomic or cultural methods, which are unfavorable for the development of pest problems, regular monitoring of pest activity is essential for decisions in IPM. Selected control measures to check pests are to taken at economic threshold level (ETL) or action threshold level (ATL). IPM strives to optimize rather than maximize pest control efforts.

Materials and Methods

The study was conducted in purposively selected Sitapur district of Uttar Pradesh. There are 19 community development blocks in this district out of that is one block Khairabad was selected purposively. This block has 10 Nyay Panchayat, 66 gram panchayat and 114 villages, covering an area of 25361 hectares. The number of villages was 114 from which 5 villages were selected purposively, and then the list of total farmers was prepared for each selected villages. Thereafter 100 farmers were selected as respondents though random sampling techniques with respect to the categories of the farmers for each selected village. Data were collected with the help of semi-structured interview schedule specially developed on standard scales with some modifications in the light of objectives and analyzed with suitable statistical methods respectively.

Results and Discussion

Age composition

It reveals from the Table-1 that the maximum number of respondents (60%) was observed in middle age category followed by old age (21%) and young age (19%), respectively. The age of the selected respondents range from 22 to 70 years.

The mean age of the respondents were observed to be 48.12 years. It can be said that

the middle age of the people are more engaged in farming in the study area.

Education

The Table-2 focuses that literacy per cent of the respondents was observed to be 68% literate and 32% illiterate. Further, the educational level was worked out and given in descending order as 26%, 23%, 09%, 08% and 02% for junior high school, primary school, high school, intermediate and graduate, respectively.
It can be concluded that the maximum numbers of respondents was found literate.

Caste category

The Table-3 indicates that the maximum number of the respondents were observed (67%) other backward caste followed by scheduled caste 22% and general caste 11%, respectively. Thus it is conclude that the other backward caste and scheduled caste were dominant in the study area.

Type of family

The Table-4 shows that single families are more in number than joint families. In terms of percentage 54% respondents belong to single type families and 46% belong to joint type of families system.

Size of family

The Table-5 shows that the 67 per cent respondents belong to the medium category were who had 5-11 members in their families followed by small (18%) and large (15 %) to the category of up to 4 members and 12 and above members, respectively. The average size of the family was observed to be 7.87 members. The range between minimum and maximum number of 5-11.

Size of land holding

The Table-6 indicates that most of the respondents 47% was found in the land holding category as marginal (Less than 1ha.) followed by 40% in the category of small (1-2 ha.), 12% in the category of medium (2-4 ha.) and in the category of large 1% (4 ha. and Above), respectively.
The average land holding of the respondents was found to be 1.06 hectare. The minimum and maximum land holding as possessed by the respondents ranged 0.25 ha. to 5.0 ha. respectively. Hence, it may be said that marginal farmers are more than others in study area.

Occupation

It is evident from the Table-7 that the maximum 78% respondents were observed such who had their main occupation as agriculture and 14 % respondents was found Business, 9% Service as main occupation. The maximum 67% respondent was observed such who had their subsidiary occupation as Agriculture labour followed by 17% Business, 3% caste based occupation, 2% service and 1% Dairying respectively. On the basis of data, it can be said that Agriculture is the main occupation of rural people. Other than Agriculture labour occupation of the respondents was having subsidiary occupation having subsidiary occupation.

Annual income

The Table-8 reveals that a maximum number of the respondents 80% belong to the annual income Rs. 45001 to 172000 where as 17% and 3%, respondents belong to income range from Rs. 172001 and above and up to 45000, respectively. It can be said that the maximum respondents were having the annual income Rs. 45001 to 172000.

Housing pattern

The Table-9 indicates that 41% respondents reported having mixed houses, 31% Kachcha houses followed by 28% pucca type houses. It means that this area was having mixed type of housing pattern.

Materials possession

The Table-10 indicates that 61% respondents having their Diesel engine followed by 57%, 10%, 4%, 4%, 3% and 2% there are bullock, Tractor, power tiller, Other farm power and Combine respectively.

Farm implements materials

It is clear from the data included there in the Table-10.1 that the majority of the respondents (100%) was reported having each Khurpi and Sickle followed by Kudal (89%), Shovel and Chaff cutter (83%), Deshi plough (67%), Pata (65%), Sprayer (53%), cultivator (26%), disc plough (10), Thresher (9%), Rotavator (4%), seed drill (9%), and Potato planter, Duster/ Power duster (2%) respectively.

Thus, it can be said that the respondents were having a good number of implements with them.

Transportation material possession

The Table-10.2 clearly indicates that an over-whelming majority of the respondents (100%) was found having Cycle as a means of transportation followed by Bike/scooter (55%), bullock cart (17%), Trolley, Tractor Trolley (10%), and Jeep/Car (2%) respectively.

Thus, the interference can be drawn from the above data that Cycle was important means of transportation with the respondents.

Houses hold materials possession

The Table-10.3 clearly indicates that 98% respondents were reported that Wrist watch followed by Wall clock (97%), chair (91%), cots (85%), presser cooker (37%), Crockery (36%), Gas stove/Gas cylinder (31%), double bed (30%), Solar lantern (22%), sewing machine (19%), Fan (17%), electric press (13%), dressing table (6%), Sofa set (4%), and heater (2%) respectively.

The condition of house hold materials seems to be good.

Communication media possession

Table-10.4 that the majority of respondents (92%) were observes possessing Mobile phone with them.

The rest of respondents who had other communication media were in descending order as Radio (87%), T.V. (65%), Newspaper (84%), D.T.H. (34%), Agriculture Books (33%), V.C.D. player (21%), Agril. Journals/ Magazines, General Magazines (18%), Internet (10%), Laptop (2%), and Tape-recorder, Desk top (1%) respectively. Thus, it can be inferred that mobile phone and Radio were main sources for getting information's and recreation purposes.

Overall materials possession

The Table-10.5 clearly indicates that overall material possession was categorized into three main categories on the basis of scores as low (up to 40 scores), medium (41 to 84 scores) and high (85and above scores).

The data given in Table-5.1.16 revealed that highest number of the respondents (71%) were observed in the medium category (41 to 84) of materials possession followed by (20%) high (85 and above) and (9%) low (up to 40), respectively. Thus, it can be concluded

that the materials possession of respondents was appreciably better. The mean of scores for materials possession was observed to be 64.59 with a minimum 23 and maximum 128 scores.

Table.1 Distribution of the respondents on the basis of age

N=100

S.No.	Categories (years)	Respondents	
		Number	Percentage
1.	Young age (Up to 37)	19	19.00
2.	Middle age (38-59)	60	60.00
3.	Old age (60 and above)	21	21.00
	Total	**100**	**100.00**

Mean=48.12, S.D. =11.52, Min. =22, Max. = 70

Table.2 Distribution of the respondents on the basis of education

N=100

S. No.	Categories	Respondents	
		Number	Percentage
A.	Illiterate	32	32
B.	Literate	68	68
	Total	**100**	**100**
I	Primary school	23	23
Ii	Junior high school	26	26
Iii	High school	09	09
Iv	Intermediate	08	08
V	Graduate	02	02
	Total	**68**	**68**

Table.3 Distribution of the respondents on the basis of caste

N=100

S. No.	Categories	Respondents	
		Number	Percentage
1.	General caste	11	11.00
2.	Other Backward caste	67	67.00
3.	Scheduled caste	22	22.00
	Total	**100**	**100.00**

Table.4 Distribution of the respondents on the basis type of family

N=100

S.No.	Family type	Respondents	
		Number	Percentage
1.	Nuclear/Single family	54	54.00
2.	Joint family	46	46.00
	Total	**100**	**100.00**

Table.5 Distribution of the respondents on the basis of family size

N=100

S.No.	Categories (members)	Respondents	
		Number	Percentage
1.	Small (up to 4)	18	18.00
2.	Medium (5-11)	67	67.00
3.	Large (12 and above)	15	15.00
	Total	**100**	**100.00**

Mean=7.87, S.D. =3.93, Min=2, Max=21

Table.6 Distribution of the farmers on the basis of land holding (hectares)

N=100

S.No.	Categories (hectares)	Respondents	
		Number	Percentage
1.	Marginalfarmers (Less than 1)	47	47.0
2.	Small farmers (1-2)	40	40.0
3.	Medium farmers (2-4)	12	12.0
4.	Large farmers (Above 4)	1	1.0
	Total	**100**	**100.0**

Mean=1.06, Min=0.25, Max=5

Table.7 Distribution of the respondents on the basis of Occupation

N=100

S.No.	Occupation	Main		Subsidiary	
		No.	%	No.	%
1.	Agriculture labour	0	0.00	67	67.00
2.	Caste based occupation	0	0.00	3	3.00
3.	Services	9	9.00	2	2.00
4.	Agriculture	78	78.00	0	0.00
5.	Business	14	14.00	17	17.00
6.	Dairying	0	0.00	1	1.00

Table.8 Distribution of the respondents on the basis of annual income (Rs.)

N=100

S. No.	Annual income	Respondents	
		Number	Percentage
1.	Small(up to 45000)	3	3.00
2.	Medium(45001 to 172000)	80	80.00
3.	High(172001 and above)	17	17.00
	Total	**100**	**100.00**

Mean =108240.00, S.D. =63633.44, Min. =45000.00, Max. =350000.00

Table.9 Distribution of the respondents on the basis of housing pattern

N=100

S. No.	Housing pattern	Respondents	
		Number	Percentage
1.	Kachcha	31	31.00
2.	Pucca	28	28.00
3.	Mixed	41	41.00
	Total	**100**	**100.00**

Table.10 Distribution of the respondents on the basis of farm power

N=100

S. No.	Farm power	Respondents	
		Number	Percentage
1.	Bullock	57	57.00
2.	Tractor	10	10.00
3.	Power tiller	04	04.00
4.	Diesel engine	61	61.00
5.	Electric motor	03	03.00
6.	Combine	02	02.00
7.	Other farm power	04	04.00

Note: More than one items have been shown by respondents, hence the total percentage of all items would be more than 100.

Table.10.1 Distribution of the respondents on the basis of farm implements

N=100

S.No.	Farm implements	Respondents	
		Number	Percentage
1.	Cultivator	26	26.00
2.	Disc Plough	10	10.00
3.	Thresher	9	09.00
4.	Seed drill	3	03.00
5.	Deshi plough	67	67.00
6.	Pata	65	65.00
7.	Kudal	89	89.00
8.	Potato planter	2	02.00
9.	Shovel	83	83.00
10.	Sprayer	53	53.00
11.	Chaff cutter	83	83.00
12.	Rotavator	4	04.00
14.	Khurpi	100	100.00
15.	Sickle	100	100.00
16.	Duster/ Power duster	2	02.00

Note: More than one items have been shown by respondents, hence the total percentage of all items would be more than 100.

Table.10.2 Distribution of the respondents on the basis of transportation materials

N=100

S. No.	Medium of Transportation	Respondents	
		Number	Percentage
1.	Bullock cart	17	17.00
2.	Jeep/ Car	2	2.00
3.	Trolley	10	10.00
4.	Tractor Trolley	10	10.00
5.	Cycle	100	100.00
6.	Bike/scooter	55	55.00

Note: More than one items have been shown by respondents, hence the total percentage of all items would be more than 100.

Table.10.3 Distribution of the respondents on the basis of household materials

N=100

S. No.	Particulars	Respondents	
		Number	Percentage
1.	Gas stove/Gas cylinder	31	31.00
2.	Double bed	30	30.00
3.	Pressure cooker	37	37.00
4.	Electric press	13	13.00
5.	Wall clock	97	97.00
6.	Wrist watch	98	98.00
7.	Chairs	91	91.00
8.	Crockery	36	36.00
9.	Heater	02	02.00
10.	Fan	17	17.00
11.	Sewing machine	19	19.00
12.	Cots	85	85.00
13.	Dressing table	06	06.00
14.	Sofa set	4	04.00
15.	Solar lantern	22	22.00

Note: More than one items have been shown by respondents, hence the total percentage of all items would be more than 100.

Table.10.4 Distribution of the respondents on the basis of communication media possession

N=100

S. No.	Communication media	Respondents	
		Number	Percentage
1.	Radio	87	87.00
2.	T.V.	65	65.00
3.	Tape-recorder	1	01.00
4.	Mobile phone	92	92.00
5.	Agril. Journals/ Magazines	18	18.00
6.	D.T.H.	34	34.00
7.	General Magazines	18	18.00
8.	Agriculture Books	33	33.00
9.	News paper	48	48.00
10.	Internet	10	10.00
11.	VCD player	22	22.00
12.	Desk top	1	01.00
13.	Laptop	2	02.00

Note: More than one items have been shown by respondents, hence the total percentage of all items would be more than 100.

Table.10.5 Distribution of the respondents on the basis of overall material possession

N=100

S. No.	Categories (score value)	Respondents	
		Number	Percentage
1.	Low (up to 40)	9	09.00
2.	Medium (41 to 84)	71	71.00
3.	High (85 and above)	20	20.00
	Total	**100**	**100.00**

Mean=64.59, S.D. =20.59, Min. =23, Max. =128

On the basis of the findings, it may be concluded that-

A maximum number of the respondents (60%) were found in middle age group *i.e*. 39-59 years.

The maximum *i.e.* 68 per cent of respondents was found literate while 32 per cent was observed illiterate.

The maximum numbers of the respondents (67%) was found belonging to other backward caste followed by Schedule caste (22%) and general caste (11%).

The maximum *i.e.* 99 per cent of respondents were found to be married and one respondent is unmarried.

Single families were more in number than joint families in terms of percentage. 54 per cent respondents belonged to single families while, 46 per cent to joint type of families.

67 per cent respondents were observed having 5-11 members in their families followed by 18 per cent having up to 4 members and 15 per cent having 12 and above members, respectively.

The maximum percentage of the respondents *i.e*. 47 per cent were observed their having marginal size of land holding (Less than 1 ha) and 40 per cent respondents having small size of land holding 1-2 hectare, 12 per cent respondents having medium size of land holding 2-4 hectare, 1 per cent respondents having marginal size of land holding above 4 hectare, respectively.

An over whelming majority *i.e.* 78 per cent respondents families was reported Agriculture as their main occupation.

The maximum number of respondents (41%) reported having mixed housing pattern followed by (31%) Kachcha and (28%) Pucca, respectively.

A majority *i.e.* 59% of the respondents did not take participation in any organization followed by 41% respondents participates in one organization respectively.

A maximum numbers (80%) of the respondents earned the annual income Rs. 45001-172000 while 17% and 3% respondents earned annual income Rs. 172001 and above and up to 45000, respectively.

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