Original Research Article

A Study on Agri-preneurial Behaviour of Kalanamak Rice growers in Siddharth Nagar and Sant Kabir Nagar district of Uttar Pradesh, India

ABSTRACT

Kalanamak rice, hailed for its nutritional potency and health benefits, presents a promising avenue for alleviating these challenges. This study, titled "A Study on Agri- preneurial Behaviour of Kalanamak Rice Growers in Siddharth Nagar and Sant Kabir Nagar District of Uttar Pradesh, India," delves into this potential within the precincts of Siddharth Nagar and Sant Kabir Nagar district. The investigation hones in on two blocks – Birdpur in Siddharth Nagar, and Santha in Sant Kabir Nagar. Methodologically rigorous, the study selected six villages from each block and engaged with a total of 120 Kalanamak growers. Data collection unfurled through personalized interviews, facilitated by a meticulously crafted questionnaire. To unravel patterns and nuances, statistical tools such as frequency, percentage, mean, and standard deviation orchestrated the classification of data. The coefficient of correlation `r` was invoked to fathom the interplay between Kalanamak growers` attributes, their knowledge, and their adoption of Kalanamak rice. Analysis of the respondent demographics spotlighted several noteworthy trends. A preponderance (70.83%) emerged from the middle age group, with educational attainments peaking at the middle school (34.17%). In terms of occupation, 45% were engaged in agriculture, The agrarian landscape was marked by a significant representation from the Other Backward Classes (OBC) category (49.17%), Landholding skewed towards the smaller end (49.17%), Family dynamics, as reflected in size and structure, were characterized by medium level (64.17% and 90.83%, respectively).

Keywords: - Kalanamak, Rice growers, Sant Kabir Nagar, Socio-economic, Psychological characteristics, Uttar Pradesh.

1. INTRODUCTION

Rice is the basic grain consumed as a food in India gown during *kharif* season which is found in almost every Indian kitchen and plays a very significant role in Indian food security. It is the most common grain and the most common food in India; however, India is not only a big consumer of rice but also it is the second-largest producer of rice in the world after China (Bandumula, 2018). India also holds the largest agricultural land for paddy production in the world (Mahajan *et al.* 2017). In 2022 total arable land for paddy in the world is 158,300,068 hectares with a total production of 685,240,469 tonnes of paddy, out of which 41850000 hectares of the area is held by India only, which produced 133,700,000 tonnes of paddy just second after 196681170 tonnes by China (Source: Directorate of Economics and Statistics, Department of Agriculture and Cooperation). India leads in terms of land holdings, while the production is led by China (Pandey *et.al.* 2007). Kalanamak rice variety is the epitome of the best aromatic rice cultivated and consumed in the Northeastern part of Uttar Pradesh (Chaudhary *et al.* 2012). To the local palate, it was even classed superior to Indian mystery rice Basmati. Kalanamak rice was granted the Geographical Indication (GI) Tag in 2012 by the Government of India. It is a heritage rice variety, which has been under cultivation since time immemorial (Chaudhary and Tran 2001; Chaudhary and Mishra 2010). The exact history of its cultivation is not recorded but it is believed that Kalanamak was the preferred variety for offerings

given to Lord Buddha some 3,000 years ago. Kalanamak has been in cultivation mainly in the north-eastern part of Uttar Pradesh and the western and central part of Nepal Tarai (Chaudhary *et al.* 2022). Over centuries under cultivation, farmers way of handling seeds, neglect by rice research institutions and double onslaught on the economic front by high-yielding varieties (HYV), deterioration in its quality and the area under cultivation has reduced (Kumar *et al.* 2023). Knowing the importance of the Kalanamak in the region to the farmers and retarding condition of the Kalanamak it becomes important to understand the status of the farmers in Sant Kabir Nagar and Sidharth Nagar district and the correlation of various factors with knowledge and extent of adoption to the farmers.

2. MATERIAL AND METHOD

The present study was conducted in Siddharth Nagar and Sant Kabir Nagar district which is the eastern part of Uttar Pradesh. Siddharth Nagar and Sant Kabir Nagar district is the most important district of the state, for Kalanamak rice growers which is located in the eastern part of Uttar Pradesh. From 14 blocks in Siddharth Nagar and 9 blocks in Sant Kabir Nagar district of Uttar Pradesh, one block from each district was purposively selected which are Birdpur and Santha block. From these blocks, six villages from each block were selected which are from Birdpur block (Badhaya, Ghoswa, Mahadewa, Motipu, Navdihwa, and Visunpur) and Santha (Banethu, Bharwaliya, Badgo, Jigina, Parsa Shukla and Parasia). The district, block, and village were selected purposively as it has the maximum number of Kalanamak rice growers and the maximum area covered under this area by Kalanamak rice growers. A purposive sampling method was used for the selection of the district, block, and villages. From each village, 10 respondents were selected by random sampling technique for the research work. The sample size taken was 120 respondents. The data was collected with the help of a personal interview technique with the help of an interview schedule. The recorded responses from the respondents were converted into scores for tabulation and analyses were done with appropriate statistical tools. The following statistical tools and formulas like- arithmetic mean, standard deviation, percentage analysis, and Pearson's correlation coefficient were used with the help of MS Excel and OPSTAT software in the study based on the nature of the data.

Figure 1 Data collection during the survey work

3. RESULT AND DISCUSSION

The socio-economic and psychological characteristics of Kalanamak rice growers.

The data presented in Table 1 indicates that a majority (70.83%) of the Kalanamak rice growers belong to the middle age group. This is followed by 15.00% of the farmers who fall into the old age category, while 14.17% of the farmers are in the young age group. These findings align with the results of Singh *et al.* (2022). Additionally, the study revealed that the highest proportion (70.83%) of respondents of this age category was observed in Siddharth Nagar district, as compared to Sant Kabir Nagar district. Referring to Table 1, it is evident that the majority of respondents (34.17 percent) possessed a middle school education. This was followed by 17.5 percent who were categorized as illiterate, 13.33 percent with a primary school education, 12.5 percent with a high school education, 11.67 percent with intermediate education, and 10.83 percent holding a graduate degree or higher. Furthermore, the study revealed that the highest percentage (34.17%) of respondents with middle school education was recorded in Siddharth Nagar district, in comparison to Sant Kabir Nagar district. Venkataramaiah (1990). Based on the data presented in Table 1, the majority of respondents (45%) were involved in agriculture, followed by (29.16%) engaged in both agriculture + labour, and (25.84%) involved in a combination of agriculture + business activities. Furthermore, the study found that the highest proportion (45%) of respondents engaged in agriculture was recorded in Siddharth Nagar district, as compared to Sant Kabir Nagar district Dhanotiya (2012). According to Table 1, the majority of Kalanamak rice growers (49.16 percent) belonged to the OBC caste category, followed by the General caste category (30.00 %), and SC (20.84 %). One cause could be that the majority of the respondents were from a lower socioeconomic status. In the study maximum (49.00%) of OBC caste category respondents were recorded in Siddharth Nagar compression to Sant Kabir Nagar district. The information provided in Table 1 reveals that among the total of 120 respondents, the majority (49.17 percent) possessed land holdings of up to 1 hectare. Following this, 40 percent of the respondents had land holdings ranging from 1 to 2 hectares, while 10.83 percent held more than 2 hectares of land. Moreover, the study highlighted that the highest percentage (49.17%) of respondents with land holdings were observed in Siddharth Nagar district, as compared to Sant Kabir Nagar district. The data presented in Table 1 indicates that out of the 120 respondents, 64.66 percent belonged to medium-sized families with 8 to 13 members, 19.17 percent belonged to large families with more than 14 members, and 16.66 percent belonged to small families with over 15 members. Among the studied districts, the maximum number of respondents with family size (64.17%) was recorded in Siddharth Nagar, compared to Sant Kabir Nagar district Trivedi and Pareek (1965). Table 1 shows that the majority of Kalanamak rice growers (90.83 %) came from joint families, while (9.17 %) came from nuclear families. The fragmentation or separation of rural families could be the major cause of this finding. In the study maximum (90.83%) of family respondents were recorded in Siddharth Nagar compression to Sant Kabir Nagar district Trivedi and Pareek (1965). The classification of respondents according to their annual income has been presented in Table 1 it indicates that out of total 120 respondents (45 percent) middle level of income in 1 to 2 lakhs, whereas (41.67 %) farmers were having low level in between up to 1 lakh, followed by (13.33 %) were having high level income above 2 lakhs respectively. According to Table 1 shows that the majority (65.84 %) had a medium level of farming experience ranking from 15 to 34 years, followed by high

level (28.34 %) of more than 35 years. However, (18.33 %) of the respondents had low experience of Kalanamak rice cultivation respectively. In the study maximum (65.84%) of farming experience respondents were recorded in Siddharth Nagar compression to Sant Kabir Nagar district. Nisha and Rajasekaran (2018). According to Table 1 shows that the majority (36.67 percent) had a low level of mass media ranking from up to 10, followed by medium level (35 percent) of 11 to 12. However, (28.33 %) of the respondents were having high level mass media of Kalanamak rice cultivation respectively. In the studied maximum (36.67%) of farming mass media respondents were recorded in Siddharth Nagar compression to Sant Kabir Nagar district Amitha *et al.* (2014). According to Table 1 shows that the majority (71.67 %) had a medium level of social participation ranking from 2 to 9, followed by high level (15 %) of above 10. However, (13.33 %) of the respondents were having low social participation of Kalanamak rice cultivation respectively. In the studied maximum (71.67%) of social participation respondents were recorded in Siddharth Nagar compression to Sant Kabir Nagar district. Trivedi and Pareek (1965). According to Table 1 shows that the majority (65 %) had a medium level of extension contact ranking from 4 to 8, followed by low level (20.83 percent) of up to 3. However, (14.17 %) of the respondents were having high level extension contact of Kalanamak rice cultivation respectively. In the studied maximum (65%) of extension contact respondents were recorded in Siddharth Nagar compression to Sant Kabir Nagar district. Amitha *et al.* (2014).

Table 1 The socio-economic and psychological characteristics of Kalanamak rice growers.

	Sr. No.	Category	Frequency	Percentage
Age	1.	Young (Below 31 years)	17	14.17
	2.	Middle (32 to 55 years)	85	70.83
	3.	Old (Above 56 years)	18	15.00
Educational status	1.	Illiterate	21	17.50
	2.	Primary school	16	13.33
	3.	Middle school	41	34.17
	4.	High school	15	12.50
	5.	Intermediate	14	11.67
	6.	Graduate & above	13	10.83
occupational status	1.	Agriculture	54	45.00
	2.	Agriculture + Labour	35	29.16
	3.	Agriculture + Business	31	25.84
Caste	1.	General	36	30.00
	2.	OBC	59	49.16
	3.	SC	25	20.84
Size of land holding	1.	Up to 1 ha	59	49.17
	2.	1 to 2 ha	48	40.00
	3.	More than 2 ha	13	10.83

Family size	1.	Small (Up to 7 member)	20	16.66
	2.	Medium (8 to 13 member)	77	64.17
	3.	Large (Above 14 member)	23	19.17
Family type	1.	Joint	109	90.83
	2.	Nuclear	11	9.17
Annual Income	1.	< Rs. 1,00,000	50	41.67
	2.	Rs.1,00,001–Rs. 2,00,000	54	45.00
	3.	> Rs. 2,00001	16	13.33
Farming Experience	1.	Low (up to 14 year)	22	18.33
	2.	Medium (15 to 34 year)	79	65.84
	3.	High (above 35 year)	19	15.83
Mass media exposure	1.	Low (up to 10)	44	36.67
	2.	Medium (11-12)	42	35.00
	3.	High (more then 13)	34	28.33
Social Participation	1.	Low (up to 1)	16	13.33
	2.	Medium (2 to 9)	86	71.67
	3.	High (Above 10)	18	15.00
Extension agent contact	1.	Low (up to 3)	25	20.83
	2.	Medium (4 to 8)	78	65.00
	3.	High (Above 9)	17	14.17

Knowledge of farmers about Kalanamak rice.

It refers to the knowledge of the respondents about the recommendation cultivation practices of Kalanamak rice. The knowledge plays a key role in maximization of the profit by adopting new improved technology.

Adoption of farmer about Kalanamak rice

It refers to the adoption of the respondents about the recommendation cultivation practices of Kalanamak rice. The knowledge plays a key role in maximization of the profit by adopting new improved technology.

Table 2 Classification of the respondents according to their level of knowledge and level of adoption (n=120)

Variables	Category	Frequency	Percentage
Level of knowledge	**Low (up to 11)**	**24**	**20.00**
	Medium (12 to 13)	**64**	**53.33**
	High (above 14)	**32**	**26.67**
Level of	**Low (up to 17)**	**28**	**23.33**

adoption	**Medium (18 to 20)**	**71**	**59.17**
	High (above 21)	**21**	**17.5**

It is observed from the table 2 that majority of the respondents (53.33 %) had medium level of knowledge about recommended farming of Kalanamak whereas, (26.67 %) and (20 %) of the respondents were having low and high level of knowledge about the recommended farming of Kalanamak rice growers. It was observed from Table 2 that majority (59.17 %) of the respondents had medium level adoption of recommended farming practices of Kalanamak rice. The percentage of respondents having low adoption was (23.33 %) whereas only (17.5 %) respondents were having high level of adoption.

Table 3 Relationship between socio-economic and psychological characteristics of Kalanamak rice growers with knowledge and adoption

Sr. No.	Variables	Correlation coefficient (r) with level of knowledge	Correlation coefficient (r) with level of adoption
1.	Age	0.085	0.070
2.	Education qualification	0.010	0.032
3.	Occupational	0.116	0.188**
4.	Caste	0.008	-0.204**
5.	Land holding	0.099	0.176
6.	Family Size	-0.289**	-0.148
7.	Family Type	-0.189**	0.011
8.	Annual Income	0.113	0.143
9.	Farming Experience	-0.068	-0.068
10.	Mass media exposure	0.313**	0.177
11.	Social participation	0.173	0.292**
12.	Extension contacts	0.409**	0.314**

Age of respondents had non –significant relationship with the Knowledge. There was non-significant statistical relationship between knowledge and age of Kalanamak (r = 0.085). It means that the age was not influenced of knowledge the Kalanamak rice growers. Relation between education of the Kalanamak rice growers is non-significant with their knowledge about recommender farming practices of Kalanamak rice (r = 0.010). Caste of Kalanamak rice growers in non-significant and positively related with their knowledge level about recommended farming practices of Kalanamak rice (r = 0.008). Land holding of Kalanamak rice growers was found to be non-significant with their knowledge about recommended farming practices of Kalanamak rice (r = 0.099). Family size of Kalanamak rice growers was found to be negatively non-significant with their knowledge about recommended farming practices of Kalanamak rice (r = -0.289). Family type of Kalanamak rice growers was found to be

negatively non-significant with their knowledge about recommended farming practices of Kalanamak rice (r = -0.189)**.** Annual income of the Kalanamak rice growers is non-significant with their knowledge about recommender farming practices of Kalanamak rice (r = 0.113). Farming experience in Kalanamak cultivation of Kalanamak rice growers was observed to be highly non-significant and negatively related with their knowledge about recommended farming practices of Kalanamak rice (r = -0.068). Mass media exposure of Kalanamak rice growers is non-significant and positively related with their knowledge level about recommended farming practices of Kalanamak rice (r = 0.313). Social participation of Kalanamak rice growers was found to be non-significant with their knowledge about recommended farming practices of Kalanamak rice (r = 0.173). Extension contact of Kalanamak rice growers is non-significantly and positively related with their knowledge level about recommended farming practices of Kalanamak rice (r = 0.409) Table 3.

Age of respondents had non-significant relationship with the adoption. There was non-significant statistical relationship between adoption and age of Kalanamak (r = 0.070). It means that the adoption was not influenced and age of the Kalanamak rice growers. Relation between education of the Kalanamak rice growers is non-significant with their adoption about recommender farming practices of Kalanamak rice (r = 0.032). Relation between occupation of the Kalanamak rice growers is non-significant and positively related with their adoption about recommender farming practices of Kalanamak rice (r = 0.188). Caste of Kalanamak rice growers in non-significant and negatively related with their adoption level about recommended farming practices of Kalanamak rice (r = -0.204). Land holding of Kalanamak rice growers was found to be non-significant and positively related with their adoption about recommended farming practices of Kalanamak rice (r = 0.176). Family size of Kalanamak rice growers was found to be negatively non-significant with their adoption about recommended farming practices of Kalanamak rice (r = -0.148). Family type of Kalanamak rice growers was found to be non-significant with their adoption about recommended farming practices of Kalanamak rice (r = 0.011). Annual income of the Kalanamak rice growers is non-significant with their adoption level about recommender farming practices of Kalanamak rice (r = 0.143). Farming experience in Kalanamak cultivation of Kalanamak rice growers was observed to be negatively non-significant and positively related with their adoption about recommended farming practices of Kalanamak rice (r = -0.068). Mass media exposure of Kalanamak rice growers is non-significant and positively related with their adoption level about recommended farming practices of Kalanamak rice (r = 0.177). Social participation of Kalanamak rice growers was found to be non-significant with their adoption about recommended farming practices of Kalanamak rice (r = 0.292). Extension contact of Kalanamak rice growers is non-significant and positively related with their adoption level about recommended farming practices of Kalanamak rice (r = 0.314) Table 3.

4. CONCLUSION

Majority of the Kalanamak rice growers belonged to the middle age group, most of them had received education qualification in middle school and illiterate, most of them had occupations in agriculture, most of them is of OBC caste, having small land holding, medium family size, joint family type, medium annual income, medium farming experiences, low mass media, medium social participation, medium extension contact. It was observed that the majority of the Kalanamak rice growers had in medium level of knowledge regarding the recommended farming of Kalanamak rice, while a medium level of adoption category regarding the recommended farming of Kalanamak rice. It was concluded that Kalanamak growers' characteristics viz. Age, educational qualification, occupation, land holding, annual income, mass media exposure, and extension contact were positively and non-significantly related with the knowledge of recommended cultivation and level of adoption for Kalanamak rice, while family size, family type, farming experience were negatively and correlated non-significantly with knowledge whereas caste, family size, farming experience was negatively non-significant with level of adoption.

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