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Comparison of profile characteristics of onion growers in Northern dry zone of Karnataka

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Abstract

Onion (*Allium cepa*) is a significant commercial vegetable crop in India, grown by farmers of all categories and used as a condiment in majority Indian households. India is the second-largest producer of onion after China. In recent years, the growing demand for onions driven by rising income and changing consumption habits, export demands and increasing population poses the challenge for further increasing the production and productivity of onion. Hence, the present study was conducted to know the profile characteristics of onion growers which influence the onion cultivation. The study was taken up by employing ex-post facto research design, the data were collected from 270 sample using stratted schedule. The results of the study highlighted that high per cent of the onion growers noticed in middle aged group (58.16%), medium family size (53.33%), experience in onion cultivation (48.12%). Further, results revealed that almost 50 per cent had education more than high school level (51.88%), more than 50.00 per cent had land holdings more than 5 acres, agriculture was the major occupation (65.55%). Majority of the onion growers found in medium group of extension contact (45.18%), extension participation (43.33%), mass media participation (50.00%), access to e-tools (38.53%). The study of these profile characteristics helps the researchers in planning and execution of extension activities, programmes for the onion growers in the other similar areas.

Keywords: Access to e-tools, onion growers, profile characteristics, extension contact

Introduction

Onion (*Allium cepa*) is a significant commercial vegetable crop in India, grown by farmers of all categories and used as a condiment in majority Indian households. With a productivity of 19.20 metric tonnes per hectare, onions were produced on 5.04 million hectares worldwide, accounting for 96.77 metric tonnes of production (F.A.O.S.T.A.T., 2020). After China, India is the world's second-largest onion producer. Together, China and India are responsible for 53% of the world's onion output. Our country accounts for 20.4% of global onion production. India stands next to the Netherlands in exporting onion. India has exported 2,525,258.35 MT of fresh onion to the world, worth Rs. 4,522.79 crores during the year 2022-23. (APEDA). Dharwad, Chitradurga, Bijapur, Gadag, Davanagere, Gulbarga, Chikkamagaluru, Haveri, Bellary, Belgaum, Kolar, and Bagalkot are the principal onion-growing districts in Karnataka. In recent years, the growing demand for onions driven by rising income and changing consumption habits, as well as falling agricultural income due to rising costs and static food grain production, export demands and increasing population poses the challenge for further increasing the production and productivity of onion. Further, dynamics of price fluctuation of onion negatively affects the economy of onion growers. This hinders onion cultivation. All these necessitate to study the onion cultivation. Hence, the present study was taken up to know the profile characteristics onion growers which influence the onion cultivation in northern dry zone area where farming is mainly under rainfed condition.

Materials and Methods

The present study was conducted in northern dry zone of Karnataka with *ex-post facto* research design. Three districts namely Bagalkote, Vijayapura and Gadag and two taluks from each district were selected based on the highest area under onion cultivation. Three villages from each taluk and fifteen onion growers from each village were selected randomly to form a sample of 270. The data were collected from the respondents through personal interview method with structured and pre-tested interview schedule. The collected data were analyzed by using frequency, percentage, mean, and standard deviation.

Results and Discussion

Age

An insight into Table 1 explains about the profile characterises of onion growers in all the three districts namely Vijayapura, Bagalkote and Gadag. With respect to age, majority of the respondents were found to be middle aged in all the three districts followed by old and young age groups. Hence, in the overall profile also majority were found in middle aged group. Vijayapura (62.22%) was followed by Bagalkote (58.89%) and Gadag (53.33%) districts with

respect to middle age group of onion growers. In old age group Bagalkote (31.11%), and Gadag (30.00) had almost similar per cent age of onion growers followed by Vijayapura (25.56%). While, Gadag (16.67%) was followed by Vijayapura (12.22%) and Bagalkote (10.00) in young age group. At middle age, individuals take responsibility of the family and do work. They are open to new learning, energetic and have the strength to work in the field than the other two categories. The younger people generally engage themselves in educational activities.

Table 1: Profile characterises of onion growers of Vijayapura, Bagalkote and Gadag districts

SL. No.	Variables	Category	Vijayapura	Bagalkote	Gadag	Overall
			N1=90	N2=90	N3=90	N=270
			F (%)	F (%)	F (%)	F (%)
1	Age	Young age (18-35)	11(12.22)	9(10.00)	15(16.67)	35(12.96)
		Middle age (36-55)	56(62.22)	53(58.89)	48(53.33)	157(58.16)
		Old age (56 and above)	23(25.56)	28(31.11)	27(30.00)	78(28.88)
		Mean	49.00			
		SD	11.00			
2	Education	Illiterate	33(36.67)	7(7.78)	8(8.89)	48(17.77)
		Can read and write	7(7.78)	5(5.56)	5(5.56)	17(6.29)
		Primary school (1 st – 4 th std)	8(8.89)	17(18.88)	19(21.11)	44(16.29)
		Middle school (5 th -7 th std)	8(8.89)	5(5.56)	8(8.89)	21(7.77)
		High school (8 th – 10 th std)	20(22.22)	23(25.56)	21(21.33)	64(23.70)
		PUC (11 th -12 th std)	10(11.11)	12(13.33)	14(15.55)	36(13.33)
		Graduate and above	4(4.44)	21(23.33)	15(16.67)	40(14.85)
3	Family size	Small (Up to 4 members)	29(32.22)	30(33.33)	22(24.44)	81(30.00)
		Medium (5-8 members)	47(52.22)	42(46.67)	55(61.12)	144(53.33)
		Big (Above 8 members)	14(15.56)	18(20.00)	13(14.44)	45(16.67)
		Mean	7.00			
		SD	3.00			
4	Land holding	Marginal farmer (up to 2.50 acres)	13(14.44)	9(10.00)	8(8.89)	30(11.11)
		Small farmer (2.51to 5.00 acres)	36(40.00)	22(24.44)	18(20.00)	76(28.14)
		Semi medium farmer (5.01 to 10.00 acres)	23(25.56)	18(20.00)	38(42.22)	79(29.28)
		Medium farmer (10.01 to 25.00 acres)	14(15.56)	29(32.22)	25(27.78)	68(25.18)
		Big farmer (more than 25.00 acres)	4(4.44)	12(13.34)	1(1.11)	17(6.29)
		Mean	9.85			
		SD	8.83			
5	* Occupation	Agri	64(71.11)	55(61.11)	58(64.44)	177(65.55)
		Agri + Dairy	5(5.56)	7(7.78)	3(3.33)	15(5.55)
		Agri + Poultry	3(3.33)	1(1.11)	4(4.44)	8(2.96)
		Agri + Goatry	6(6.67)	11(12.22)	6(6.67)	23(8.51)
		Agri + Business	2(2.22)	6(6.67)	10(11.11)	18(6.66)
		Agri + Labour	4(4.44)	7(7.78)	6(6.67)	17(6.29)
		Agri + Service	6(6.67)	3(3.33)	3(3.33)	12(4.48)
6	Farming experience in Onion cultivation	Less (3 – 12 years)	30(33.33)	33(36.67)	36(40)	99(36.67)
		Medium (13 – 20 years)	45(50.00)	41(45.56)	44(48.89)	130(48.12)
		High (21 and above)	15(16.67)	16(17.78)	10(11.11)	41(15.21)
		Mean	16.00			
		SD	08.00			
7	Annual income	Up to 60,000	33(36.67)	43(47.78)	44(48.89)	120(44.44)
		60,000- 1,20,000	18(20.00)	18(20.00)	25(27.78)	61(22.59)
		Above 1,20,000	39(43.33)	29(32.22)	21(23.33)	89(32.97)
		Mean	1,30,467.41			
		SD	1,21,719.07			

* Multiple answers obtained

** Values in parentheses indicate percentage

Thus, most of the onion growers found in the middle age group could be justified. The present results are in line with the results of Yashodhara (2011) ^[9] who explained the dominance of middle age among the onion growers.

Education

With respect to education (Table 1) of the onion growers, similar trend was observed between Bagalkote and Gadag

district. Education up to high school (25.56%, 21.33%) was followed by graduate and above (23.33%, 16.67%), PUC (13.33%, 15.55%), followed by up to primary education (18.88%, 21.11%), middle school (5.56%, 8.89%) and can read and write (5.56%, 5.56%) for Bagalkote and Gadag district, respectively. In Vijayapura, education up to high school (22.22%) was followed by PUC (11.11%) then followed by up to primary education and middle school with

same per cent age (8.89%), can read and write (7.78%) and lastly by graduate and above (4.44%). While, Illiterates were found more in Vijayapura (36.67%), followed by Gadag (8.89%) and Bagalkote (7.78%).

It was found that in the overall category more than 50 per cent of the onion growers were educated above high school while 30.5 per cent of them were educated below middle school. It was also disclosed that, 23.70 per cent of them were educated up to high school followed by graduate and above category (14.85%) and PUC category (13.33%). Further, it was also noted that a sizeable portion (17.77%) of onion growers were illiterate.

It is universal fact that education plays a major role in moulding and bringing desirable changes among human beings. All the onion growers were relatively educated, which could be the result of a common social environment and respect for higher educated people. Education is one of the prime factors influencing the knowledge of the individuals which helps not only to understand the situation and but also to find solution. Due to importance of elementary education and schemes by the Government like Sarva Shikshana Abhiyan might be the reason for fair amount of education (more than 80% were educated) among onion growers. Similar report was reported by Saha (2008)^[6].

Family size

A look into the table 1, disclosed that all districts had same trend that majority of the onion growers belonged to medium family (5-8 members) size, followed by small (up to 4 members) and big (above 8 members) family size. The percentages of medium, small and big family size were like 52.22, 32.22 and 15.56 for Vijayapura district, 46.67, 33.33 and 20.00 for Bagalkote district, 61.22 (comparatively higher among the three districts), 24.44 and 14.44 for Gadag district. The overall family size indicated 53.33 per cent of onion growers belonged to medium family, 30 per cent belonged to small family and 16.67 per cent belonged to big family.

The recent trend in the villages is also to have either medium or small family for decision making for better financial progress and desirable standard of living. There is stress on the family members to work in the field for timely agricultural operations from pre-sowing to post harvesting operational situations when labours are not at all available for field works in the present scenario. This could be the possible reason for majority of the onion growers to have relatively medium family in northern dry zone where rainfed farming is in practice which is the main livelihood occupation. This finding is in line with the findings of Saha (2008)^[6].

Land holdings

A close reflection of Table 1 indicated that two-fifth (40.00%) were small farmers followed by semi medium (25.56%), medium farmer (15.56%), marginal farmers (14.44%) and big farmers only (4.44%) for Vijayapura district. In Bagalkote district, comparatively higher percentage (32.22%) were medium farmers followed by small farmer (24.44%), semi medium farmer (20.00%), big farmer (13.34%) and marginal farmer only 10.00 percentage. A little difference trend in Gadag district indicated that majority (42.22%) were semi medium farmers, followed by medium farmers (27.78%), then followed by small farmers (20.00%), marginal farmers (8.89%) and big farmers only 1.11 percentage.

In the overall land holding category, 29.28 per cent of the onion growers belonged to semi-medium farmers category

closely followed by (28.14%) small farmers; then followed by medium farmers (25.18%); marginal farmers (11.10%) and big farmers (6.29%) only. The reason for possession of higher per cent of medium and semi-medium land holdings cumulatively (54.46%) and small (28.14%) could be due to fragmentation of lands because of division of families. Borkar (2008)^[2] found the similar type of finding.

Occupation

Occupation of onion growers from Table 1 revealed that majority of them had agriculture as the main occupation in all the districts. A very few farmers had other allied activities like goatry, poultry, dairy, business, labour and service along with agriculture.

In the overall summary of occupation almost two third (65.55%) of onion growers were exclusively depending on agriculture only, followed by agri and goatry (8.51%), agri and business (6.66%), agri and labour (6.29%) and agri and dairy (5.55%). Only sizable respondents were depending upon agri and service (4.48%). Very small quantum of respondents was doing agri and poultry (2.96%) as occupation.

The sole dependence of exclusively cultivation on agriculture could be attributed to rainfed farming and dry farming existed in study area of dry zone. The exposure to another component of mixed farming is far less. This could be attributed to lack of courage to take risk in dry land farming on account of monsoon vagaries followed by lack of knowledge and to update to present expected contingent occupations. Similar findings were supported by the results of Borkar (2008)^[2].

Farming experience in onion cultivation

The close perusal of Table 1 revealed that majority of onion growers had medium experience in onion cultivation followed by low and high per cent age in all the three districts as (50.00%, 33.33% and 16.67%) for Vijayapura, (45.56%, 36.67% and 17.78%) for Bagalkote and (48.89%, 40.00% and 11.11%) for Gadag district, respectively. The overall data revealed that experience in onion cultivation was possessed by 48.12 per cent in medium category followed by less experience 36.67 per cent and high experience by only 15.21 per cent. Just like groundnut as it is called unpredictable legume on account of its own characteristic responses to varied agroclimatic conditions, the bulb crop onion is also unpredictable crop because of its own special characteristic behaviour to vagaries of monsoon. So, majority of old and young farmers were not taking risk to continue onion cultivation. (Maraddi 2006)^[4].

Annual Income

Data in Table 1 enlightened that better per cent age (43.33%) of onion growers were in high income group followed by low (36.67%) and medium (20.00%) in come group, respectively as far as Vijayapura district is concerned. But in Bagalkote district majority were found in low-income group (47.78%) followed by high (32.22%) and medium (20.00) income groups, respectively. Gadag district showed majority (48.89%) in low in-come group followed by medium (27.78%) and high (23.33%) income group, respectively.

The overall data of annual income showed that 44.44 per cent of the onion growers belonged to lower income group followed by 32.97 per cent were in higher income group and 22.59 per cent of onion growers were in the medium income group. The reason for low annual income could be medium yield and urgency for selling and get money, less prices for

their produce due to lack of onion storage and marketing facilities. The finding is in contrary with the findings of Sasane (2010)^[7].

Extension contact

It is accounted from the table 2 that onion growers had medium (45.18%) to high (32.96%) level of extension contact then followed by low level (21.85%). This could be due to the reasons that anxiety to learn and update to new technologies of onion cultivation by discussing with friends, relatives, progressive farmers. Also, the use of mobile apps, agro advisory services, use of e-tools such as WhatsApp, e audio/video/ images as more than 50.00 per cent had education above high school level and nowadays use of mobile and WhatsApp have become user friendly. The results are supported by the findings of Sasane (2010)^[7].

Table 2: Distribution of the onion growers according to their extension contact, N=270

SL. No.	Category	Frequency of contact	
		F	%
1	Low (< 22.49)	59	21.85
2	Medium (22.50-26.14)	122	45.18
3	High (26.15 and above)	89	32.96
	Mean	24.32	
	SD	04.31	

Extension participation: The results from table 3 depicted about extension participation of onion growers and revealed that majority of onion growers belonged to the medium (43.33%) to high level (36.30%) of extension participation then followed by low level (20.37%).

The reason could be majority of onion growers were interested in sustainable onion cultivation and must have eagerly participated to gain knowledge and to have first-hand information. This was reflected in overall index of participation in extension activities like Krishi / totagarika mela (74.57%), exhibitions (63.83%) and training programme (63.83). The participation in such extension activities provide first hand material, hands on experience and also many sources of advanced and improved agricultural practices prevailing in their region or locality. The results are in line with the findings of Baraker (2018)^[1].

Table 3: Distribution of onion growers according to their extension participation, N=270

Sl. No.	Category	Frequency of participation	
		F	%
1	Low (< 15.54)	55	20.37
2	Medium (15.55 -17.35)	117	43.33
3	High (> 17.36)	98	36.30
	Mean	16.45	
	SD	02.14	

Table 4: Distribution of onion growers according to mass media participation, N=270

Sl. No.	Category	Frequency of use	
		F	%
1	Low (< 34.45)	41.00	15.19
2	Medium (34.46 – 37.84)	135.00	50.00
3	High (> 37.85)	94.00	34.81
	Mean	36.20	
	SD	3.89	

Mass media participation

The data in table 4 revealed that half (50.00%) of the of onion growers had medium level of participation in mass media, while 34.81 per cent of them had high participation and only 15.19 per cent of onion growers had low level of participation in mass media. The possible reasons could be that mass media provides latest updates in variety of fields including agriculture which in turn help onion growers to update themselves with latest technologies. Mass media like TV, mobiles provide photos, videos, live demonstrations which help onion growers to understand latest technologies as it provides contrived experience. Nagadev and Venkataramaiah (2007)^[5] reported the similar results in their study that majority of the farmers belonged to mass media utilization.

Table 5: Distribution of onion growers according to access to e-tools, N=270

SL. No.	Category	Frequency of use	
		F	%
1	Low (< 54.85)	86	31.85
2	Medium (54.85-59.88)	104	38.53
3	High (> 59.89)	80	29.62
	Mean	36.20	
	SD	3.89	

Access to e-tools

The results in Table 5 are interesting as it revealed about distribution onion growers according to their access to e-tools. It was observed that 38.53 per cent, 31.85 per cent of 29.62 per cent of onion growers fall under medium, low and high category with respect to e-tools. Even though they had better accessibility to e tools, they use these tools for entertainment purpose rather to collect agriculture information. These e-tools are user friendly, and many are educated more than graduate and above, they might be making use of these e tools to collect and apply recent technologies in their fields. Similar result was reported by Vasanthi (2020)^[8] in her study.

Conclusion

Profile characteristics onion growers such as age, education, annual income, extension contact, extension participation influence onion growers in the onion cultivation. Because onion growers get exposure, experience and based on that they make decisions in onion cultivation. Hence, it is necessary to study these profile characteristics and researchers make use of these results of their characteristics in their extension activities, programmes etc.

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