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Socio-economic status of the litchi growers in Jammu and Kathua Districts of Jammu Region

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Abstract
The sampled families in the current study were chosen using a Purposely non random sampling methodology from two districts in Jammu Region. A sample of 99 responded was drawn purposely. The results revealed that overall age of litchi farmers 55 years and that majority of the litchi farmers was 12th pass out with average litchi farming experience of 13 years. The average operational size of land holding of litchi farmers in kathua was 1.507 ha and in Jammu it was 1.307 ha. Majority 64 per cent of the farmers had marginal land holding. Canal was the main source of irrigation for litchi farmers 80 per cent. Majority 59 per cent of the respondents had agricultural as their main occupation. Department of horticultural was observed the main source of information for 100 per cent of litchi farmers.

Keywords: Socio-economic status, Cube root cumulative frequency method, households, remunerative price

Introduction
The Litchi (*Litchi chinensis Sonn*.) is a Sapindaceae family member and is generally known as the "Queen of Fruits". Litchi originated in South China and North Vietnam approximately 1500 BC and spread to other countries. South-East Asian countries produce the most litchis globally, followed by China, India, Vietnam, and Thailand (Sahni *et al*., 2020) [4]. Litchi is high in carbohydrates and fibre while being low in fat and protein. It is also known for its nutritional merits; in fact, these litchis are exceptionally rich in nutrients, critical substances with additional health benefits beyond the basic nutritional value of food. The fruit's health benefits are linked to its higher availability of micronutrients such as carotenoids, magnesium, iron, phosphorus, zinc, manganese, and copper (Emanuele *et al.*, 2017) [2].

Agricultural growth Gardening has all the time improved the economic position of our farmers. The former seasonal availability of fruits and vegetables has now been extensive to year-round, increasing per capita fruit and vegetable use. It also plays an important position in empowering women by provided that employment opportunities through mushroom cultivation, flower cultivation, processing, nursery cultivation, vegetable seed production, etc. The national aim of 4per cent growth in agriculture can be achieve throughout a extensive contribution to the increase of horticulture (Choudhary, 2021) [1].

Due to its climate concern, the cultivation of litchi is restricted to a small number of states, with Bihar, West Bengal, and Jharkhand accounting for 66per cent of the nation's total output. The litchi crop mostly aids small and marginal farmers in generating some extra money from their farms. Many people in the states where the production of litchi is rising rely on it for their livelihood since it provides both on- and off-farm work opportunities. The state of litchi cultivation in India has been reviewed in the current study (Kumar *et al.*, 2020) [4].

The litchi is the fruit that God has made that is the most flavourful and beautiful. And Robert Sparks Walker, a writer on nature in modern times, claimed that the litchi is "the precious and daintiest stuff which is covered by nature hands," calling it "delicate daintiest package that have covered by hands of nature" (Priyadarshi *et al*., 2017) [5].

In Jammu & Kashmir, Litchi is cultivated in outmost 0.930 thousand hectares of area with a 2.253 tons of total production (2017). (www.ceicdata.com) the maximum production in litchi is from district Jammu (847 MT) followed by Kathua (583 MT), Reasi (232 MT), Udhampur (163 MT), and Samba (138MT), (Department of Agriculture and cooperation).

Materials and Methods

List of Litchi growers from the districts of Jammu & Kathua has been procured from chief horticulture offices from both the districts. As per the list, total 99 numbers of litchi growers are practicing litchi cultivation & the area under litchi cultivation ranges from 0.25ha to 3ha. As such all the 99 litchi growers will be taken purposively for the study from both the districts. Using a Purposively Non random sampling technique, Singh cube root method in 1975, Singh gave a method to categorize group data into various categories known as Singh' s cube root method and gave a formula.

S1 = L1 + N/2-Ci-1×h f1

Where,

I = Indicate category number (I= 1, 2, 3, n).

S_1 = Segment (e.g. I, II, III).

L_1 = Lower limit of the quartile class.

C_{i+1} = Cumulative frequency of the class preceding to the quartile class.

F = Frequency.

H = Width of the quartile class.

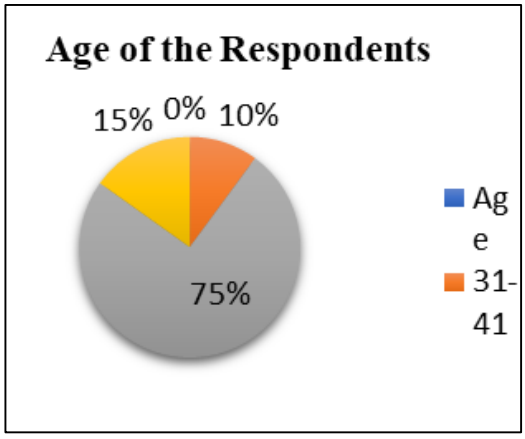
N = Total cumulative cube root of frequencies.

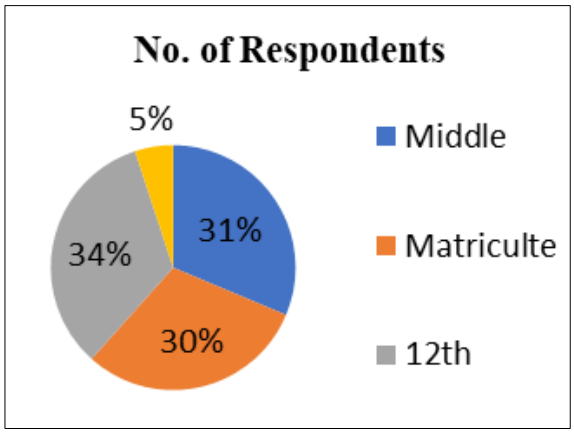
Results and Discussions

The sampled farmer's socio-economic status has a significant impact on capital use, which also determines the size and efficiency of the labour force. It was observed that the overall average age of litchi farmers in two districts was 55 years (±9.98). Overall, 33.00 per cent of sampled litchi growers in two districts, Kathua and Jammu, were 12th pass out. The overall average experience of litchi growers in litchi cultivation in all two districts was 11 years (±3.21). According to the Singh's Cube root method (1975), 54.00 percent of litchi growers had a family size of (5-7 members). In two districts, Kathua and Jammu, the overall percentage of joint families and nuclear families was 61.00 percent and 39.00 percent, respectively.

Table 1: Farmers socio-economic status

Parameter	Kathua (N=19)	Jammu (N=80)	Overall (N=99)
Mean age (In Years) ±S.D	54.26±13.06	56.062±8.903	55.71±9.98
Categorization of age (Per Cent Farmers)			
31-41 (years)	5 (26)	5 (6)	10 (10)
42-66 (years)	12 (63)	62 (78)	74 (75)
67-72 (years)	2 (11)	13 (16)	15 (15)
Mean education (In years)	10.36±2.310	10.262±1.887	10.272±1.963
Illiterate	0	0	0
Below primary	0	0	0
Primary	0	0	0
Middle	7 (37)	24 (30)	31 (31)
Matriculate	5 (26)	25 (31)	30 (30)
12th	5 (26)	28 (35)	33 (33)
Graduation and above	2 (11)	3 (4)	5 (6)
Average farming experience (In years)	27.789±9.710	29.65±6.258	29.29±7.03
Average litchi farming experience (In years)	13.36±4.54	11.46±2.71	11.83±3.21
Average Family size	4.26±1.66	5.41±1.32	5.19±1.46
2-4 Members	12(63)	29 (36)	41(41)
5-7 Members	6(32)	47(59)	53(54)
8 Above member	1(5)	4(5)	5(5)
Family types			
Nuclear	10 (53)	50 (63)	60 (61)
Joint	9 (47)	30 (37)	39 (39)





The aggregate average operational land holding of litchi growers in two districts was 1.12 hectares. 64.00 per cent of respondents were marginal farmers (1 ha), 30.00 per cent were small farmers (1-2 ha), and 6.00 per cent were semi-medium (2-4 ha). In terms of farm size under litchi cultivation, 80.00 per cent of litchi growers had farm sizes ranging from (0.25 to 1.00 ha), 19.00 per cent were cultivating litchi on more than (1.00-2.00 ha), and the remaining 1.00 per cent had farm sizes greater than (2.00 ha).

Table 2: Land holding and farm size detail of the respondents

Parameter	Kathua (N=19)	Jammu (N=80)	Overall (N=99)
Land holding (ha)			
Average operational land holding (ha)	1.50±0.69	1.037±0.55	1.12±0.61
Owned (ha)	1.507±0.691	1.037±0.550	1.12±0.61
Irrigated (ha)	1.507±0.691	1.037±0.550	1.12±0.61
Average litchi Land holding	0.989±0.452	0.848±0.431	0.87±0.44
Categorization of total farm size (Per Cent Farmers)			
Marginal (< 1 ha)	8(43)	55 (69)	63 (64)
Small (1-2 ha)	9 (47)	21 (26)	30 (30)
Semi- medium (2-4 ha)	2 (10)	4 (5)	6 (6)
Categorization of farm size under litchi cultivation (per cent farmers)			
0.25-1 ha	15 (79)	64 (80)	79 (80)
1-2 ha	4 (21)	15 (19)	19 (19)
> 2 ha	0	1 (1)	1 (1)

Table 3: Sources of irrigation of the respondents

Source of irrigation	Kathua (N=19)	Jammu (N=80)	Overall (N=99)
Canal	12 (63)	67 (83)	79 (80)
Electric pump	4 (21)	37 (46)	41 (41)
Diesel pump	14 (73)	36 (45)	50 (50)

That the overall 80.00 per cent litchi growers had canals as their source of irrigation followed by diesel pump 50.00 per cent and electric pump set 41.00 per cent.

According to the findings in agriculture was the sole occupation of 59.00 per cent of litchi growers. The results also revealed that the remaining 41.00 per cent of litchi growers had other sources of income, which included Agriculture + Business employee 14.00 per cent, Agriculture + Private 11.00 per cent, Agriculture + Government retired employee 10.00 per cent, and Agriculture + Government employee 6.00 per cent.

Table 4: Occupational status of the respondents

Occupation	Kathua (N=19)	Jammu (N=80)	Overall (N=99)
Agriculture only	8 (42)	50 (63)	58 (59)
Agriculture + Private	3 (15)	8 (10)	11 (11)
Agriculture + Business	4 (21)	10 (12)	14 (14)
Agriculture + Government	1 (5)	5 (6)	6 (6)
Agriculture + Government retired	3 (15)	7 (8)	10 (10)

According to the data in all of the sampled litchi growers had extension contact with the Horticulture Department, followed by 78.00 per cent who had contact with the Krishi Vigyan Kendra (KVK), 61.00 per cent who had contact with the Agricultural University (SKUAST-Jammu), and 37.00 per cent who had contact with input dealers.

Table 5: Extension contact of the respondents

Extension Contact	Kathua (N=19)		Jammu (N=80)		Overall (N=99)	
	Yes	No	Yes	N0	Yes	N0
Horticulture Department	19 (100)	0	80 (100)	0	99 (100)	0
Agricultural university (SKUAST-Jammu)	6 (31)	13 (68)	55 (68)	25 (31)	61 (61)	38 (38)
KVK	11 (57)	8 (42)	67 (83)	13 (16)	78 (78)	21 (21)
Input dealers	10 (52)	9 (47)	27 (33)	53 (66)	37 (37)	62 (62)

According to data presented in Table overall 71.00 percent of litchi growers used television as their primary source of mass media communication for getting litchi information, followed by 47.00 percent who visited Kisan Mela, 34.00 percent who read newspaper, 18.00 percent who used youtube, 9.00 percent who visited exhibitions, 5.00 percent who listened radio, and 1.00 percent who read agricultural magazines for litchi information.

Table 6: Mass media exposure of the respondents

Mass media	Kathua (N=19)		Jammu (N=80)		Overall (N=99)	
	Yes	No	Yes	No	Yes	No
Radio	0	19 (100)	5 (26)	75 (93)	5 (5)	94 (94)
T.V.	16 (84)	3 (15)	55 (68)	25 (31)	71 (71)	28 (28)
Newspaper	6 (31)	13 (68)	28 (35)	52 (65)	34 (34)	65 (65)
Agricultural Magazines	1 (5)	18 (94)	0	80 (100)	1 (1)	98 (98)
Exhibitions	2 (10)	17 (89)	7 (8)	73 (91)	9 (9)	90 (90)
Kisan-mela	12 (63)	7 (36)	35 (43)	45 (56)	47 (47)	52 (52)
You-tube	3 (15)	16 (84)	15 (18)	65 (81)	18 (18)	81 (81)

Conclusions

There was in case of overall age 55 years, 29 years average farming experience, 11 years average litchi farming experience. The average operational size of land holding of litchi farmers in Kathua was 1.507 ha and Jammu was 1.037 ha. Categorization of respondent farmers on the basis of size of land holding, 64 per cent of litchi farmers were marginal farmers, 30 per cent farmers were small farmers and 6 per cent farmer were semi- medium farmer. Canal was observed as the main source of irrigation for litchi farmers 80 per cent. Majority 59.00 per cent of litchi growers had agriculture as their main occupation. Horticulture Department was observed to be the main source of information for all litchi farmers followed by Krishi Vigyan Kendra (KVK) 77.00 per cent of Jammu and Kathua districts, SKUAST-Jammu 53.00 per cent, fellow farmers 22.00 per cent and neighbours 15.00 per cent only. Majority 71.00 per cent of litchi growers used television as main source of mass communication or getting litchi information followed by 47.00 per cent respondents who visited Kisan-Mela.

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