Socio-economic characteristics of guava orchardists in Western Uttar Pradesh

Abstract

This study was conducted in two blocks i.e., Baghara and Charthawal of Muzaffarnagar district of Western Uttar Pradesh during the year 2018-19. To know the socio-economic characteristics of guava orchardists for this investigation data was collected from 80 guava orchardists through personal interviews. It was found that the majority of guava orchardists (43.75 percent) belongs to higher medium age group ranging between 46 to 60 years of age, (22.50 per cent) respondents were having educational status up to high school, (70.00 per cent) orchardists were belonging to other backward caste category, (91.25 per cent) orchardists were married, (91.25 per cent) orchardists were engaged in agriculture as the main occupation, 60.00 per cent orchardist's were living in joint family, (48.75 per cent) guava orchardists were belong to medium family category 5-8 members including their family, (63.75 per cent) were having membership of one organization, (78.75 per cent) orchardists were had pucca house, (51.25 per cent) orchardists were having land (above 04 ha.), majority of the respondents (60.00 per cent) were having medium level of family resources (between 6-10), (90.00 per cent) were having motor cycle/ Scooty as transportation facility, (43.75 per cent) were having low level of farm assets (below 6), (68.75 per cent) orchardists were having private electric tube well as a source of irrigation, (81.25 per cent) were having medium level of information sources (Between 7-12 sources) in research study area. The majority (53.75 percent) of guava orchardists' annual income wasabove Rs. 2,00,000.

Key Words: Guava Orchardists, Socio-economic characteristics

Introduction

Guava (*Psidium guajava*L.) belongs to family Myrtaceae is one of the cherished fruits of India and is aptly called the Apple of Tropics and Poor man's apple. It is native to Mexico, Central America and Northern South America. Of its high adaptability to varied soil and climatic conditions along with its hardy nature, it has acclimatized to Indian conditions within a short period of time. This fruit has gained considerable prominence in our country in

general and the state of Uttar Pradesh in particular on account of its high nutritive value, pleasant aroma and availability at moderate price.

Guava besides being a wholesome fruit is a storehouse of pectin, minerals (Ca P and Fe) carbohydrates, fiber, riboflavin, thiamine and vitamin C. The fruit is used to prepare jelly, jam, nectar, juice, pie, cake, stewed and preserve. Fresh fruit of guava contains 100 to 260 mg Vitamin C of per 100g of its pulp and it is not lost during preservation. The total area and production of guava in the country are 265 thousand hectares and 40,54 thousand metricstons. Guava is successfully grown all over the country and Uttar Pradesh is the most important guava-producing state of the country and Allahabad has the reputation of growing the best guava in the country as well as in the world. Uttar Pradesh is the largest producer of guava viz; 914.94 thousand metricstons from an area of 49.01 thousand hectares followed by Madhya Pradesh 523.75 thousand metric tons in 30.31 thousand hectares. **(National Horticulture Board 2017-18)** Production of guava in high-density planting (1.5×3.0 m) is 26 tons per hectare during third year. The yield goes up to 47 tons/ha during the fifth and 55 tons/ha during the seventh year of growth. At spacing of 6.0×6.0 m, the 6 tons/ ha yield is obtained. The meadow orchard system is more beneficial than any other system. In this system, the production starts from 2^{nd} year itself giving an average yield of 13 tons/ ha which doubles during the next year. In the 3^{rd}/ and 5^{th} year yield is approximately 40 and 60 tons/ ha, respectively. This clearly shows that the meadow orchard system is better than other planting systems.

Los impactos de los cambios climáticos, derivados principalmente del calentamiento global, amenazan con afectar las condiciones socioeconómicas de la población, especialmente de aquella cuyos medios de vida dependen del aprovechamiento de los recursos naturales y de las actividades agropecuarias **(Forero, 2002; Olivares, 2014).**

Es por ello, que fortalecer los sistemas agrícolas familiares de indígenas, afrodescendientes y campesinos supone el reconocimiento de otras formas de conocer, manejar, utilizar e interpretar la naturaleza, que por cierto han demostrado ser la única forma probada de utilizar frágiles ecosistemas tropicales con cierta factibilidad ecológica ante el fracaso demostrado por el “conocimiento científico” y el proceso civilizatorio occidental. Será fundamental el rol del conocimiento tradicional en programas de manejo, conservación y evolución del patrimonio genético del país al darle continuidad a los sistemas históricos de domesticación,

selección, mejoramiento, renovación y diversificación de especies **(Olivares y Franco, 2015).**

Para este fin se utilizó una guía de entrevista, la cual facilitó la labor de investigación. La información cuantitativa estuvo enmarcada dentro de aspectos sociales, culturales y económicos siguiendo los lineamientos propuestos por **Mosquera (1983) y Olivares et al. (2012).**

Para la caracterización de los paisajes agroalimentarios de cada una de las etnias indígenas abordadas, se utilizó el estudio sobre la Definición y caracterización de unidades agroecológicas al Norte del río Orinoco de Venezuela (Instituto Nacional de Investigaciones Agrícolas. INIA, 2016) automatizada en el Sistema de Información de las Áreas Agroecológicas (SIAA), el cual es un sistema automatizado que contiene en formato digital la información espacial y atributiva de las áreas agroecológicas de Venezuela a escala 1:250.000; bajo el Sistema de Información Geográfico ARC View v.3.2. **(Arcview GIS, 1996) y el Programa Visual Fox Pro v.5.0 (Microsoft, 1996) (Rey et al., 2000; Rodríguez et al., 2003).**

The economic importance can be evaluated from many perspectives: from its uses, from the volume and value of the raw material, and from the outlays for guava research and agricultural outreach services. The increased guava production in Brazil is related not only to the growing consumption of fruit in its fresh form, but also products originating from its industrialization (Quintal et al. 2017). Many food industry products contain guava, such as juice, nectar, pulp, jam, jelly, slices in syrup, fruit bar, dehydrated products, additive to other fruit juices and its consumption as fresh fruit, guava has attained real economic importance in all the world's tropical and subtropical regions **(Kadam et al., 2012; Leite et al. 2006).**

En el caso particular de Carabobo, se consideran zonas de mejores condiciones agropecuarias donde se presentan de cuatro y cinco meses de Lluvia continua, de éstas, se excluyen las zonas con pendientes abruptas y/o suelos con limitado potencial agrícola (Rodríguez et al., 2013). No obstante, las zonas con tres meses de lluvia continua pueden utilizarse para agricultura solo en casos donde se cuente con sistemas de riego, así como las que se localicen en planicies o piedemonte y presenten suelos de clase I, II y III **(Cortez et al., 2018).**

En este sentido, para caracterizar y comprender de manera directa la estructura y correlaciones existentes entre las variables que definen los sistema de producción agrícola es

posible emplear análisis multivariados como el método de Análisis de Componentes Principales (Cuadras, 1992; **Demey et al., 1994).**

Desde hace varias décadas, en Venezuela, el método tiene aplicación en diversas áreas relacionadas al diagnóstico y predicción en los agroecosistemas así como otros aspectos como la delimitación de patrones de precipitación **(Olivares et al., 2012; Vicario et al., 2015).**

Research carried out globally on the ability to forecast the degree of food insecurity in indigenous agricultural territories is based on the establishment of different early warning systems (EWS). They are represented by environmental indicators considered as the basic elements of the crises generated due to extreme weather events such as: droughts **(Paredes-Trejo and Olivares, 2018., Cortez et al., 2018), floods (Olivares y Hernandez, 2019).**

Justification: -

Guava production technology is never completely accepted by the growers in all aspects. In such ways they always face constraints in the adoption of recommended technology. There is a need to do more efforts in the study area as well as in the country to increase production and improve its quality. If we want to increase the production of guava as well as its quality, we should give the focus on the adoption of recommended guava production technology. Adequate knowledge of recommended technology is a pre-requisite for the adoption of innovations. The proposed study will help to orchardists to solve their constraints which come in the adoption of improved package of practices of guava and its export quality. An attempt will be made to study the present status of guava orchardists in a very comprehensive manner along with the present knowledge level of guava growers and constraints being faced by them regarding the guava production technology. It is necessary that a recommended technology transferred by the scientists need to be done systematically to know the present level of knowledge and adoption of guava production technology and the constraints being faced during adoption, so that its production in the region can be increased.

This would be conducive to planners, administrators, extension workers and non-govern mental organization personnel to do the sincere efforts in promotion of knowledge and adoption level in management practices of guava cultivation It will also focus the new dimension of research to futuristic researchers engaged in the field of extension education.

Research Methodology:

Thisstudy was conducted in Muzaffarnagar district of Western Uttar Pradesh. The district comprises of 9 blocks one of which, two blocks Baghara and Charthawal were selected for the study purposively on the basis of the maximum area under guava cultivators and availability of maximum guavacultivators. From each block four villages were selected purposively thus the a total 8 villages were selected for the investigation and from each village 10 respondents were selected purposively. Thus, the total sample size was 80 respondents for the investigation. The data was collected through personal interviews with the help of a pre-tested interview schedule. The data was analyzed and used appropriate statistical techniques.

1. Tabular analysis:

For comparison and interpretation of various aspects, knowledge, adoption, and constraints responsible, tabular analysis was used.

2. Percentage:

Simple comparison has been made on the basis of percentage. For obtaining percent, the frequency of a particular cell was multiplied by 100 and divided by the total number of orchardists in that particular category to which all of them belonged. The formula used to calculate the percentage is given below-

$$\text{Percentage} = \frac{\text{Frequency}}{\text{Number of respondent}} x\ 100$$

3. Mean (Average):

The mean ($\overline{X}$) was calculated by adding the total scores obtained by the respondents and divided it by the total number of respondents using the following formula:

$$(\overline{X}) = \frac{\sum X}{N}$$

Where,

($\overline{X}$) =Average or mean

$\sum$x=Total number of scores obtained by respondents

N= Total number of respondents

4. Rank order:

The various ranks were given on the basis of the highest to the lowest frequency.

5. Standard Deviation (SD):

S.D. is the square root of the mean of the squares of all deviations, the directions being measured from the arithmetic mean of the distribution. It is commonly developed by the symbol sigma (σ).

$$\sigma = \sqrt{\frac{1}{N}\sum_{i=1}^{N}(x_i - \overline{x})^2}$$

Where,

σ = Standard deviation

d = Deviation from variables mean

n = Total number of items

Result and Discussion:

The Socio-economic status of the guava orchardists includes the personal profile of orchardists in terms of their age, education, caste, land holding size, housing pattern, social participation, annual income, marital status and occupation of the orchardists, social and economic factors.

The findings related to different aspects of socioeconomic characteristics were presented in Table-1.

Table-1: Distribution of the guavaorchardists according to their socio-economic characters.N = 80

socio-economic characteristics of guava growers	**Particulars**	
	F	**%**
Age		
Young age group (below 30 years)	9	11.25
Lower medium age group (31-45 years)	28	35.00
Higher medium age group (46-60 years)	35	43.75
Old age group (above 60 years)	8	10.00
Education		
Illiterate	02	2.50
Can read only	02	2.50
Can read & write	06	7.50
Primary school	06	7.50
Junior High School	07	8.75
High school	18	22.50
Intermediate	13	16.25
Graduate	16	20.00
Post-graduate and above	10	12.50
Caste		

Upper caste (General)	19	23.75
Middle caste (OBC)	56	70.00
Lower caste (SC/ST)	05	6.25
Marital status		
Married	73	91.25
Unmarried	7	8.75
Main Occupation		
Caste based occupation	-	-
Business	2	2.50
Cultivation (Agriculture)	73	91.25
Service	5	6.25
Type of family		
Nuclear family	32	40.00
Joint family	48	60.00
Size of family		
Small family (1-4 members)	15	18.75
Medium family (5-8 members)	39	48.75
Large family (More than 8members)	26	32.50
Social Participation		
No. member of any organization	15	18.75
Member of one organization	51	63.75
Member of more than one organization	10	12.50
Office Holder	7	8.75
Distinctive feature	6	7.5
Housing pattern		
Kachaha house	03	3.75
Mixed (Kachcha + Pucca)	14	17.50
Pucca	64	78.75
Land holding		
Marginal farmers (below 01 ha.)	2	2.50
Small farmers (01-02 ha.)	7	8.75
Medium farmers (0 2-04 ha.)	30	37.50

Large farmers (above 0 4 ha.)	41	51.25
Family resources		
Up to 6 materials	2	2.50
6-10 materials	48	60.00
Above 10	30	37.50
Transportation facility		
Bullock cart (jhota- buggy)	65	81.25
Cycle	68	85.00
Motorcycle/Scooty/Scooter	72	90.00
Tractor trolly	51	63.75
Car/Jeep/Taxi	49	61.25
Any other (Bus/truck)	15	18.75
Farm machineries		
Below 6 (assets low)	35	43.75
Between(6-12assets medium)	33	41.25
Above 12 (assets high)	12	15.00
Irrigation facilities		
Govt. electric tube well	2	2.50
Private electric tube well	55	68.75
Tube well diesel engine	5	6.25
Canal	12	15.00
Ponds	4	5.00
Any other specify	2	2.5
Source of information		
Information low (below 6 sources)	8	10.00
Information medium (between 7-12 sources)	65	81.25
Information high (Above 12 sources)	7	8.75
Annual Income		
Below RS. 50,000	4	5.00
RS. 50,000- 1,00,000	9	11.25
RS. 1,00,000- 1,50,000	11	13.75
RS. 1,50,000-2,00,000	13	16.25

Above 2,00,000	43	53.75

The table-1, reveals that the majority of guava orchardists (43.75 percent) were belonging to medium age group ranging between 46 to 60 years of age, similar findings were reported by **Mehta and Sonawane (2012)**. The maximum number of respondents (22.50 percent) were having educational status up to high school,similar findings were reported by **Tekale and Gavit (2013)**. Most of the orchardist's 70.00 percent were belonging to another backward caste category, similar findings were reported by **Singh *et al.* (2017)** and most of the orchardist's 91.25 percent were married in the study area. Agriculture was the main occupation of the orchardist's 91.25 percent and (60.00 percent) of orchardists were living to joint families while48.75 percent guava orchardists were belonging to the medium family category 5-8 members including their family. The maximum number of respondents (63.75 percent) were having members of one organization. The majority of orchardists (78.75 percent) were having pucca houses and (51.25 percent) of respondents were having (above 4 hac) of land in the study area. The majority of the respondents (60.00 percent) were having medium level of family resources (between 6-10) and (90.00 percent) of respondents were having motor cycle/ scooter as transportation facilities. The majority of the respondents (43.75 percent) were having low level of farm assets (below 6) and majority of the orchardists (68.75 percent) were having private electric tube well as a source of irrigation while, 81.25 percent respondents were having medium level of information sources (between 7-12 Sources). The majority(53.75 percent) guava orchardists'annual income was of Rs. 2,00,000similar findings were reported by **Tekale and Gavit (2013)**.

Conclusion:

It may be concluded that most of the guava orchardists were belonging to higher medium age group, had education upto high school, belongs to backward caste, married, their main occupation was agriculture, living in jointly belong to medium family size, having pucca houses, most of them belongs to semi medium farmers category, most of them having membership of one organization,having medium level of sources of transportation, implements and information. Most of the guava orchardists annual income was upto 2 lacks.

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