Black pepper cultivation in vellamcode village

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Abstract:

In this article based on black pepper cultivation in vellamcode village at Kanyakumari District in Tamil Nadu. Black pepper is one of the major crops in Kanyakumaridistrict at vellamcode village. Peppers so many varieties as one is black pepper. Black pepper is most useful in the market at the same time medical benefits in the human life. In this article based on primary data and secondary data collection are used and black pepper cultivation overview in the vellamcode village. Black pepper usages and types. Area wise and global level black pepper cultivations and market trend. India has been known as the Land of spices even from pre-historic times. The Chinese Arabs and the European came to the shores of India Lured by the spices produced hence pepper is also known as "BLACK GOLD". An attempt has been made in this article to analyze the socio economic characteristics of sample respondents. The entire analysis is centered on age, sex and Income groups, and level of satisfaction in the cultivation of black pepper in vellmcode village. Research design used statistical tools and techniques are used. Chi-square test and tabulation module are prepared. And Hypothesis is framed on the basis of the objectives in the present article. There is no relationship of age and income respondents and no relationship of sex and satisfaction pattern of respondents.

Keywords: Black Pepper, vellamcode, cultivation, production, Medical benefits.

1. INTRODUCTION:

Black pepper is one of the popular spices and known as "king of spices". This spice was originated from Western Ghats of India. In India, black pepper is mainly grown in Kerala, Tamil Nadu, Karnataka, Konkan, Pondicherry and Andamon and Nocobar Islands. India is #1 producer, consumer and exporter of black pepper in the world. Kerala itself produces 90% off total production of black pepper. This spice has good economic importance due to its earnings of exports from Foreign exchange. This spice is also called as "Black gold" due to its International trade factor. This spice botanical name is "piper nigrum" and belongs to the family of "piperaceae".

2. STATEMENT OF THE PROBLEM:

The price of pepper is ever fluctuating even thought the demand for it is state. However there was no increase in the area, under pepper cultivation in the study area for the past year and the supply of pepper to

makeup this deficit. Pepper was imported from other states and from abroad this may lead to production in the ultimate consumer's price and as a consequence the demand for pepper, may decrease. This may affect the production of pepper as well as the income of the cultivators which tends to reduce the area under pepper cultivation.

The cultivation depends largely on pepper for their income. However they face two important

Problem one is related to production [Higher production cost] and the other to marketing [Exploitations of the traders]. It these problems continue it will tend to have a further shrinking in the area of pepper cultivation.

3. SCOPE OF THE STUDY:

At this study focuses attention on the economics of pepper cultivation the government could involve in various to increase the production of pepper. This will automatically increase the income of the cultivator and will given boost to being large area under pepper cultivation and the block economy will be developed.

4. OBJECTIVES:

1. To assess the cost of cultivation of pepper.
2. To identify the important factors limiting pepper production.
3. To known the profit earned in pepper cultivation.

5. REVIEW OF LITERATURE:

Review of literature is needed for making a worthwhile contribution to the filed in which the study is under taken. Review of related literature is essential to keep updating, the filed of frontiers of his/her field. Through analyzing related research on learn procedures and instruments which have proved useful.

A review of post studies help to understand the scope of the present study and provides the frame work for analysis and drawing conclusion. This attempt is useful to identify the existing research gaps. The study of related literature place the researcher in a better position of interprets the significance of the results obtained by him. Further review of literature helps in understanding the nature of the research investigation and provides evidence that the researcher is familiar with what has been already known. As the effective research is based upon the post knowledge a survey of post literature, help to eliminate the duplication of what was already done brief resume of various related literature is presented in this chapter.

In this article **"Getting Black in Spice Trade" (2000)** "Petter K.U" expresses how the India council of Agricultural research through its national research centre for spice based at Calicutt determines to meet the challenge of coiling back in the centre of diversely for Black pepper cardamom, Ginger, Turmeric and to some extent cinnamon.[1]

"Vijayakumar and Mammen" (2000) In their article says that black pepper is a day natural plant and the vines exposed to divert solar radiation developed physiological disorders moisture conditions.[2]

"Nambiar" (2000) In this article says that to protect the pepper vines from heat during summer and to avoid sail less due to run off during rainy season mulching is essential Digging twice a year and providing so much is optimum to maintain the health and yield of black pepper vines.[3]

"Palaniyappan.K" (2001) In this study on "Spices Exports A Lost Glory" how do we regain Express that no other country in the world has such a diverse variety of spices, crops as India. In the account world. Trade in spices amounting to over Rs.500 corers amounting to spices exports during 1999-2000 hardly touched Rs.362 corers during 2000-2001 is feared to slide down.[4]

"Sukumari.P" (2001) In her articles "Common method of pepper cultivation" indicates that pepper is one of the important crops of Kerala pepper cultivation in Kerala goes black to a long period in the history. It is for the trade of pepper is known as black gold as well as king of spices. In India pepper cultivated is largely concentrated in Kerala. Most of the large scale pure plantations are seen in northern Kerala.[5]

"Franked and Galun" (2001) In their article examines since pepper is mostly dioecious in while state cross pollination is essential for sexual reproduction in which types cultivated pepper, however her mostly fertilized by self pollination.[6]

"Mathai and Sastry" (2001) In their article examine living standards should be planted 3-4 years in advance so as to attain sufficient height at the time of planting black pepper. During establishment of living standards the side branches are pruned to enable the standards to grow pruning is dependent on the growth of foliage and normally one or two pruning in a year in sufficient pruning of living standards before flowering enhances the yield of black pepper.[7]

"Pillay" (2002) In this paper says that black pepper grows successfully between 200 north and south of equator and from sea level up to 1500m above MSL. It is plant of humid temperature and high relative humidity with little variation in day length throughout the year. Black pepper does not tolerate excessive heart and dryness. In India black pepper growing areas receive 1500cmm to more than 400cmmrainfall. Rainfall after stress induces profuse flowering.[8]

"Balasudhahari.T" (2003) In her article "Black pepper export problem and prospectus" revealed that India has been a sources from time immemorial and India black pepper is famous all over the world. The intrinsic value of the India peppers is good. The average yield in India is 325kg "Pepper accounts for

nearly 50% of the total spice exports and 70% of the value earned through such exports"-Indian pepper also faces problems of poor quality due to presence of pesticide.[9]

"Rethinam and Venugopal" (2003) In their article defines black pepper as a climbing vine is well adapted to grow as an under crop/mixed crop or intercrop with plantation crops. The humid rain forest ecosystem with tropical and subtropical climate provides appropriate environment for raising annual biennial and perennial crops as inter and mixed crops in high density multi spices cropping systems.[10]

6. LIMITATIONS OF THE STUDY:

1. This study is limited only to 50 samples.

2. The study period is only four months.

3. Findings cannot be universal.

4. The study is confined to the pepper cultivation in Vellamcode area only.

7. AREA PROFILE:

The present study is restricted to the southernmost district of Tamil Nadu in India Known as Kanyakumari District. It is the smallest District in Tamil Nadu. Even though it is the smallest in terms of area, its density or population is the highest next to Chennai in Tamil Nadu and stands first in literacy in this profile of the VELLAMCODE area which includes the total population, drinking water, medical facility, educational level population.

7.1 KANYAKUMARI DISTRICT

Kanyakumari district is the southernmost tip of the Indian subcontinent. It place or natural beauty and remarkable historical importance. The yakumari district occupies 1074 sq.kms. The total population of the district rding to 2017 census was 1669763.

The Kanyakumari district has been divided into four Taluks viz Kalkulam, Vilavancode, Thovalai and Agasteeswaram. There are 88village panchayats, 67 town panchayats and 9 panchayat unions.

The Kanyakumari district has a total population of 1669763 out of which 829542 are males and 840221 are females of the total population. About 20% is living in semi-urban and rural areas.

7.2 VILAVANCODE TALUK:

Vilavancode is one of the biggest Taluks in Kanyakumari district. It is bounded by Western Ghats in the North, Kalkulam Taluk in the South, Agasteeswaram and Thovalai Taluks in the East and Arabian Sea in the West.

Vilavancode taluk has 23 villages. There is one municipality and three development blocks. The area of Vilavancode taluk is 32104sq.kms.Head quarters of the taluk is Kuzhithurai. Arumanai is the study area which is an important village in Vilavancode Taluk.

The total population of Vilavancode taluk is 519140. The rural population in the taluk is 499914 and urban area population in the taluk is 25226.

In this taluk the main occupation of the people is agriculture, fishing, weaving, coir marketing, Black pepper processing, bricks making stone breaking.

7.3 PROFILE OF THE VELLAMCODE AREA:

This chapter deals with the area profile of Vellamcode which includes the total population, drinking water, medical facilities and educational level.

7.4 ADMINISTRATIVE SETUP:

The district is divided into two revenue divisions viz. Padmanabapuram and Nagercoil having the head quarters at Thuckalai and Nagercoil respectively. There are four taluks. Vilavancode, Kalkulam, Agasteeswaram and Thovalai. There are nine blocks namely Agasteeswaram and Rajakkamangalam, Thovalai, Kurathencode, Killiyoor, Melpuram, Vellamcode, Thuckalai, Thiruvattar etc. There are 95 village panchayat. There are 54 town panchayats in this district out of the total 600 town panchayats throughout the state.

7.5. LOCATION:

This is a village panchayat. Vellamcode panchayat is situated in Kanyakumari district. This area is 35km away from Nagercail. The total area of this panchayat is 1138 sq hectares.

7.6 POPULATION:

The total population of Vellamcode area, according 2017 census is 8468 of this 4108 are males and 4360 females.

7.6.1 SEX WISE DISTRIBUTION:

Sex	Number
Male	4108
Female	4360
Total	8468

Source:Secondary data.

8.Methodology:

This chapter gives a clear picture about the methodology adapted by the researcher for the present study. It provides information regarding the selection of the problem, methods of data collection, statistical tools, technique used.

8.1 METHODS OF DATA COLLECTION:

Relevant and required data pertaining the present study have been collected from two sources via primary and secondary.

8.1.2. PRIMARY DATA:

The primary data are those which are collected fresh and for the first time and this happen to be original in character. The relevant data for the present study area are collected by questionnaire method.

8.1.3 SECONDARY DATA:

Secondary data were collected from the directorate of economic statistics, season and crop parts Indian pepper journal published by pepper development board.

8.2 SAMPLE SIZE:

As the time to the disposal of the investigator is too inadequate to undertake a census study, the investigator wishes to select at random 50 members and subject this to a statistical enquiry with a carefully prepared scheduled. The data obtained from these samples will be carefully tabulated and analyzed with all available statistical tools.

8.3 STATISTICAL TOOLS AND TECHNIQUE USED:

The present study is concerned with the data available as such that it is possible for the investigator to complete only the percentage analysis and Chi-square test. The statistical tools like classification and percentage were used by the researcher to analyzed and interpretation of the available data.

8.4 RESEARCH DESIGN:

A research design is the arrangement of condition for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure.

Hypothesis:

On the basis of the objectives of the study, the following null hypothesis was developed for the purpose of the present study.

i. There is no association between age and income of the respondents.

ii. There is no relationship sex and the satisfaction pattern respondents.

Chi-square test:

As the simple step tables were prepared for understanding the general profile of the respondents. The significant association between the income, age and educational qualification were analyzed with the help of chi-square test using the following formula.

$$X^2 = \sum \left[\frac{(O - \sum)2}{E} \right]$$

Where

O = Observed Frequency

E = Expected Frequency

Expected frequency for the cell can be calculated by the following formula.

$$E = \frac{RT \times CT}{N}$$

Where,

E = Expected frequency

RT = The row total for the row containing a cell

CT = The column total for the column containing a cell

N = The total number of observation

Period of the study:

The period of study is five months December 2018 to March 2019

9. BLACK PEPPER CULTIVATION – OVERVIEW:

Black pepper (Piper Nigrum) the king of spices is one of the oldest and the most popular spice in the world. It is a perennial climbing vine indigenous to the Malabar Coast of India. In the early historic times Black Pepper was widely cultured in the tropics of South East Asia. Where it became an important article of over Land trade between India and Europe. It becomes a medium of exchange and tributes were Levied in Black pepper in ancient Greece and Rome. In the middle ages the venation and the Genoese become the main distributors their virtual monopoly of the trade helping to instigate the search for an eastern sea route. The name pepper comes from the Sanskrit word pippali meaning berry.

Pepper has always been one of the most important of spices and is one most ancient. It has been highly esteemed in the east from time immemorial. It was an important commodity in Greece and Rome and was an chief spice during the middle ages. When attributes were often Levied in pepper. As early as 1980 the guild of trade guilds in England. The high price of pepper was one chief incentives for the search for a sea route in India. Today no other spice is known (or) more widely used

9.1 VARIETIES OF PEPPER:

Black pepper is produced from the still green unripe drupes of the pepper plant. The drupes are cooked briefly in hot water them for drying. The heat ruptures of cell walls in the pepper, speeding the work of browning enzymes during the machine for several days during which the pepper around the seed shrinks and darkens in to a thin wrinkled black layer pepper corn on some estates the berries are separated from the stem by hand and then sun dried without the boiling.

1. White Pepper

2. GreenPepper

3. Orange Pepper and Red Pepper

4. Black Pepper

Black pepper is produced from the still-green, unripe drupes of the pepper plant. The drupes are cooked briefly is hot water, both to clean them and to prepare them for drying. The heat ruptures cell walls in the pepper, speeding the work of browning enzymes during drying. The drupes are dried in the sun or by machine for several days, during which the pepper around the seed shrinks and darkens in to a thin, wrinkled black layer. Once dried, the berries are separated from the stem by hand and then sun-dried without the boiling process. One the pepper corns are dried, pepper spirit and oil can be extracted from the barriers by crushing then pepper spirit is used in many medicinal and beauty products. Pepper oil is also used as an ayurvedic massage oil and used in certain beauty and herbal treatments.

9.2 BLACK PEPPER IN INDIA:

Black pepper (Piper Nigrum) the king of spices is an important spice crop grown in India. It is mainly used as an pungent and aromatic condiment in foods. Besides that it is used in medicine to curve Dyspepsia, Malaria, Delixium, Hemorrboidsetc it is also used as an aphrodisiac and insect repllet.

India has been known as the Land of spices even from pre-historic times. The Chinese Arabs and the European came to the shores of India Lured by the spices produced hence pepper is also known as "BLACK GOLG".

India is a major pepper producing country in the world about '60000 tonnes' area of 1,97,500 hectares. The global demand of pepper is increasing day-by-day. It has been estimated that about 1.85-2.15 lakhs tones. India stands first in area and production of this crop in the world.

As urban increasing day-by-day it is best to utilized and non traditional area of black pepper cultivation being a vine crop in requires a standard to be grown on it. Basically black pepper requires a warm humid tropical climate but it has been found that this crop can be grown successfully in sub Himalayan Teral region of West Bengal and NE region using areca nut palm as a standard. The field of pepper in this region comparable to the yield obtained in Kerala where as in same it is more than national average.

9.3 EXPORT OF PEPPER:

Pepper accounts for the lion share of the spice exports from India. Kerala contributes 85 percent of the total pepper production in the country. It is an iateresting characteristic that is Kerala pepper is produced by thousands of small and farmers unlike in other pepper producing countries in the world. It is imperative that we not only maintain but also improve are share of the market because of its economic significance to us the commercial and historical importance of pepper trade of course needs to be sustained. In the world market the trade names "Malabar Garbled" and "Telichery Garbled" symbolize our prownd heritages.

Pepper exports was in the increase for the first three years from 2013-2014 from 2015-2016 onwards there were variations in the export of pepper smaller quantity of pepper 18,500 tonnes was estimated to be exported during 2017-2018.

9.4 TOP TEN BLACK PEPPER PRODUCTIONS IN 2017

Countries	Production (in Thousands of tons)

Vietnam	163
US	42
India	53
Netherlands	48
Germany	34
Indonesia	89
China	31
Mexico	25
Turkey	44
Spain	37
Total	566

In the above table Vietnam one of the most value of production 163 in Thousand of tons.

9.5 IN BLACK PEPPER GLOBAL LEVEL:

Type	Unit	2014	2015	2016	2017	2018	Change in (1 year	Change in (3 year)
Import value	USD	$43.28M	$50.07	$45.73M	$54.26M	$82.22M	-8.9%	+65.9%
Import Quantity	Metric Ton	13.75	13.87	17.87	16.52	14.80	+1.5%	+27.2%
Import Price	USD/TON	$3.15	$3.61	$2.56	$3.28	$5.55	-10.3%	30.4%

In the above table Black pepper import values in 2014 US 2018.

9.6 BLACK PEPPER IN TAMIL NADU:

Kanyakumari District occupies the 5th position in the area under pepper cultivation as well as pepper production among all the districts of Tamil Nadu, however the productivity of pepper in his district is found to be the least.

9.7 BLACK PEPPER IN KANYAKUMARI DISTRICT:

The India spices defines the whole flavour of food. These spices are extracted from the natural ingredients and are enriched with natural aroma taste and minerals. Our product is widely acknowledged for their quality and undisputed tastes. Our entire range of spices is blended with unique aroma and flavours which make cuisines distinctive. We understand that the packaging is important in spices, so we use modern packaging technology.

9.8 AREA WISE PRODUCTIVITY OF PEPPER:

The production of pepper is found to be highest [20-45MT] in Vellamcode area in year 2017-2018. This is 2.37 times greater than the production [4.53MT] found in 2015-2016. However the productivity of pepper is this black (0.30) is comparatively lower than the productivity of the other two three blacks (0.30 and 0.35) respectively.

9.9 BLACK PEPPER IN VELLAMCODE :

The total area under pepper Vellamcode area occupies over the year on the 150 hectares in 2017-2018. This black has a major share of 150 hectares [85.25 percent].

9.10. Black pepper Medical Benefits:

Black pepper health benefits include fighting depression promoting digestion helping with nutrient absorption, treating, ulcers, supporting weight loss, treating cougn and sore throat, promoting a health heart and soothing toothaches. Other benefits includes preventing gray hair, treating arthritis and enhancing the skin.

1. Help fight Depression
2. Helps with Digestion
3. Nutrient Absorption
4. Black pepper and skin
5. Promotes a healthy heart

10. DATA ANALYSIS AND INTERPRETATION:

An attempt has been made in this chapter to analyze the socio economic characteristics of sample respondents. The entire analysis is centered on age composition, marital status, family size, house structure and ownership saving problems faced by the workers and the level of job satisfaction of respondents

10.1 AGE WISE DISTRIBUTION:

Age wise distribution is an important factor for this study. The following table shows the age classification of the sample respondents.

TABLE: 10.1 Age-wise distributions

Sl.No.	Age(Years)	No Respondents	Percentage
1.	21-30	16	32
2.	31-40	17	34
3.	41-50	12	24
4.	51-60	5	10
	Total	**50**	**100**

Sources: Primary Data

The table 4.1 shows that 32 percent of the sample respondents are in the age group of 21-30 years, 34 percent of the sample respondents are in the age group of 31-40 years, 24 percent of the sample respondents are in the age group of 41-50 years.

Figure 10.1 Age wise distribution

10.2
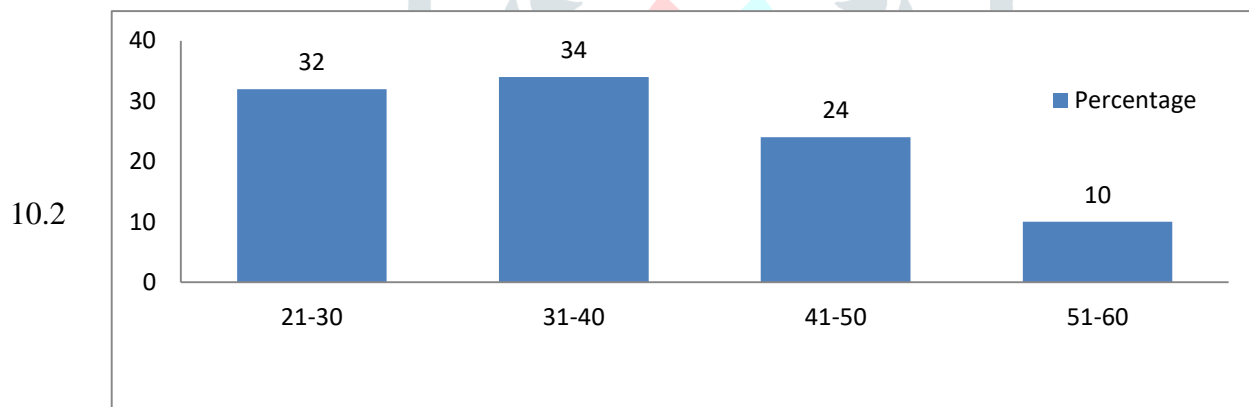
INCOME OF THE RESPONDENTS:

Income is an important factor which decides the standard of living of the people. The following table shows the income per month of the respondents.

TABLE: 10.2 Income of the respondents

Sl.No	Per month (Income	No.of Respondents	Percentage
1.	Below 5000	24	48
2.	Rs.5000-10000	12	24
3.	Rs.10000-15000	9	18
4.	Above Rs.15000	5	10
	Total	**50**	**100**

Source: Primary Data

The table 4.20 shows that 48 respondents out of which 48 percent of the respondents are below the income the income group of Rs.5000, 24 percent of the respondents are below the income the income group of Rs.10000, 18 percent of the respondents are below the income of 10000-15000 and the 10 percent of the respondents are below the income of group Rs.15000.

Figure: 10.2 Income of the respondents
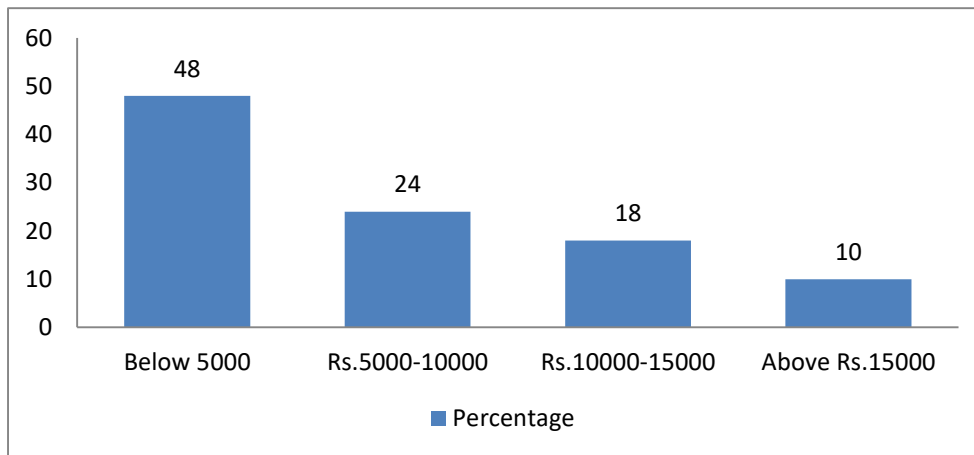
10.3 Gender-wise classification of the respondents:

Table 10.3 Gender-wise classification of the respondents

Sl.No	Gender	No.of Respondents	Percentage
1	Male	12	24
2	Female	38	76
	Total	50	100

Source: Primary data

The above table 4.9 shows the data relating to the gender of the sample respondents Out of 50 respondents are male and the remaining 76% of the respondents are female.

Figure: 10.3 Gender-wise classifications of the Respondents

Percentage
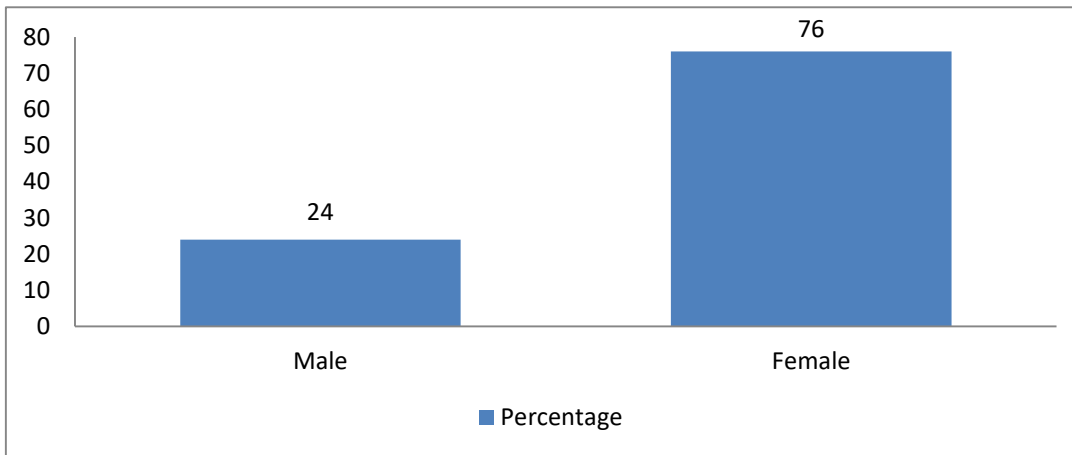
10.4 Relationship between the age & Income:

The age of respondents were classified under four categories as Below 20, 20-30, 30-40 and above 40 and the Income where grouped under the heading below 2000, 3000-4000, 4500-5500 and above 6000. The chi-square test is determined as follows.

Table 10.4 Comparison age and Income of the respondents

Income	Age				
	Below 20	20-30	30-40	Above 40	Total
Below 2000	2	4	1	0	7
3000-4000	4	8	5	2	19
4500-5500	0	7	8	0	15
Above 6000	4	1	1	3	9
	10	20	15	5	50

Application of chi-square Test for Age & Income of the Respondents

O	E	O-E	$(O-E)^2$	$\dfrac{(O-E)2}{E}$
2	1.4	0.6	0.36	0.2571
4	3.8	0.2	0.04	0.0105
0	3	-3	9	3
4	1.8	2.2	4.84	2.6888
4	2.8	1.2	1.44	0.5143
8	7.6	0.4	0.16	0.0210
7	6	1	1	0.1666
1	3.6	-2.6	6.76	1.8777
1	2.1	-1.1	1.21	0.5762
5	5.4	-0.7	0.49	0.0859
8	4.5	3.5	12.25	2.7222
1	2.7	-1.7	2.89	1.0704
0	0.7	-0.7	0.49	0.7

2	1.9	0.1	0.01	0.0053
0	1.5	-1.5	2.25	1.5
3	0.9	2.1	4.41	4.9
X^2				**20.096**

Calculated value   = 20.096

Degrees of freedom = $(r\text{-}1)$ (c-1)

              = (4-1) (4-1)

              = 3x3

              = 9Table value   16.92

       Since, the calculated value is more than the table value the hypothesis is rejected. So there is relationship in the income among the age wise respondents.

10.5 Sex and Satisfaction

     Sex is an important factor for determining the earning capacity and strength of people. The following table shows the relationship between them.

Table 10.5 Composition of Sex and satisfaction

Sex	Level of satisfied	Satisfaction Dis-satisfied	Total
Male	15	12	27
Female	11	12	23
Total	26	24	50

Source: Primary Data

       From the above table 4 it is clear that the male tested through chi-square test.

       Ho = There is no significant different between sex and the satisfaction.

Application of chi-square between sex and Respondents satisfaction

O	E	O-E	(O-E)2	$\frac{(O-E)2}{E}$
15	14.04	0.96	0.9262	0.0656
11	11.96	0.96	0.9261	0.0770
12	12.96	0.96	0.9261	0.0711
12	11.04	0.96	0.9261	0.083
Total				**0.2967**

Source: Primary Data

     X^2= 0.2967

     Degree of freedom   = (r-1) (c-1)

                          = (2-1) (2-1)

                          = 1

Total value   = 1 degree at 1% level

                          = 2.706

Since, the calculated value is less than the table value, the hypothesis is accepted. So there is no significant difference sex and the respondents' satisfaction level.

11. SUMMARY OF FINDINGS, SUGGESTIONS AND CONCLUSION:

The final and concluding summarizes the important findings and conclusion of the present study and suggests measures for the improvement of pepper cultivation in Vellamcode area.

11.1 FINDINGS:

- ❖ The study reveals that about majority 34 percentage of the respondents are at the age group 31-40 years.
- ❖ The study shows that among the 48 sample respondents, 50 percentages of them are above the income group of Rs.2000.
- ❖ Majority of the respondents 76 percentage are female.
- ❖ The demographic factors such a age and Income are independent and the sex and satisfaction is dependent towards the level of satisfaction of the respondents.
- ❖ The study reveals that among the sample respondents 72 percentages of them are living in Terrace and Tiled houses.
- ❖ The study reveals that among the sample respondents, 84 percentages of them are living in own houses.

11.2 SUGGESTIONS:

One of the major problems reported by the sample respondents is diseases which affect the pepper plant frequently. Hence irrespective of disease problem, the type of symptoms, the correct identification and phyto - sanitary measures to be adopted rigorously.

The purposes nursery site should be well drained and free from water logging. They are should be well leveled with assured facility.

The common concern for the farmers from banks and agriculture departments are to improve production and income. But a policy market approach may help the farmers to achieve economic excellence. One of the major problems reported by the sample respondents is market trend.

Hence, creation of marketing activities will activate income and there by feeds to butter production measures too.

Agriculture department and extension workers have done many services to the farming community in the past in educating them to green revolution packages and other modern technologies. The government should therefore is associated with NGO's take all efforts to familiarize the concept of sustainable agriculture and facilitate its acceptance and adoption by farmers.

Regarding the price, pepper is new sold for higher extension. There is another problem (ie...) pepper adulteration. The pepper should be sold originally and naturally. Then the price will be.

11.3 CONCLUSION:

The Vellamcode area, there are wide possibilities for agriculture development for agriculture development in all type of agriculture crops. The major crops cultivated in the Taluk are Coconut, Rubber, Banana, Areca nut etc... With regard to spices pepper is cultivated. So in the chapter out of the 50s sample respondents involved in the pepper cultivation and the economic impact, market extension, price extension problem of pepper cultivation are all should be analyzed and discussed.

REFERENCES:

1. "Palaniyappan.K", Spices Exports A lost Glory how do we region? KisanWorld. Vol:20, Feb-2001, page no:31.

2. "Balasudhahari.T", "Black Export problem and prospectus" Kisan world, Vol: 25, April-1,1997, page no:47.

3. Peter.K.V. "Getting black in spice article" India Horticulture, Vol:27, July-Sep 2000, P. 3-6.

4. Sukumari.P "Common method of pepper cultivation" Kisan world, Vol:17, October-1999, P.29.

5. "Frankel and Galun" "Gutting black in spice articles" Indian horticulture Vol:27,Page No: 3-6.

6. "VijayaKumar and Mannamon" (2000) "Expert-Problem of India Spices" Kisan world Vol:16, Page No:4711.

7. "Pillay" (2002), "Expert-Problem of India Spices", Kisan world. Vol:16, Page No:47.

8. "Mathai and Sastry" (2001) "Spices expert a lest galary how do we region", Kisan world Vol:20, Page No:31.

9. "Rethinam and Venugopal" "Common method of pepper cultivation" Kisan world, Vol:17, Oct-1999, Page No:29.

10. "Nambiar" Black pepper Export problem and prospectus" Kisan world, Vol:25, Page No:47.

11. Dr.Alagappan.V and Manoharan.M "Production of pepper in India" Kisan world, Vol: 4, May-1999. P.8.

12. Mammoty K.P., Neema V.P. and Vanaja.T "Diaeaseof Black Pepper" Vol: 7, Jan-2004, P.28.

13 ArunKumarSit, Chenchalab K.C. "Feasibility of Black pepper cultivation" Vol.6, May-2005, P.15.

14. Priya, P.Menon and Bindhumol. G.P. "The medicine in Black pepper" Vol: 5, June-2006, P.10.