

Problems and Prospects of Mixed Cropping – A Study with Special Reference to Pepper and Cardamom Cultivators in Idukki District

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ABSTRACT

Mixed cropping means growing more than one crop on the same piece of land at the same time. In order to increase the productivity and income from the land, people may resort to mixed cropping method of farming. The study was made with the objectives of identifying the reasons for choosing the particular crops, to know the advantages of mixed cropping, to identify the problems faced by the mixed cropping farmers, to identify the marketing strategies adopted by the farmers and propose suitable suggestions. Data was collected from the farmers who are cultivating both Pepper and Cardamom from Idukki District. Sample size was 65 farmers. Geographical area is the main reason for choosing a particular crop for the cultivation by the respondents. The main problems which is faced from the area of marketing system is that the retailer or the shop keeper does not give the full price for the product that the farmers produced. It was suggested that the Government should take initiatives and give training and proper guidance to the younger farmers.

Keywords: Mixed cropping, Marketing Strategies.

INTRODUCTION:

Many forms of agriculture found throughout the world are the result of variations in local climate, soil, economics, social structure and history. Water balance, radiation, temperature and soil conditions are the main determinants of the physical ability of crops to grow and farming systems to exist (Beets, 1982). Agriculture in the next decade will have to produce more food from less area of land through more efficient use of natural resources with minimal impact on the environment in order to meet the growing population demands (Ngwira, 2012). Sustainable agriculture is more efficient in use of resources such as soil and water, and is in balance with the environment conditions. Intercropping/ Mixed cropping is a way to increase diversity in an agricultural ecosystem. Mixed cropping is defined as growing more than one crop on the same piece of land at the same time (Beets, 1982). The main advantages of intercropping are increase in the income of the farmers, insects and diseases infestation become less, proper utilization of fertilizers, increases the intensity of cropping, development of self-reliance, expansion of industrial and marketing systems. Hence, keeping in view the importance of mixed cropping, the present study makes an attempt to understand the problems and prospects faced by the mixed cropping farmers. The study will be mainly focused on farmers who are cultivating the spices pepper and cardamom.

REVIEW OF LITERATURE:

Grazhdani et. al (2013) mentions that cropping, tends to become more important than animal production because, in general, it can feed more people per area unit in terms of calories and protein. In such systems, the role of wasteland grazing as a source of energy for agriculture through animals for traction and dung is often taken over by the use of resources from fossil reserves.

The farmers who practicing mixed crop-livestock production system are more dependent on crop production,

practice pastoral and agro-pastoral production system. The main purposes of goat production were for milk, meat and cash generation Arse Gebeyehu et. al (2013).

Zhumanova et. al (2012) in the study titled 'the benefits and challenges of farming in mixed crop-livestock production systems in Ala- Buka, Kyrgyzstan' describes the agrarian land reform has changed Soviet model of state-owned land with predominance of large scale-farm enterprises to a market-oriented model of privately owned land with predominance of small and medium-sized family farms.

Diego Valbuena et. al (2012) in the study titled 'conservation agriculture in mixed crop- livestock systems: Scoping crop residue trade- offs in sub- Saharan and South Asia' describes about knowledge of the potential trade-offs of leaving more residues as mulch is only partial and the objective of this research is to address some of these knowledge gaps by assessing the trade-offs in contrasting settings with mixed crop-livestock systems.

RESEARCH GAP:

By reviewing the available literature, it was found that even though many studies are conducted in the area of mixed cropping throughout the world, no study was conducted with respect to problems and prospects of mixed cropping in Kerala. In addition, studies with respect to the spices pepper and cardamom was seldom made. So, by understanding this research gap the present study entitled 'problems and prospects of mixed cropping- a study with special reference to pepper and cardamom cultivators in Idukki District' was made.

Objective:

The main objectives of the presents study are as follows: i) To identify the reasons for selecting the particular mixed cropping system by the farmers ii) To analyze the advantages available to the farmers iii) To understand the problems and challenges faced by the farmers iv) To recognize the Marketing strategies adopted by the mixed cropping farmers and v) To identify the suggestion's to be proposed to the mixed cropping farmers.

Hypotheses:

Ho₁: There is no significant difference between male and female with regards to various problems faced by the farmers.

Ho₂: There is no significant difference among educational qualification with regards to the various problems faced by the farmers.

METHODS AND METERIALS :

The study is an empirical research based on the assessment of problems and prospects of mixed cropping a study with reference to pepper and cardamom cultivators in Idukki dist.

Convenience sampling method was followed for selection of the sample. Data was collected from the farmers who are cultivating both Pepper and Cardamom. Sample size was 65. Both primary and secondary data was used for the study. The study has adopted interview method for data collection by using interview schedule which were specially prepared for this study. Statistical tool used for analyzing the collected data was SPSS (Statistical package for Social Science) software. The results obtained were reported in tables and diagrams for better understanding. Meaningful conclusions were arrived by constructing simple and two-way tables and by using statistical technique one-way ANOVA.

DATA ANALYSIS:

Personal Profile of Respondents:

Among 65 respondents, 70.8 percent of respondents are Male and 29.2 percent of respondents are Females. This is evident that the male members are more active in farming. 20 percent of the respondents have an education qualification of SSLC or Below and 15.4 percent of the respondents have Plus two qualifications. 47.7 percent of the respondents are Graduates and 16.9 percent of the respondents are got other qualification. 40 percent of the respondent's monthly income is Below Rs.10000. From the table it is clear that Most of the farmers have the land holding of 1 Acre and below.

From the table 1 it is evident that the factors determining the choice of a particular crop are Geographical Area (Mean = 4.04), Price (Mean = 3.53) and Productivity (Mean = 3.55) and followed by the factor Crop (Mean = 3.45).

Table 1: Reasons for Choosing A Particular Crop

Reasons	Mean	Std. Deviation
Geographical Area	4.0423	.47097
Crops	3.4538	.80634
Price	3.5385	.50981
Productivity	3.5538	.76098

Source: Primary data

Table 2: Advantages to the Farmers

Advantages	Mean	Std. Deviation
Income	3.646	.607
Fertilizer	3.469	.651
Productivity	3.912	.518
Social Status	3.653	.887

Source: Primary data

More advantage is given by the factor Productivity which have the highest mean value of 3.91 followed by the factor Social status (Mean = 3.65), Income (Mean = 3.64) and Fertilizer (Mean = 3.46).

Table 3: Problems Faced by the Farmers

Marketing Risk	Mean	Std. Deviation
Market prices of the spices is not sufficient.	3.8000	.95525
Low demand for the crops will be affected in the production.	3.2462	1.42556
Marketing process of the crops is difficult and complex.	3.6000	1.32051
Technical Risk	Mean	Std. Deviation
Irrigation techniques used for mixed cropping is very difficult.	2.9692	1.32251
For both spices, different types of techniques to be needed.	2.9077	1.23394
Lack of knowledge regarding the new techniques by the farmers.	3.3231	1.18727
Production Risk	Mean	Std. Deviation
The production cost is high for both the spices.	3.7231	.92715
Climate changes will badly affect the production.	4.2154	.69580
Due to lack of labours will be affected in the production.	4.0923	.94742
Attack of pests to crops and crop diseases are high.	3.8000	.93875
Holding of small land gives you any difficult to produce the crops.	3.8000	.97147
The existing system of cultivation can be continued to the future.	3.9231	.92378
Farmers have any idea to change the existing system of cultivation.	4.0615	.80772

Source: Primary data

It is clear that the production cost is high for the crops, Climate changes will affect badly to the cultivation process, Attack of pests and the crop diseases are high and holding small land is very difficult to the farmers for cultivation. The farmers do not have any idea to change the existing system of cultivation.

Table 4: Marketing Systems

Marketing System	Mean	Std. Deviation
Sell the products in a raw form.	3.3231	1.45889
Sell the products in a dried form.	3.7538	1.01598
When the price is low then you hold the crop with you and wait for increase the price of the crops.	3.2769	1.19252
License is compulsory for make an auction sale.	4.0462	.89147

Marketing System	Mean	Std. Deviation
We are able to sell the products at the same price which is prevailing in the market.	3.9538	.89147
The retailer or the shop keeper does not give full price for the product.	4.2615	.59364
Market price for each spice is sufficient.	3.5231	.77273
Market is available to sell the crops that you produce.	3.8154	.98254
Different strategies are adopted for marketing the products produced by the farmers.	3.8769	1.28096
We are able to make value added products from cardamom and pepper.	3.1692	.91120
Export facilities are available.	3.0469	1.23994

Source: Primary data

The respondents give high support or agreement to the statement of the retailer or the shop keeper does not give full price for the product (Mean = 4.26) followed by the statement of license is compulsory for make an auction sale (Mean = 4.04).

HYPOTHESES TESTING:

Gender and problems faced by the farmers:

Gender of the respondents can result in differences with regards to the Problems and Prospects of mixed farming. In order to check, whether there is any significant difference among gender and Problems faced by the farmers. The following hypothesis was formulated and tested using the One-way ANOVA test.

Ho: There is no significant difference between Male and Female with regards to various problems faced by the farmers.

H1: There is significant difference between Male and Female with regards to various problems faced by the farmers.

Table 5: GENDER AND PROBLEMS

Descriptive Statistics				One-way Anova				
	N	Mean	Std. Deviation		Sum of Squares	Mean Square	F	Sig.
Male	46	3.6154	.60090	Between Groups Within Groups	.037	.037	.102	.751
Female	19	3.5628	.61701		23.101	.367		
Total	65	3.6000	.60128	Total	23.138			

Source: Primary Data

Table 6 shows that there is significant difference among the Age group with regards to Problems faced by the farmers as the P value is more than 0.05. Thus, the null hypothesis is accepted.

EDUCATION AND PROBLEMS FACED BY THE FARMERS:

Different educational qualifications of the respondents can cause with regards to the problems that faced by the farmers. In order to check, whether there is any significant difference among educational qualifications and the problems faced by the farmers. The following Hypothesis was formulated and tested using the One-way ANOVA Test.

Ho: There is no significant difference among educational qualification with regards to the various problems faced by the farmers.

H1: There is significant difference among educational qualification with regards to the various problems faced by the farmers.

Table 6: Education and Problems Faced by the Farmers

Descriptive Statistics				One-way Anova				
	N	Mean	Std. Deviation		Sum of Squares	Mean Square	F	Sig.
SSLC or Below	13	2.964	.3967	Between Groups Within Groups	10.432	3.477	16.69	.000
Plus two	10	3.276	.3823		12.706	.208		
Graduates	31	3.965	.5553	Total	23.138			
Others	11	3.615	.1576					
Total	65	3.600	.6012					

Source: Primary Data

Table 7 shows that the null hypothesis is rejected and it specifies that there is significant difference among education and problems faced by the farmers. Therefore, the P value is less than 0.05. Means score shows that respondents coming under the education qualification of ‘Graduates’ (3.96) is significantly more than the education qualification of ‘others’ (3.61) and ‘Plus two’ (3.27). It indicates that the Graduates farmers are facing more problems in farming activities.

FINDINGS AND SUGGESTIONS:

Geographical area is the main reason for choosing a particular crop for the cultivation by the respondents and it has the highest Mean Value (4.042). The price of the raw-materials is high for the crop cultivation. The prices of the crops are not sufficient to the famers. The main advantage of the farmers is get from the factor Productivity and it has the highest Mean Value (3.912). Production risk is the main problem that is faced by the respondents. It has the highest Mean Value (3.945). Attack of pests and crop diseases are high it is one of the problem that is faced by the respondents. Production cost is high for the both the crops of pepper and cardamom. The main problems which is faced from the area of marketing system is that the retailer or the shop keeper does not give the full price for the product that the farmers produced. It has the highest Mean Value (4.261). It indicated that the Graduates are tends to experience more problems in the farming activity. The farmers have no idea to change the existing system of cultivation.

Some of the suggestions are as follows: -

1. The prices of the raw-materials are high and the prices for the crops in the market is not sufficient for both the crops. It affects the production process. Therefore, policy makers must come up with proper mechanisms to solve this problem.
2. Attack of pests and crop diseases are high. Hence, to solve this problem, the farmers must use correct natural and also the chemical fertilizers and pesticides for the crops.
3. The retailer or the shop keeper does not give full price for the crops which is prevailing in the market. So government has to take initiative to give fair prices to the farmers.
4. The graduate farmers are facing more problems in agricultural area. Therefore, proper guidance and training programmes has to be given to them in order to reduce their problems.

LIMITATIONS AND SCOPE FOR FURTHER RESEARCH:

The present study aimed to study the problems and prospects of mixed cropping in Idukki District with respect to the spices pepper and cardamom only. And the respondents were limited to 65. Hence there is a scope for further research as there are other crops which are included in the intercropping system other than pepper and cardamom

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