

## KNOWLEDGE LEVEL OF FARMERS ABOUT IMPROVED CULTIVATION PRACTICES OF COCONUT

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**Abstract:** To study the knowledge level of farmers about improved cultivation practices of coconut, a study was conducted in Kasaragod district among 100 farmers from ten selected panchayats. The study revealed that farmers possessed appreciable amount of knowledge on items such as nursery practices, planting and after care and multiple cropping. Their knowledge on manures and manuring and plant protection were poor thus stressing the need to take up educational activities on such aspects. The level of education and mass media exposure of the farmers were positively and significantly associated with their knowledge on improved cultivation practices of coconut.

**Key words :** Coconut farmers, knowledge level, mass media exposure, technology adoption.

### INTRODUCTION

The major reasons for low productivity of coconut is the lower adoption of improved package of practices by the farmers. Knowledge of farmers on various cultivation practices of coconut will definitely have an impact on the extent of technology adoption and in order to make the training programmes for farmers more effective, it is essential in this context to assess the same in association with their socio-personal characteristics. To meet this end a study was conducted in Kasaragod district of Kerala with the objective to assess the knowledge of farmers about improved cultivation practices of coconut and to analyse the association between knowledge of farmers and their socio-personal characteristics.

### MATERIALS AND METHODS

The study was conducted through a field survey using simple random sampling technique. From the total of 37 panchayats in the district, 10 panchayats were selected at random and from each of these 10 coconut growers were randomly selected thus making the sample size 100. The respondents were contacted individually and data were collected using a pre-tested interview schedule.

Knowledge of farmers was measured using a knowledge test. A large number of items with respect to the improved cultivation practices of

coconut were prepared in consultation with the subject matter specialists and extension personnel of the area. Among them, 26 items were selected and the collected items were converted into multiple choice questions and administered to the respondents.

Scoring procedure: A score of one was given for correct answers and zero for incorrect answer. The total knowledge score for each respondent was computed by adding the score for each item.

Knowledge Index was worked for individual farmer using the following formula: Knowledge index = (Total score obtained by a respondent / Maximum possible score) x 100.

Based on the mean and standard deviation the respondents were categorised into three groups viz., low, medium and high knowledge groups. Knowledge index was calculated for the major and sub-items of coconut cultivation by following the same procedure. Age, education, farming experience, farm size, social participation, mass media exposure and contact with and knowledge about extension agency were selected as the socio-personal characteristics and were measured using appropriate tools.

### RESULTS AND DISCUSSION

The distribution of farmers according to the knowledge on improved cultivation practices

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Table 1. Knowledge of fanners with respect to the major items of coconut cultivation

| Sl. No. | Major item           | Knowledge |       | Rank |
|---------|----------------------|-----------|-------|------|
|         |                      | Score     | Index |      |
| 1       | Improved varieties   | 108       | 54.00 | iv   |
| 2       | Nursery practices    | 429       | 61.29 | ii   |
| 3       | Planting after care  | 317       | 63.40 | i    |
| 4       | Manures and manuring | 142       | 47.33 | vi   |
| 5       | Plant protection     | 318       | 53.00 | v    |
| 6       | Multiple cropping    | 168       | 56.00 | iii  |

of coconut was 22% low, 61% medium and 117% high. This distribution pattern of farmers with nearly one fourth of them still in the low knowledge category highlights the need for organising educational activities for the benefit of the fanners.

The knowledge of farmers with respect to the major items of coconut cultivation is furnished in Table 1. It could be observed that higher knowledge index values for planting and after care, nursery practices and multiple cropping which could be attributed to the simple reason that these items were simple to understand and practice. The lowest knowledge index was secured by the major item viz., manures and manuring. Plant protection also emerged as an item with low knowledge index which was ranked fifth in the descending order of knowledge index. It is imperative that manures and manuring is the major cultural aspect of coconut cultivation which requires maximum emphasis while organising training programmes for farmers, followed by plant protection and improved varieties. This result is in line with the findings of Kanagasabapathy (1988) who reported that farmers expressed more training needs in the subject matter areas of plant protection and manures and manuring. It is important that manures and fertilizers be used most judiciously by the farmers since they are costly inputs for which farmers have to be educated about integrated nutrient management and such other concepts.

Table 2. Knowledge of farmers with respect to sub-items of improved cultivation practices of coconut

| Sub-item  | Knowledge |          |
|---|-----------|----------|
|   | Score     | Index    |
| <b>Improved varieties</b>   |           |          |
| Improved varieties  | 52        | 52.00    |
| Suitability of high yielding varieties of coconut to different situations | 56        | * 56.00  |
| <b>Nursery practices</b>  |           |          |
| Selection of mother palms   | 51        | 51.00    |
| Harvesting and selection of seed nuts                                     | 61        | 61.00    |
| Storage of seed nuts  | 64        | " 64.00  |
| Preparation of nursery beds   | 60        | I 60.00  |
| Sowing of seed nuts   | 75        | 75.00    |
| Plant protection in nursery   | 68        | 68.00    |
| Selection of seedlings  | 50        | 50.00    |
| <b>Planting and after care</b>  |           |          |
| Preparation of pits for planting  | 58        | 58.00    |
| Spacing   | 62        | 62.00    |
| Time of planting  | 69        | 69.00    |
| Irrigation of coconut palms   | 64        | 64.00    |
| Husk burial in coconut garden   | 63        | 63.00    |
| <b>Manures and manuring</b>   |           |          |
| Application of organic manures  | 54        | 54.00    |
| Dose, method and time of application of chemical fertilizers              | 38        | 38.00    |
| Choosing suitable type of fertilizers                                     | 50        | 50.00    |
| <b>Plant protection</b>   |           |          |
| Identification of pests and diseases                                      | 96        | 48.00    |
| Suitable pesticides / fungicides for controlling pests / diseases         | 56        | 56.00    |
| Preparation of spray solution   | 53        | "I 53.00 |
| Biological control of coconut caterpillar                                 | 52        | 52.00    |
| Precautions in handling chemicals   | 61        | * 61.00  |
| <b>Multiple cropping</b>  |           |          |
| Intercropping in coconut garden   | 48        | 48.00    |
| Multi-tier cropping in coconut garden                                     | 65        | / 65.00  |
| Mixed cropping in coconut garden  | 55        | I 55.00  |

Table 2 indicates information on knowledge of farmers with respect to the sub-items coming under the major aspects of coconut cultivation practices. It could be inferred from the table that farmers are aware that hybrid varieties

which are suitable for cultivation only in situations where they can provide good management conditions and hence the higher knowledge index for the second sub-item than the first. Table 2 reveals that the respondents had fairly good amount of knowledge in respect of sub-items of nursery practices except for the selection of mother palms and selection of seedlings which are crucial for better performance of coconut palms and hence these items are to be emphasised while imparting training to coconut farmers. It is evident from the table that the farmers possessed good amount of knowledge about items such as time of planting, irrigation and husk burial in coconut garden. However, details of spacing and preparation of pits for planting are to be highlighted to make the farmers aware of the importance of those items.

The data on the knowledge of farmers in respect of sub-items under manures and manuring indicate that farmers possessed least knowledge as compared to others in the case of the dose, method and time of application of chemical fertilizers. This points to the need for giving importance to this item while streamlining training programme for coconut growers.

The level of knowledge of farmers about the plant protection aspects of coconut reveals that the identification of pests and diseases of coconut is the one which secured the lowest knowledge index. Similarly biological control of coconut caterpillar and preparation of spray solution are the other areas where the farmers seem to need more exposure. These observations acquire more significance as lack of plant protection measures is a major impediment for enhancing coconut production.

Multiple cropping is a concept in crop production which aims at increasing income through efficient use of basic resources. Even though farmers were growing other crops in the interspaces of coconut palms they seem to lack the scientific insight required for selecting suitable species of crops for multiple cropping and also their proper planting and management. Hence farmers are to be exposed to the various aspects of multiple cropping in coconut garden.

Table 3. Correlation between socio-personal characteristics of farmers and their knowledge level (n = 100)

| Variable no. | Name of the variable                              | Correlation coefficient |
|--------------|---|-------------------------|
| x1           | Age   | -0.088 NS               |
| x2           | Education   | 0.6005**                |
| x3           | Farming experience                                | -0.1420 NS              |
| x4           | Farm size   | 0.1428 NS               |
| x5           | Social participation                              | 0.0568 NS               |
| x6           | Mass media exposure                               | 0.3298**                |
| x7           | Contact with and knowledge about extension agency | 0.1006 NS               |

\*\* Significant at 1 per cent level of probability; NS - Not significant

Top find out the relationship between the knowledge level of farmers on improved cultivation practices and their socio-personal characteristics correlation coefficients were computed and the results are presented in Table 3. The computed correlation coefficient values for different variables reveal that except age and farming experience all other variables established positive relationship with the knowledge of farmers. Education and mass media exposure were positively and significantly correlated with knowledge level. Haraprasad (1982) has recorded a similar trend in which the positive and significant association between knowledge level of farmers and their level of education and mass media exposure was reported. Age and farming experience showed negative relationship. Farm size, social participation and contact with and knowledge about extension agency were having positive association with the knowledge of farmers but were not significant. As the farmers grow old, the enthusiasm to acquire knowledge about improved cultivation practices is likely to get reduced and hence negative correlation was observed between age and knowledge of farmers. The significant relationship between knowledge and level of education highlight the fact that education helps the farmers in acquiring more knowledge about improved cultivation practices. The results of the study also revealed that there was positive relationship between farm size and level of knowledge of farmers. When the farm size is large the

tanners are likely to be more risk hearing and they search for new technologies which can letch them more income. Social participation was found to have positive but non-significant relationship with knowledge of farmers. It is common to observe that a person with high level of social participation may get interacted with his peer group and many other social organisations resulting in the acquisition of knowledge about improved cultivation practices. Mass media exposure had shown positive and significant relationship with the level of knowledge of farmers. The network of mass media such as radio, TV and newspaper play a vital role in the transfer of latest agricultural technologies to the farmers. Hence farmers with higher mass media exposure could acquire more knowledge on improved knowledge level of farmers. Frequent contact with extension agencies can bring about im-

-provements in the knowledge level of farmers on improved **cultivation** practices and hence the positive association.

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