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Training Needs in Knowledge of Banana Growers in Palakkad District of Kerala

Key words : *Banana growers, Knowledge, Training needs.*

Banana (*Musa* species) the "queen of tropical fruit" is considered to be one of the oldest fruits known to mankind. Banana isconsidered as the most important energy providers'food and is a good source of mineral,salts and vitamins. Banana produced a more balanced diet than many fruits.

In India, banana is largely grown in Tamil Nadu, Kerala, Maharashtra, Andhra Pradesh and Bihar. It is the second most important fruit crop in India next to mango. Production alone constitutes 32 per cent of the fruit production in India. The contribution of banana to GDP (Gross Domestic Product) of agriculture in India is 2.80 per cent.The productivity of banana in Kerala is 13.8 tha^{-1} (Source: Directorate of Economics & Statistics, Kerala) in 2014 Where as, it was 46.1 tha^{-1} in Tamil Nadu (Source: National Horticultural Board). This productivity difference is due to lack of information and skills among farmers about the cultivation strategies of banana.The basic problem is not of natural resources but it is of the human resources. Hence, it is required to strengthen human capital through an effective system of extension training and education.

Keeping the above in view, a research study on training needs of banana growers in Palakkad district of Kerala, has been articulated with the following objective: To identify the training needs in knowledge related to banana cultivation

The study was conducted during 2017 in Palakkad district of Kerala purposively as Palakkad has highest number of banana growers by adopting Ex-post-facto research design. The present study has been taken up in three blocks covering twelve villages of Palakkad district. A sample of 120 banana growers were selected based on proportionate random sampling method. The data was collected through well structured pre-tested interview schedule, which was coded, tabulated, analysed and presented in tables to make the findings meaningful and easily understandable. Various statistical measures such as frequency, percentage, correlation coefficient and multiple linear regressions were used. The findings were suitably interpreted and necessary conclusions and interference were drawn.

Assessment of training needs

Training needs in knowledge of banana growers were accessed in main areas and sub areas of banana cultivation as identified by the scientists and progressive farmers. Above main areas on which banana growers needed training were identified for the study purpose. A three point continuum consisting of 'most needed', 'needed' and 'least needed' was used to measure the training needs of farmers in main areas and sub areas of banana cultivation and a score of three, two, and one was given respectively for quantification. The respondents were asked to indicate anyone of three alternative response against each item of the main areas and sub areas depending upon the degree of training they are in need.

The total training need score of particular item was worked out considering the response expressed by all respondents. For instance for one particular item i.e plant protection, frequency of response against each point was 83 in most needed 20 in needed and 17 in least needed multiplying the frequency by their respective score value.

The total score of this particular item was worked out as 306, the mean score of this particular item was worked out by dividing the total score of the item with total number of respondents. Therefore the mean score of the plant protection item obtaining is 2.55.

The mean score values, were obtained separately for all main areas and sub areas of banana cultivation. Items were ranked according to mean score values. Highest mean score will get 1st rank, next highest mean score will get the next rank, like that all the ranks were worked out.

The mean score more than 2.09 indicates high level of training need, the mean score in the range of 1.13 to 2.09 indicates moderate level of training need and the mean score less than 1.13 indicates the low level of training needs. Out of total 47 areas included in knowledge 31 items are under medium training needs category i.e, 65.96 per cent of the items in knowledge and 8 items each are under high and low training needs i.e, 17.02 per cent each. In majority of the items regarding knowledge, the banana growers had a medium knowledge due to their experience in farming, better mass media exposure, extension contact etc. They lack knowledge regarding the new practices like high density planting etc.

The items of high training needs in knowledge were high density planting (2.43), organic manures (2.22), application of micronutrient (2.34), diagnosis of important insect pests (2.71), diagnosis of important diseases (2.35), management measures for insects and

diseases (2.93), application of recommended nutrients (2.22) and application of recommended management practices for pest and disease (2.16). The items under moderate training needs in knowledge were required soils for banana cultivation (1.62), sowing time (1.19), digging pits for planting (1.28), size of pits (1.29), use of rotovator to break clods(1.45), selection of variety (1.53), type of suckers (1.73), selection of suckers (1.55), method of planting (1.15), dosage of fertilizers (NPK 100 - 200 - 400 g / plant /year) (2.04), method of application of fertilizer (1.9), time of application of fertilizers (1.77), application of liquid fertilizers through drip irrigation (2.05), *in situ* green manuring (1.14), application of biofertilizers (1.7), pre harvest bunch spray (1.56), application of growth regulators (1.47), no. of irrigations to be given to banana crop (1.67), irrigation interval (1.46), method of irrigation (drip, furrow, basin) (1.37) methods of drip irrigation (1.95), propping (1.41), bunch cover (1.18), application of herbicides (1.63), intercropping with cucumber, amaranthus or elephant foot yam (1.33), harrowing and earthing up (1.13), organic certification of products (1.66), time and method of harvesting (1.24) grading (1.93), storage (1.59) and marketing (1.97). Low training need items were required temperature for banana cultivation (1.08), required relative humidity for banana cultivation (1.04), required mean Sea level for banana cultivation (1.02), sucker treatment (1.06), mulching (1.07), desuckering (1.05), packing (1.04) and transportation (1.12) were the items under low training needs in knowledge of banana growers.

Training needs in knowledge of banana growers in main areas

The study indicates that plant protection (2.66), ranked first in the training needs, organic practices (2.01) ranked second , nutrient management (1.82) ranked third, followed by suckers and planting (1.58), post harvest management (1.53), water management (1.49), land preparation (1.34), intercultural practices (1.26), harvesting (1.24) and agro climatic requirements for growing of banana (1.19) were the main areas in training needs of knowledge of banana growers in their mean order of importance.

This was in line with the findings of Paswan *et al* (2013), Nath and Patel (2014) and Kumari and Laxmikant (2016).

Training needs in knowledge of banana growers in specific items under each main area:

Plant protection

The foremost priority was given to training needs in knowledge in banana cultivation on the aspect of management measures for insects and diseases. This might be due to lack of adequate knowledge on the control measures of pests and diseases. Pests and diseases cause a considerable damage to the crop. The banana growers are not able to identify the symptoms in the plants caused by pests, diseases or nematodes. Now a days complex diseases are also appearing in the plants which will add on the difficult situation.

Organic practices

The first priority was given for application of recommended nutrients . The demand for organic banana is also high from inside and outside Kerala. The farmers are having a little knowledge on organic practices of recommended nutrients for banana cultivation and might be due to this there is a priority for training.

Nutrient management

The highest level of training need were for the application of micronutrient. Micronutrient doses and usage is not known to much of the banana growers and they show interest in keeping the soil nutrient rich and this might be the reason of highest level of training need in this area.

Suckers and planting

In the suckers and planting, banana growers gave highest priority to high density planting (2.43) and it may be due to that High density planting is not much adopted by the banana growers as the cultivation practice is not well known by the growers eventhough they have meagre idea about it. Sucker selection is an important aspect as it decides the health of the plant. As sucker treatment helps to reduce the incidence of pests and diseases, the training on knowledge about the pesticides and other materials for treatment is also inevitable. Most of the banana growers were found growing a particular variety of banana based on a preconceived idea and did not know much about others. New varieties released cause confusion in the minds of the growers who are not in a position to decide as to which variety should be grown. So selection of suitable varieties becomes a problem for the growers. This is why suitable varieties was considered as one of those areas in which training is needed. Method of planting and method of sowing were least preferred by growers and it might be due to that they possess adequate knowledge in these areas.

Post harvest management

The highest level of training need were for the marketing. Mostly banana growers sell the produce to nearby markets, through VPCKs or through middlemen. Marketing centers are lacking in many of the areas. These might be the reasons for highest level of training need in marketing. Grading increases the price of the produce. Proper grading and sorting should be carried out for the same. In order to save the bunches, adequate

knowledge in storage is essential. Poor knowledge in storage leads to quick disposal due to its perishable nature. The banana growers have inadequate knowledge about the chemicals used to induce or delay ripening in storage . It will be due to these facts that grading and storage were ranked 2nd and 3rd. Least preference was given to transportation and packing and this might be due to that most of the growers sell produce immediately after harvest, directly from farm.

Water management

In the water management category, methods of drip irrigation was given the highest priority by the banana growers as drip irrigation is an efficient way of water discharge to plants efficient and growers have less knowledge on it. Also the knowledge on no: of irrigations, irrigation interval and method of irrigation will help the banana growers in managing the irrigation water efficiently. This might be the reason for the training need in these area.

Land preparation

In the category of land preparation, the highest priority was given to use of rotovator to break clods (1.45), as they might have felt that their traditional implements are inferior for breaking clods. Least priority was given to size of pits (1.29) and digging pits for planting (1.28) and it might be due to the adequate knowledge of growers in these areas.

Intercultural practices

Banana growers gave first preference to application of herbicides, and it might be due to that the herbicides usage reduces the labour work. Least priority was given to mulching and desuckering and it might be due to the adequate knowledge of growers in these areas.

Harvesting

It is evident from the table 4.22 that the banana growers gave a rank in the training needs in knowledge, to the harvesting time and method (1.24) as they have a little knowledge on harvesting time and method.

Agro climatic requirements for growing of banana

In the agro climatic requirements for growing of banana category, suitable soils for banana cultivation was given highest priority as they might have thought it had a significancewith the yield. Least preference was given to mean sea level and might be due to their awareness

CONCLUSION

High training need items in knowledge were high density planting, organic manures, application of micronutrient, diagnosis of important insect pests, diagnosis of important diseases, management measures for insects and diseases, application of recommended nutrients and application of recommended management practices for pest and disease. And the items under moderate training needs were soils for banana cultivation, sowing time, digging pits for planting, size of pits, use of rotovator to break clods, selection of variety, type of suckers, selection of suckers, method of planting, dosage of fertilizers (NPK 100 - 200 - 400 g / plant /year), method of application of fertilizer, time of application of fertilizers, application of liquid fertilizers through drip irrigation, insitu green manuring, application of biofertilizers, pre harvest bunch spray, application of growth regulators, no: of irrigations to be given to banana crop, irrigation interval, method of irrigation (drip, furrow, basin) methods of drip irrigation, propping, bunch cover, application of herbicides, intercropping with cucumber, amaranthus or elephant foot yam, harrowing and earthing up, organic certification of products, time and method of harvesting, grading, storage and marketing. Required temperature for banana cultivation, required relative humidity for banana cultivation, required mean sea level for banana cultivation, sucker treatment, mulching, desuckering, packing and transportation were the items under low training needs of banana growers.

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