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A study on knowledge level of farmers regarding cultivation practices of areca nut in Chikmagalur district

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Abstract

The study was an “*ex-post-facto*” research conducted in Chikmagalur district of Karnataka State during the year 2018- 19, which is one of the traditional and largest arecanut growing district of Karnataka. In Chikmagalur district, two taluks were selected based on the highest area under cultivation of which total sample size was 100. The overall knowledge of farmers about cultivation of areca nut showed that 46.00 percent of the respondents belonged to medium level category followed by high (32.00%) and low (22.00%). The probable reasons might be that, a greater number of farmers were found to have high school and primary school education, which helps to acquire more knowledge on package of practices, and their varying degree of participation with organizational activities and extension programs and daily use of mass media with medium to high farming experience might helped them to get updated and new knowledge about cultivation of areca nut.

Keywords: Areca nut, knowledge, cultivation and package of practice

Introduction

Plantation crops are considered as major cash crops which plays major role in economy in terms of production as well as consumption and contributes to foreign exchange value. In that Areca nut or betel nut is the one of the major produced and consumed plantation crops in India.

Areca nut (*Areca catechu* L.) is species of palm and that have originated from Malaysia or Philippines. This areca palm belongs to the family of "Arecaceae" and genus of "Areca L". It called in variety of names in India according to region and language and common names are Supari (Hindi, Bengali, Marathi and Urdu), Adake, Pugu, Kaungu (Kannada), Vakka, Poka chekka (Telugu), Buah or Puah (Assamese), Atekka, Ghonta, kamuka (Malayalam), Kamugu, Pakku, Pugam (Tamil).

Traditionally areca nut got high value in Indian culture and people of all ages and all sectors are having positive and good opinion of consuming in form of chewing with betel leaf and lime. The processed and dried nuts of Areca is an important ingredient of religious and cultural ceremonies as well as consumption in daily in the form of Tambulam. It reveals the historical background that is in the 1st century AD, Sanskrit medical writings explained that betel nut possessed thirteen qualities found in the region of heaven. It is pungent, bitter, spicy, sweet, salty, and astringent. It was said to expel wind, kill worms, remove phlegm, subdue bad odors, mouth freshener, increase purification, and kindle passion. And its CNS stimulating effects, betel nut is used in India similar to the western countries use of tobacco or caffeine.

Production pattern of areca nut

Areca nut is one of the highest value commercial cash crops of Asian sub-continent, grown basically in the tropical hot and humid regions and one of the products has high import and export value in the world market. Due to its diversified usage value, areca nut gained a good position in the world market. As per the Food and Agriculture Organization (FAO), world production and area has shown an increasing trend. The world production of areca nut was around 13.37 lakh Tons with a total area of around 9.55 lakh hectares in the year 2017.

India ranks first in both area (48.00%) and production (54.00%) of areca nut. In India Karnataka is the leading producer of areca nut that 2.79 lakh hectares is under areca nut cultivation which forms around 53.8 percent of all India total. Its contribution to total production is around 6.06 lakh a ton that forms 67.00 percent of all India production in 2017-18. It is important to note that areca nut cultivation is undertaken with the varying extent in almost 28 out of 30 districts in Karnataka. Among which, Chikmagalur is leading producer of areca nut. The top 7 districts *viz.* Chikmagalur, Shimoga, Davangere, Dakshina Kannada, Tumkur, Chitradurga and Uttar Kannada occupy 90 percent of the area under areca nut and contribute around 90 percent of areca produced in the state.

Materials and Methods

In the present research study, *Ex-post facto* research design was used. This design was considered best because the incident has already occurred. The study conducted in Chikmagalur district of Karnataka state and it consists of 7

taluks. Among 7 taluks Koppa and Sringeri taluk were chosen because of highest area and production as well as provides best soil and weather conditions for areca cultivation so these talukas are considered as traditional areca nut growing area.

A list of 5 villages in both Sringeri and koppa taluks were selected based on information from Assistance horticulture officer of Karnataka state horticulture department of Sringeri and koppa taluks which had the highest area under areca nut cultivation.

From each village 10 respondents were selected randomly from 10 villages for the study of knowledge and of areca nut cultivation. Thus, the total respondents were 100.

Knowledge items were prepared by referring package of practices of arecanut recommended by the University of Horticultural Sciences, Bagalkot. Total 16 knowledge questions were administered to respondents, where multiple choice question method was used relating to the different and important cultivation practices of areca nut. The responses given from the farmers were calculated and according to "teacher made test".

The answers to the question were quantified by giving one score to correct answer and zero score to incorrect answer.

$$\text{Knowledge index} = \left[\frac{\text{Number of correct response}}{\text{Total number of knowledge items}} \times 100 \right]$$

Based on the response obtained, the respondents were classified into low, medium and high categories using mean and standard deviation as a measure of check.

Category	Score
Low	Less than (Mean - 0.425 SD)
Medium	Between (Mean \pm 0.425 SD)
High	More than (Mean + 0.425 SD)

Further frequency and percentage were calculated to present the data.

Results and Discussion

Knowledge of farmers on cultivation of areca nut

The result from Table 1 revealed that a very high percentage (80.00%) of areca nut growers had correct knowledge about suitable soil for cultivation the reason might be they know the importance of soil in farming. So good farming experience and aware of the package of practices of areca nut help to get the right knowledge in the selection of suitable soil. In the case of variety selection, 94.00 percent of the farmers had the accurate knowledge which is highest in all knowledge questions its due to variety play major role in orchard development, and its popularity of various people had high rate of success from past years among the members of society and due to good contact and good participation with organizations, extension activities, and with regular mass media use in daily life and with good educational level farmers with good farming experience helps to get good knowledge about variety.

Suitable season selection practice 84.00 percent of the respondents had the right knowledge as per the package of practices it is important to know the suitable season for

planting otherwise all seedling will die because of high rainfall, so farmers with a medium level of experience in farming, and good educational level helps to follow the package of practices.

In concern of stage of seedling, farmers had high knowledge of 81.00 percent which is by good farming experience and medium range of participation with mass media, organization participation and good experience and skills in nursery selection practices helps to get a high rate of knowledge regarding the age of seedling.

In maintaining spacing in areca nut farmers had medium range of knowledge of 65.00 percent due to low extension participation, demonstration and training program and medium range of participation in the organization and mass media caused in getting medium knowledge about spacing.

In regarding pit size of areca nut seedling farmers had only 57.00 percent knowledge due to low to medium participation of extension programs and medium range of experience also reason for medium knowledge of pit size.

In the context of FYM farmers of 76.00 percent were had right knowledge due to medium to high range of farming experience and good soil management practices is that use of farmyard manure is a traditional practice and farmers are using it since so many years. It is the best and least-cost method to maintain soil health and also improve the yield.

In using recommended chemical doses of chemical fertilizer farmers had 68.00 percent of knowledge is due to good education level helps to access the information and medium to high range of farming experience and subsidies from the government is might be the reason for right knowledge.

In regarding drainage maintenance farmers had very high knowledge of 92.00 percent this is because of high rainfall pattern and excessive waterlogging condition are dangerous to plant, so due to good farming experience in cultivation helps to get right knowledge regarding maintaining drainage. In the frequency of irrigation 90.00 percent of the farmers were having high knowledge of irrigation management. The possible reason might be that the majority of farmers belonged to middle age, high farming experience and mass media exposure. So, they were well aware of the benefits of irrigation and the abundance of water availability. In growing intercrops farmers had knowledge 74.00 percent because of high spacing of crops and good experience in farming and mass media using and they help to get additional income so farmers had the right knowledge regarding intercrops.

In growing mixed crops farmers had high knowledge of 80.00 percent due to high additional income, from mixed crops and due to subsidies from the government for spices and good education level. Farming experience and helps get the right knowledge about mixed crops.

In the growing of shading crops, farmers had the right knowledge of 72.00 percent. The possible reason might be it grows well in shades in initial days and with good experience in farming and mass media usage.

In concern of pest, only 65.00 percent farmers had right knowledge this is because of many of them to fail to identify right pest because of low access of books on agriculture and lack of scientific knowledge and low to medium extension participation.

Table 1: Knowledge of areca nut growers regarding individual recommended Cultivation practices n=100

Sl. No	Recommended practices	Knowledge	
		Frequency	Percentage
1.	Suitable Soil	80	80.00
2.	Recommended variety	94	94.00
3.	Suitable season	84	84.00
4.	Stage of seedlings	81	81.00
5.	Recommended spacing	65	65.00
6.	Pit size	57	57.00
7.	FYM rate	76	76.00
8.	Chemical fertilizer rate	68	68.00
9.	Drainage	92	92.00
10.	Irrigation frequency	90	90.00
11.	Intercrops	74	74.00
12.	Mixed Crops	80	80.00
13.	Shading trees	72	72.00
14.	Areca nut pest	65	65.00
15.	Areca nut disease	69	69.00
16.	Harvest stages	74	74.00

In concern of disease 69.00 percent farmers had the right knowledge, this is because of many of them to fail to identify disease attack and their reasons, because of low access of books on agriculture and lack of scientific knowledge and low extension participation in different programs.

In the knowledge of sprayers, 74 percent farmers had right knowledge because of the long height of areca nut trees and it needs very efficient sprayers for pesticide spraying rainy days and medium to high farming experience helps to get right knowledge regarding sprayers.

Overall knowledge of farmers regarding cultivation of areca nut

More than two-fifths of farmers (46.00%) had medium knowledge on cultivation of areca nut. Followed by 32.00 and 22.00 percent of them had high and low knowledge level on the cultivation of areca nut respectively. The probable reasons might be that, number of farmers were found to have high school and primary school education, which helps to acquire more knowledge on package of practices, and their varying degree of participation with organizational activities and extension programs and daily use of mass media with medium to high farming experience might be probable reason to acquire right knowledge about cultivation of areca nut.

Table 1: The overall knowledge of areca nut growers about recommended cultivation practices

Sl. No.	Knowledge Categories	Frequency	Percentage
1.	Low (< 11.785)	22	22
2.	Medium (11.785 - 12.634)	46	46
3.	High (> 12.634)	32	32
Total		100	100.00

Mean=12.21 S. D=0.997

Summary and Conclusion

At present, India is the highest producer and consumer of plantation in the world. Areca nut is one of the important plantation crops grown in India. While studying to the scope and importance of areca nut Indian Government established Directorate of areca nut and spice development board in 1966 and ICAR-Central Plantation Crops Research Institute

(ICAR-CPCRI) is a premier research institute established for coconut, areca nut and cocoa crops (1970) in order to improve research and extension of new technologies.

With regard to high producing and consuming country it places a very special place in Indian culture and people consuming every day in all age people, and its advantages, areca nut crop is being location specific and presently also we are importing 20 to 30 percent of areca nut. Since many years lot of research on areca nut has been done, it is important to generate new ideas in the field of improving the level of knowledge regarding the recommended cultivation practices of areca nut by the farmers. So, it is better to focus on an important area of cultivation aspects where farmers are lagging in knowledge and information regarding the proper package of practices and new technologies.

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