

THE LEVEL OF KNOWLEDGE OF NURSERY OWNERS IN THE PRODUCTION AND MARKETING OF SAPLINGS

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Abstract

The purpose of this study is to determine the level of knowledge of nursery owners in the production and marketing of saplings. Ninety four nursery owners were selected randomly from a total of 157 nursery owners under four Upazila of Rangpur district. An interview scheduled was used for the collection of data in 2011; and the results shows that 63.8% of the nursery owners had medium level of knowledge, while 36.2% had high level of knowledge. Findings also shows that farm size, annual income, innovativeness, communication exposure, training received, and involvement in nursery have positive significant relationships and constraints during production; and marketing has negative significant relationship with the level of knowledge of the nursery owners. However, the result of stepwise multiple regression indicates that 69.4% (Adjusted $R^2=69.4$) of the variance in the level of knowledge of the nursery owners could be explained using the explanatory variables of the study. This indicates that there are other variables working behind the level of knowledge of the nursery owners during production and marketing.

Keywords: Nursery, nursery owners, innovativeness, knowledge

Introduction

According to Oxford dictionary, knowledge may be defined as facts, information, and skills acquired through experience or education; and the theoretical or practical understanding of a subject. The importance of knowledge and information in the contemporary economy has been long established (see, for example, Bell, 1976; Block, 1990; Toffler, 1991; Mandel, 1975; Jameson, 1991, etc.). Thus, as a general proposition, the

notion that information and knowledge are of central importance both to the production process, as well as to the commodities produced, is essentially uncontroversial. Thus, the purpose of this paper is not to assert that information is not important, but rather to reflect on the actual "role" that knowledge and information plays in the production and marketing of saplings, and what factors that affects the level of knowledge of the nursery owners.

Nurseries are places where seedlings are raised for planting purposes. In the nursery, the young seedlings are tended from sowing to develop in such a way as to be able to endure the hard field conditions (Mason, 2004).

The nursery industry is a very wonderful and exciting business, as the production of plants for profit has the potential of providing many personal and financial rewards. However, just as many other farming enterprises that appears to be very simple on the surface, the nursery business is very complex and requires a great deal of knowledge and skill not only in production, but also in labour management and marketing.

The nursery industry is much diversified; hence, it is a business, and like any other business, the probability of success depends on imagination, determination, planning, and good management of the five major resources.

A successful nursery producer needs knowledge of plants, soils, fertilizers, pesticides, irrigation, machinery, pruning, harvesting methods, overwintering techniques, packing and conveyance practices, etc. It is not just about casting seed to the wind and watching the trees and profits grow.

Throughout the world, nurseries come in various types and sizes. Many are small family business, which is sometimes just a small hobby business to supplement the family's normal source of income. At the other end of the scale are large commercial enterprises that employ dozens of people and grow millions of plants No matter the size of a nursery, for it to be financially viable, it needs a good and knowledgeable person with good management capacity (Mason, 2004).

Many potential producers do not realize the skill and knowledge required to produce a quality nursery crop in the field. Another crucial item that is often under-estimated is the amount of money that is required to produce a saleable plant. Ahmed (2003) reported that nursery is one of the most important income based activities in Bangladesh, which has led to poverty reduction and socio-economic improvement of the poor section of the population.

The nursery business has already cast a very positive impact on rural economy in terms of poverty alleviation and women empowerment. Yearly, tree plantation program by government, NGOs and professional bodies, peoples' awareness, environmental factors etc. increase the demand of saplings every year, and hence more and more people including women

involved at their land and homesteads are setting up newer nurseries throughout the region (BSS,2011).

So, it is therefore important to have sufficient level of knowledge of the nursery owners for the production of quality saplings and for their financial viability. Hence, assessments of knowledge level among nursery owners on production and marketing have become an important issue which needs to be explored. Therefore, the objective of the study was conducted to assess the level of knowledge of nursery owners in the production and marketing of saplings.

Materials and Methods

This Chapter deals with the presentation of methods and the procedures followed to operationalize the study, specifically the measurement of variables. The discussion also contains the method of collecting information and statistical analysis of the data.

Study Area

The study was conducted in of four upazila under Rangpur district. All the nursery owners of the selected areas constitute the population of the study. No study of this type was conducted previously in this area and many nurseries were available in the study area within a short boundary which were the two main reasons for the selection of the research site.

Sampling Technique

The total list of nursery owners in these four selected upazila was prepared with the help of the Nursery Malik Samiti, Rangpur. The number of nursery owners in the specified upazila's was found to be 157. Out of them, 60% of the population were selected by random sampling method. Thus, 94 nursery owners were the sample for this study. These 94 growers were considered as the representative of the four upazila of Rangpur district in Bangladesh.

Data Collection

The data were collected from the sampled respondents in 2011. A questionnaire consisting of structured items was designed for the collection of primary data. Data were collected by the researcher himself through survey by face to face interviews with nursery owners during their farm activities.

Statistical Analysis

The data of different groups was compiled and analyzed in various aspects of the respondents. The data was statistically evaluated and simple

percentages and standard deviation were calculated. The correlation between the level of knowledge and other variables was explored using spearman's test. All statistical analysis was done using SPSS 16.0 software. P value < 0.05 was considered as significant; and a stepwise multiple regression analysis was used to understand the factors influencing the level of knowledge of the nursery owners during their production and marketing of saplings.

Table 1. Distribution of Nursery Owners in the Study Area

Name of the upazila	Total number of the nursery owners	Sample size
Rangpur Sadar	32	94 (60% of the total population)
Mithapukur upazial	61	
Gongachora upazila	27	
Kaunia upazila	37	
Total	157	

Variables of the Study

In a descriptive social research, selection and measurement of the variables is an important task. In this connection, the researcher reviewed literature as far as possible to widen his understanding about the nature and scope of the variables relevant to his research. The hypothesis of a research, when constructed properly contains at least two important elements, viz. an independent variable and a dependent variable. Independent variables of the study were age, level of education, farm size, annual income, involvement in nursery, communication exposure, training received, innovativeness, ambition and constraints during the production and marketing of saplings; while dependent variable was the level of knowledge of the nursery owners during the production and marketing of saplings.

Measurement of Knowledge on Nursery Owners

For measuring knowledge of nursery owners during production and marketing of saplings, researcher followed the revised Bloom's Taxonomy techniques. In this case, knowledge was measured by 18 questions on six main capacities of respondents, i.e. remembering, understanding, applying, analyzing, evaluation and creating the capacity of the nursery owners during production and marketing of saplings. Scores were assigned for correct responses of different questions, and point assigned for correct responses of different questions were 2 and 3 according to the nature of the questions. For correct responses to all the 18 questions, a respondent could get a total score of 40, while for wrong responses to all the 18 questions a respondent could get zero. Therefore, the knowledge of the nursery owners could range from 0-40, where "0" indicates no knowledge and 40 indicates very high knowledge.

Results and Discussion

The level of knowledge of a nursery owner is the foundation of his/her nursery business. The level of knowledge of the nursery owners varies from 14 to 34 against a possible range of 0 to 40. The average knowledge score was found to be 25.56 and standard deviation was 4.362. Based on the observed overall knowledge score, the respondents were classified into three categories as shown in Table 2.

Data presented in Table 2 shows that the highest proportion (63.8 percent) of the growers had medium level of knowledge compared to 36.2 percent which had a high level of knowledge. Here, in the study there were no nursery owners who fall in the category of low level of knowledge and this is due to the fact that if nursery owners have low level of knowledge who receive high level of education but if they are less involved in farming, they would not be able to continue their nursery business because all of the activities in nursery is highly technical, and for the smooth running of the nursery business, they should possess some sort of knowledge regarding the production and marketing of saplings.

Table 2. Classification of the Nursery Owners according to their Level of Knowledge

Characteristics	Range		Categories	Respondents		Mean	Standard deviation
	Possible	Observed		Frequency	Percentage		
Level of knowledge of the nursery owners	0-40	14-34	Low (up to 13)	0	0	25.56	4.362
			Medium (14-27)	60	63.8		
			High (above 27)	34	36.2		

Source: Result of author's analysis (2013)

Relationship between Agricultural Knowledge and other Characteristics of the Nursery Owners

The different characteristic of the nursery owners played a vital role in determining their level of knowledge on the production and marketing of saplings. The result (Table 3) reveals that among the 10 selected characteristics of the respondents, farm size, annual income, involvement in nursery, communication exposure, training received and innovativeness had significant positive relationship with the level of knowledge of the nursery owners regarding their production and marketing of saplings. But constraints during production and marketing of saplings of the nursery owners had a significant negative relationship with the level of knowledge of the nursery owners. It means that the superior the constraints of the nursery owners during their production and marketing, the inferior the level of the knowledge of the nursery owners.

Table 3. Correlation co-efficient between the selected characteristics of the growers and their adoption of improved practices in soybean cultivation

Selected attributes of the nursery owners	Correlation co-efficient (r) with level of knowledge of the nursery owners
Age	-0.055
Education	0.089
Farm size	0.230*
Annual income	0.455**
Involvement in nursery	0.425**
Communication exposure	0.605**
Training received	0.376**
Innovativeness	0.268**
Ambition	0.045
Constraints	-0.693**

**p< 0.01; *p<0.05

Source: Result of author's analysis (2013)

The significant and positive relationship between innovativeness and knowledge was also reported by *Manoj (2000)*, *Venkatesan (2000)* and *Jaganathan (2004)*. Since an innovative farmer would be more curious enough to use all modern practices relatively earlier than others and look forward for latest information on saplings production and marketing.

Communication exposure which also had a significant and positive relationship with knowledge level reveals that frequent discussion, interaction, meetings etc. with scientists, experts and extension personnel enhance their knowledge level as earlier reported by *Elakkia (2007)*.

Factors Responsible for the Level of Knowledge of Nursery Owners during their Production and Marketing of Saplings

Stepwise multiple regression analysis (Table 4) shows that out of ten (10) explanatory variables, only five variables finally entered in the model, and combination together of these variables contributed to 69.4% of the total variance with respect to the level of knowledge of nursery owners during their production and marketing of saplings.

Table 4. Result of the step wise multiple regression analysis showing contribution of the selected independent variables on level of knowledge of the nursery owners during the production and marketing of saplings

Model	Combination of explanatory variables	Co-efficient of determination	Adjusted R ²	% increase in adjusted R ²	F-value
1	Constant+Total constraints	0.481	0.475	47.5	85.151
2	Constant+Total constraints+Involvement with nursery	0.592	0.583	10.8	65.970
3	Constant+Total constraints+Involvement with nursery+ Communication exposure	0.659	0.647	6.4	57.892
4	Constant+Total constraints+Involvement with nursery+ Communication exposure+Training received	0.693	0.679	3.2	50.239
5	Constant+Total constraints+Involvement with nursery+ Communication exposure+ Training received+Age	0.710	0.694	1.5	43.103

Source: Result of author's analysis (2013)

The significant contribution was made by total constraints of nursery owners during production and marketing of saplings, involvement with nursery, communication exposure and training received as well as the age of the nursery owners. However, constraints during production and marketing of saplings of the nursery owners solely contribute highest (47.5%) to explain the level of knowledge of the nursery owners.

It may be assumed from the result from the stepwise multiple regression analysis that nursery owners with more knowledge and skills on production and marketing have less constraint during their production and marketing of saplings. Nursery owners' involvement with nursery, their communication exposure and training on different production and marketing aspects makes them potential and successful entrepreneur's, thus more training program, their engagement with nursery activities and regular communication should be increased for the nursery owners as well as for the betterment of this sector.

Conclusion

The findings of this study and the logical interpretations of their meaning in light of other relevant facts prompted the researcher to draw the following conclusions: The level of knowledge of the nursery owners had a

significant and positive relationship with their different attributes like farm size, annual income, involvement with nursery, communication exposure, training received and innovativeness. To enable the nursery owners acquire the knowledge on saplings production and marketing, it is worthy to increase involvement with nursery, annual income, farm size, communication exposure, innovativeness and training. An attribute i.e. constraints of the nursery owners during production and marketing, have a significant negative relationship with their level of knowledge. Finally, five factors (constraints, involvement with nursery, communication exposure, training received and age of the nursery owners) are responsible for highest variation (69.4%) in their level of knowledge during production and marketing of saplings. Hence, it was suggested that the concern policy makers should employ careful initiative in upgrading the level of knowledge of the nursery owners, so that nursery owners as well as nursery business may become a highly profitable enterprise in Bangladesh and as such contribute significantly to national economy.

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