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Analysis of Farmers Willingness to Adopt Mushroom Cultivation in Ughelli North Local Government Area of Delta State

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ABSTRACT

This study was carried out to analyze farmers' willingness to adopt Mushroom cultivation in Ughelli North Local Government Area of Delta State. Simple random techniques were used to select a sample size of 90 respondents in three villages. Questions were asked on awareness of mushroom cultivation, gender and level of education of farmers within the area under study. Structured questionnaire was used to collect the relevant information from the farmers. Data analysis was carried out using descriptive statistics such simple frequency table count, and percentage. Analysis revealed that only seventeen farmers out of ninety are willing to cultivate mushroom which is about 18.9%. Gender of the farmers and their level of education had no effect on the willingness of the farmers to adopt mushroom cultivation. It was observed that farmers' in the area under study has not adopted the cultivation of mushroom because they lack awareness of the usefulness of mushroom cultivation and also the techniques required to cultivate mushroom.

Keywords: Mushroom, Adopt, Cultivation, Farmers

Introduction

Background of the Study

Mushrooms are fungi which have fruiting bodies large enough to be seen with the naked eyes[1]. Generally, mushrooms are characterized with highly nutritional value, thus desirable component of human diet. Examples of edible mushrooms are *pleurotus spp, Agaricus spp, Auriculla Spp, Lentinula Spp* etc. The issue at hand now is that mushroom cultivation and production has initial problem of development due to lack of basic information on the growth requirement of these fungi. The traditional system of mushroom production include site preservation on which forms substrate upon which the mushroom is cultivated. However the improved method of production entails the cultivation of mushroom

in a controlled darkroom which involves 5 stages; bed preparation, spawning, casing, harvesting and packaging. For the past 20 years, interest in the medicinal aspects of mushroom has greatly been stimulated by the number of scientific studies conducted on mushrooms. The most recent mushroom of high medicinal value that was introduced is *Gunoderma Spp*. The fruiting bodies have traditionally been used for medicinal purposes for thousands of years and have been regarded by the Chinese to be a high quality herbal medicine. It has been used clinically since ancient times in china for the treatment of fatigue, coughing, asthma, indigestion neurosis and a variety of other disease. *Ganoderma Spp* is available in many countries in the form of dried fruiting Bodies, Capsulatonic and instant teas; being a tropical fungus, thus mushroom can be widely cultivated using sawdust and other tropical agricultural waste such as palm fibre, cocoanut waste and rice straw.[2]

Adoption is the acceptance of a new idea and it is a complex process which apparently involves a sequence of thoughts and actions about which we have limited knowledge. Fortunately, many new innovations have been provided by research workers about the knowledge required to increase the efficiency of agricultural production, distribution, marketing and family uses of farm products in Nigeria. However, we need more information about what influences the Nigerian farmer in formulating his goals of production, the decision he makes and his readiness to accept new innovations[3]. Nigeria is among the least consumers of animal protein in the world while North America, Western and Eastern Europe consume 66, 39 and 33kg/head/kg of animal protein respectively. The average value for Nigeria is estimated to be 7.5g/head/day[4].This is far low from the recommended 35/g/head/day by the food and Agricultural Organization[5].

Statement of Problem

The demand for mushroom products in Nigeria is low. There is this fear that the cultivated species of mushrooms are poisonous, but even the harmless ones are still not cultivated to increase farmers income, welfare and also the health of the nation as a whole. This is a threat to the whole nation as the importance of animal protein cannot be over emphasized. Hence at this point, one has to analyze the willingness of farmers to adopt mushroom (which is a major source of protein) cultivation.

Purpose of the Study

The purpose of this study is to analyze farmers' willingness to adopt mushroom cultivation in order offer positive suggestion on how farmers can adopt

mushroom cultivation on a large scale to boast the health of the nation and also for economic growth.

Significance of the Study

This study is significant because the outcome of it will hopefully be of great help to ministries of agriculture, agricultural extension officers, agencies of agriculture and also for economic development. It can also be used as a guide to encourage farmers to go into large scale cultivation of mushroom as it will boom the agricultural sector of the economy.

Limitation of the Study

Due to high cost of transportation to the project site, high level of illiteracy among most of the respondents, they were ignorant of the method of mushroom cultivation. As a result, most of them could not respond positively to the researcher.

Research Question

This study attempts to answer the following questions:

1. Are farmers in the area under study aware that mushroom can be cultivated?
2. Does gender affect the willingness of farmers to adopt mushroom cultivation?
3. Does the level of education affects the willingness of farmers to adopt mushroom cultivation?

Hypothesis

This study hopes to investigate the following specific hypothesis

1. There is a significant difference between the willingness of farmers who are aware that mushroom can be cultivated and those who are not aware.
2. There is no significant difference between the willingness of male farmers and the willingness of female farmers to adopt mushroom cultivation.
3. There is a significant difference between the willingness of farmers who are educated and the willingness of farmers who are not educated.

Literature Review

Prehistoric men used mushroom as food and traditional medicines. Mushroom is a macro-fungus with distinctive fruiting body which can either be epigeous or hypogeous and large enough to be seen with naked eyes and picked by hand[6]. Research reveals that mushroom cultivation was started by French horticulturist in the 17_{th} century but not until recent time that mushroom are

produced with extensive research into the biology and development of *Pleurotus Species.* Mass cultivation of mushrooms has occurred in countries such as France, Poland, Italy, U.S.A, U.K, India and Japan using approved biological technologies[7]. Mushroom farming is still at its infancy and there are still chances of accidental poisoning due to collection from the wild. Mushroom cultivation could possibly offer the solution for poverty alleviation in this situation. Cultivation of mushroom serves as a tool in the search for a suitable economic use of agricultural waste such as sawdust and rice straw. It is useful in biological and biotechnological process, bioremediation and degradation of pollutant[8].

Meaning of Adoption

Adoption can be defined as the process whereby a person accepts new idea or innovation which he or she has no knowledge about[9]. Adoption has been defined as a mental process through which an individual passes from first learning about an innovation to the complete incorporation of such innovation into his system of operation or behavior[10].

Adoption Process

Adoption is a decision to continue full use of an innovation. Farmers do not accept innovation immediately. They need time to think over it before making decisions. It was observed that there are five processes in adoption before an individual accepts an innovation. The individual first become "aware" of innovation or new idea and if the innovation is relevant to his needs, he becomes "interested" and seeks additional information about the innovation of his "evaluation" and if it is favourable, he may decide to give it a "Trial" by applying it on a small scale to determine its satisfaction under his present condition. Finally, after the trial, that individual may decide to apply the innovation thereby "adopting" it[11]. Research shows that for any technology or innovation to be adopted, it must be economically dependable, technically feasible, infrastructural compatible and socially acceptable[12].

The Need for Agricultural Extension in the Adoption Process

A greater part of agricultural development takes place within the context of Agricultural Extension Services. Agricultural Extension Services is the major determining factor of success in agricultural development. Participating extension approaches (P.E.A.) is a way of improving the effectiveness of rural extension effect by government agencies and its role includes integrating of community, mobilization for planning and action with rural development. P.E.A also promotes farmers capacity to adopt and develop new and appropriate

technologies or innovation of agricultural technologies and practices. Lastly, the extension agent assist farmers in search for solution by providing background information knowledge and options and encourage farmers to experiment with the options and ideas[13].

Factors Affecting Adoption

The major factors influencing the rate if adoption is the real or anticipated profile of technology, however non-economic variable can sometimes be important. The obstacles among the farmers and their immediate mandate have been identified as traditional value, belief, illiteracy, lack of motivation, insufficient skills and limited aspirations[14]. Education can create the awareness and need for seeking more useful sources of information on improved innovation or technology hence it may influence adoption[15]. Risk and uncertainties are considered as factors affecting the rate of adoption. The major factors that affect adoption are; size of farm land, personal characteristics, sociological characteristics, values and goals norms and compatibility with ideas and beliefs[15].

Research Methodology

In order to analyze the willingness of farmers to adopt mushroom cultivation in Ughelli North Local government area of Delta State, the researcher visited 90 respondents (Farmers) in three villages.

Population of Study

There are nine clans in Ughelli North Local Government area of Delta State, however the researcher was only able to visit three clans.

Data Collection

A well structured questionnaire was constructed with both close end and open end question. The questionnaire was divided into three sections;
Section A: Deals with farmers' awareness of mushroom cultivation.
Section B: Deals with gender and willingness to cultivate mushroom
Section C: Deals with level of education and farmers willingness to adopt mushroom cultivation.

The data for this research work were collected from the questionnaires that were retrieved. A total of 105 questionnaire were administered in three villages to determine farmers willingness to adopt mushroom cultivation, however only 90 questionnaire was retrieved.

Method of Data Analysis
The data collected were subjected to descriptive statistics such as frequency count and percentage.

Result and Discussion
Data analysis for this study was done with reference to the research questions and hypothesis already formulated.

Hypothesis I
There is significant different between the willingness of farmers who are aware that mushroom can be cultivated and those who are not aware.

The above hypothesis was tested using the data in table 1. From the table, result shows that the percentage willingness of farmers who are aware is very low compared to the willingness of those who are not aware.

Hypothesis II
There is no significant difference between the willingness of male farmers and the willingness of female farmers to cultivate mushroom.

The above hypothesis was tested using the data in table 2. Form the table, results shows that the percentage of male farmers willing to cultivate mushroom is very high compared to the percentage of female farmers willing to cultivate mushroom.

Hypothesis III
There is a significant difference between the willingness of farmers who are educated and the willingness of farmers who are not.

The above hypothesis was tested using the data in table 3. Form the table, result shows that the percentage willingness of educated farmers is almost equal to the willingness of non-educated farmers.

Analysis of Results
The data in table 1 revealed that the percentage willing of farmers who are aware that mushroom can be cultivated is very low compared to the percentage willingness of farmers who are not aware. Therefore the alternative hypothesis 1 is accepted. The data in table II revealed that the percentage willingness of male farmers is very high compared to the percentage willingness of female farmers. The null hypothesis II is therefore rejected. The data in table III

revealed that the percentage willingness of farmers who; completed primary school, did not complete primary school, completed secondary school and those who did not complete secondary school are almost the same. Therefore level of education has no significant effect. The alternative hypothesis is therefore rejected.

Summary Conclusion and Recommendation

Summary

This research work from the beginning has discussed the analysis of farmers willing to adopt mushroom cultivation in Ughelli North Local Government Area of Delta State.

The researcher through his finding observed the following;

i. Only few farmers are aware that mushroom can be cultivated and as a result only few of them are willing to cultivate mushroom
ii. Gender has no effect on the willingness of farmers to adopt mushroom cultivation.
iii. Level of education also has no effect on the willingness of farmers to adopt mushroom cultivation.

Conclusion

In view of all that have been discussed so far on the willingness of farmers to adopt mushroom cultivation, farmers and even non farmers irrespective of their gender, and level of education should be informed and trained on the techniques of mushroom cultivation.

Recommendations

Based on the research findings and results, the researcher has suggested the following;

- Farmers should be taught the economic importance of mushroom in order to encourage more framers to adopt mushroom cultivation.

- Extension agent should enlighten farmers because most of them think that mushroom is not lucrative. Extension agents should therefore educate farmers that mushroom can serve as food and also for medicinal purposes.

- Government should adequately fund and establish agricultural research institutes at strategic locations so that they can act as advisers to the government on issues relating to mushroom cultivation.

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Table 1: Farmers' Awareness and Willingness to Adopt Mushroom Cultivation.

Awareness of mushroom cultivation	Frequency	Percentage	Willingness to cultivate mushroom	Percentage
Yes	31	34.4	17	18.9
No	59	65.6	73	81.1

Table 2: Gender of Farmers' and Willingness to Adopt Mushroom Cultivation.

Gender of farmers	Frequency	Percentage	Willingness to cultivate mushroom	Percentage
Male	47	52.2	12	70.5
Female	43	47.8	5	29.5

Table 3: Farmers Level of Education and Willingness to Adopt Mushroom Cultivation.

Level of education	Frequency	Percentage	Willingness to cultivate mushroom	Percentage
Completed primary school	23	25.5	5	29.5
Incomplete primary school	27	30	4	23.5
Completed secondary school	14	15.5	4	23.5
Incomplete Secondary school	26	29	4	23.5

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