



Competencies required by Agricultural Education Lecturers in Bee Keeping for Effective Teaching of Bee Production in Tertiary Institutions in Southeastern Nigeria

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ABSTRACT

This study identified competencies required by agricultural education lecturers in bee keeping for effective teaching of bee production in tertiary institutions in South-Eastern States of Nigeria, namely Abia, Anambra, Ebonyi, Enugu and Imo. Four research questions were posed to guide the study and four hypotheses formulated and tested at 0.05 level of significance. Descriptive survey research design was used for the study. The population for the study was 311. The entire population was used for the study because of the manageable size. Bee production item questionnaire made up of 54 competencies was used for data collection. The instrument was validated by three experts. Cronbach Alpha reliability method was used to determine the internal consistency of the instrument. A Cronbach Alpha coefficient of 0.74 was obtained. Three hundred and eleven copies of the questionnaire were administered to the respondents by the researchers with the help of three research assistants. All the administered copies of the questionnaire were retrieved and analyzed using mean, standard deviation and t – test. The researcher observed that agricultural education lecturers required 18 competencies in planning, 19 competencies required in site selection and construction of beehives for bee production and 17 competencies required in harvesting and marketing of Bee production. It was recommended among others that the identified competencies be used by the agricultural education lecturers in teaching bee production to tertiary institution students.

Keywords: Bee production, Competencies, Effecting teaching, Tertiary institution, Agricultural Education

INTRODUCTION

Bees are flying insects closely related to wasps and ants. Robberts (2009) defined bees as monophyletic lineage within the super family "Apoidea", presently classified by unranked taxon named Anthrophila. Bee in the opinion of Farlex (2013) is defined as any of the several hairy bodied, winged, stinging insect with piercing and sucking mouth part for gathering pollen and nectar. A bee in this study is a hairy bodied stinging flying insect with piercing and sucking mouth part for gathering pollen grains and nectar for production of honey and other bee products. Such bees that produce honey can be referred to as honeybee. Honeybee according to Michener (2007) is a subset of bees in the genus *Apis* primarily distinguished by the production and storage of honey in addition to construction of colonial nest. Honeybees in the view of Pestworld for Kids (PFK, 2013) live in colonies in natural cavity or man-made hives and have the tendency to produce honey and other products from pollen and nectar of plants. Honey bees form nectar into honey by a process of regurgitation and store it as a primary food source in wax honey combs inside the beehive. In the hive, the bees use their honey stomachs to ingest and regurgitate the nectar a number of times until it is partially digested (Standifer, 2007). The bees work together as a group in the regurgitation and digestion until the product reaches a desired quality and stored in honey comb cells. After the final regurgitation, the honey comb is left unsealed. Bee products according to Eric, Harry, Robbin and Lee (2002) include honey, wax, pollen and propolis among others. Bee products in this study include honey, wax, pollen, royal jelly and propolis. Bee products are highly valued throughout the world.



Nutritionally, Honey is sweet with its unique composition and chemical properties suitable for long term storage and is easily assimilated even after long preservation. Honey and materials immersed in it has been preserved for decades and even centuries. The main uses of honey are in cooking, baking, as a spread on bread, as an additive to various beverages such as tea and as a sweetener in some commercial beverages. Honey is also the main ingredient in the alcoholic beverages known as honey wine and honey beer. Dalt (2001) stated that exporters as well as consumers value and constantly demand bee products (honey). In the view of Leen, Willen, Piet and Hayo (2005) the demand for bee-products in many countries of the world is high. Ntega & Muogongo in Olaitan, Ifeanyieze and Omeje (2008) explained that bee products are highly valued because of their food, medicinal and industrial uses. Curtis (2002) noted that bee products like pollen is considered one of the most complete natural food for man and bee itself since it is rich in protein, vitamins and minerals. Albert (2012) explained that bee products like pollen are used as anti-fungal, anti-bacterial and anti-viral medicines. Jack (2006) stated that bee products like royal jelly regulates nerve impulses, enhances the ability to think clearly, alleviates pains and inhibits ageing. In the view of Timil Nadu (2008), viewed that many bee products are used in pharmaceutical industries for manufacturing candle, cosmetics, shoe polish, adhesive and others. Many individuals obtain these products through bee keeping.

Beekeeping (apiculture) according to Agrolod (2000) is the manipulation of bee colony by man based on understanding of the science of tapping the economic benefits of bees. In the opinion of Idris (2000) beekeeping is the art of rearing bees for their by-products to obtain income and medicinal values in addition to the benefit of pollinating agricultural crops. Olaitan, Ifeanyieze and Omeje (2008) viewed beekeeping as an agricultural activity whereby beekeeping farmers employ their understanding of bee biology to provide good housing, appropriate feeding in addition to needed management practices for the purpose of harvesting the honey. Anie (2009) noted that beekeeping is the art of caring for and managing, nursing and manipulating bee colony so that they will store quantities of honey and other bee products. Bees can be kept effectively and conveniently in a farmland close to a stream or river at a distance of about 100 – 200 meters away from fertile sports of the farmland. The important thing is to have good pollen close by for bees to forage from. Beehives are shallow containers that can be closed and purposely made for attracting and arming bees for honey production. Different bee farmers use different types of beehive. In some areas people who have no hive raid the colony of bees in natural habits where they are discovered. Various types have been invented, developed and improved upon for many years in different countries based on the species and climate of such country to enhance the production efficiency of the bee farmers Bidem (2000). He further noted that there are many types of beehives, such as Kenya top beehive, Langstroth movable frame work hive and traditional hives. These hives are made to house bees for honey and other bee products. For bees to be domesticated, the beehive has to be built in the standard dimension to house the bees for production of honey and other hives products. According to Adjara (2001) the choice of hive must be in relation to the available resources of the farmers, he further has the following as construction patterns of langstroth hive which are



commonly used. Brood chamber with a fix bottom board and flight board, on top of which a bottomless brood chamber is placed. In the bottom board leave a ventilation hole of about 15 – 30cm covered with wire mesh. The brood chamber holds about 10 frames, which are kept separated at the correct comb distance by means of side bars, nails or staples. Honey super with 9 or 10 frames each placed on top of the brood chamber. For better ventilation, place 4 little blocks of wood 1cm high on the inside corners of the outer cover, for air to pass underneath.

In the context of this study, beekeeping is an agricultural activity whereby interested lecturers apply their knowledge to provide good housing, appropriate feeding and needed management practices to bees for the purpose of harvesting their products for income. A bee colony could be established and managed by a lecturer. A lecturer is a person who is trained in pedagogy and technical areas of a subject. Agbulu and Wever (2011) defined a lecturer as a person who attempts to help someone acquire some knowledge, skills, attitude, and idea. The authors further explained that lecturer is someone who undergoes the necessary and recommended training in teaching preparatory programs and is charged with the full responsibility for managing the classroom in such a way as to enhance the learning behavior of the students. Olaitan and Mama (2001), stated that a lecturer possesses the following human qualities which made him stand out among other professionals. The qualities are: Physically fit, Confident at all times, Committed to his job, be innovative, Self-control, Mastery of the subject he teaches, among others. Also, a teacher of animal husbandry can be viewed as a person trained in scientific and professional judgment and concern for the humane treatment of animals are required for the proper care of animals used in agricultural research and teaching and charged with the responsibility of imparting acquired knowledge, skills and attitude to students in an institution. Thus, having the practical knowledge of which will earn students income if put the learned competencies into practice.

Competency in the view of Grove (2003) is a quality or state of being functionally adequate of having knowledge, skills or strength as for a particular duty or respect. Competency as explained by Alawa, Abanyam and Okeme (2010) is the successful performance of a task through the use of knowledge, skill, attitude and judgment. The authors emphasized that competency can also be referred to as the state of being functionally adequate in performance of one's duty. Competency in the opinion of Cooper and Graham (2001) involves training situation where trainees have to attain a small number of specific and job-related competencies. This ensures that participants build confidence as they succeed in mastering a particular competency. Competency as explained by Taba in Olaitan (2003) lays emphasis on knowledge, skills, attitudes and judgment which is generally required for successful performance of task rather than all the components comprising the tasks. The author stated that competency-based analysis involve the identification of relevant elements and using them to carry out some works. To be competent means that individual has acquired knowledge, skills and attitudes which are required for performing successfully at a specified proficiency level in any given work.



In the context of this study, competency is the ability of the lecturer to effectively teach bee production.

Production as explained by Ebong (2000), involves the utilization of technical transformation of resources into output. Production is the planting of a given crop which progresses from young seedling through subsequent phases of growth and development to the mature harvestable product (Harper, 2000). Production can also be defined as the combination of different inputs or resources with the aim of creating a given output (Uko, 2003). In the view of Ekong in Ella (2003) production is the management of factors like land, labour and capital including entrepreneur to create goods for the improvement of the economic status of an individual and the living standard of society members. Iwena (2008) defined production as all the activities geared towards creation of goods and services for man's benefit. MarckWardart (2001) defined production as the process of bringing into existence by intellectual or creative ability. According to Ezeh (2006), production is the process of making or growing things such as food or material in large quantity. Anyamouocha (2001) asserted that production is only said to be completed when the product gets to the final consumers. Therefore, bee production is the combination of resource inputs for the purpose of obtaining honey as outputs and making them available to the final consumers. The activities in bee production are grouped into planning of beekeeping, site selection and construction of beehives. In South-Eastern States, some farmers practice beekeeping but depend on natural harvesting of honey from the bush. They also use traditional method learnt from their forefathers. They regard beekeeping as part of hunting and a game of luck thereby paying less attention to the competencies required for bee production. In tertiary institutions, Lecturers of Agricultural Education do not exceed the content of the curriculum, which is void of skill; hence most of the Agricultural education students graduate from school without skill in bee production. Some of the students who graduated from school secured admission to higher institution while some could not. Those who stayed with their parents as dropouts could not get satisfaction with the traditional methods or techniques adopted by their parents in bee production. They therefore constitute problems for people by engaging in anti-social behavior in school and after school. The problem made the researcher to interact with some lecturers in the area to find out the possibility of helping the students in effective teaching of bee production. The interaction of the researcher with some of the lecturers in the area revealed that they want to teach students bee production, but need to know the competencies required in beekeeping. This necessitated the study to enable these lecturers to impart these required competencies to the students of tertiary institutions in South-Eastern States of Nigeria; hence the study.

PURPOSE OF THE STUDY

The main purpose of this study is to identify competencies required by agricultural education lecturers in bee keeping for effective teaching of bee production in tertiary institutions in South-Eastern Nigeria. Specifically, the study sort to identify the Competencies required by lecturers in:



- i) Planning of beekeeping for bee production in tertiary institutions in South-Eastern Nigeria.
- ii) Site selection and construction of beehives for bee production in tertiary institutions in South-Eastern Nigeria.
- iii) Harvesting of bees for effective teaching of bee production; and
- iv) Marketing of bee products for effective teaching of bee production.

RESEARCH QUESTIONS

The following research questions will guide the study: -

- i) What are the Competencies required by lecturers in planning of beekeeping for bee production in tertiary institutions in South-Eastern Nigeria?
- ii) What are the Competencies required by lecturers in site selection and construction of beehives for bee production in tertiary institutions in South-Eastern Nigeria?
- iii) What are the Competencies required by lecturers in harvesting of bees for effective teaching of bee production?
- iv) What are the Competencies required by lecturers in marketing of bee products for effective teaching of bee production?

HYPOTHESES

The following null hypothesis were tested at 0.05 level of significance in line with purpose of the study.

- i) There is no significant difference in the mean ratings of lecturers on the competencies required by lecturers in planning of beekeeping for bee production in tertiary institutions in South-Eastern Nigeria.
- ii) There is no significant difference in the mean ratings of lecturers on the competencies required by teacher's in site selection and construction of beehives for bee production in senior secondary school in South-Eastern Nigeria.
- iii) There is no significant difference in the mean ratings of teachers on the Competencies required by teachers in Harvesting of bees for effective teaching of bee production.
- iv) There is no significant difference in the mean ratings of teachers on the Competencies required by teachers in Marketing of bee products for effective teaching of bee production.

METHODOLOGY

This study was carried out in tertiary institutions in South-Eastern Nigeria, namely Abia, Anambra, Ebonyi, Enugu and Imo. Four research questions and four hypotheses guided the study. Descriptive survey research was adopted for the study. This design according to Nworgu in Asogwa, Onu, and Egbo (2013) is a design in which group of people or item is studied by collecting and analyzing item from few people or item considered to be a representative of the entire group sample. The design was suitable for this study because the opinions of the representative of respondents were assessed using questionnaire and the findings was generalized on the entire population of the respondents. The population for this study was 311 made up of 255 lecturers of agricultural education in universities and 56 instructors of agricultural education in colleges of education. The entire population was used for the study because the size was small and



manageable. Hence, there was no sampling. The instrument that was used for data collection was Competency Required in Bee Production Questionnaire (CRBPQ). The respondents identified which of the competencies required in planning, site selection and beehive construction, harvesting and marketing in bee production using four point scale of Highly required (HR), Averagely Required (AR), Slightly required (SR) and Not required (NR). It is made up of two sections. Section one is on background information, while section two consists of 3 Parts. Part A contains 18 items eliciting information on planning, Part B contains 19 items eliciting information on sitting, Part C contains 17 items eliciting information on the harvesting and marketing of bee products.

In order to make sure that the final copy of the questionnaire is valid for the study, the researcher submitted the questionnaire to some experts in the department of agricultural education for face validation. Based on the input of the experts a final copy of the questionnaire was produced. The reliability of the instrument was established using Cronbach Alpha reliability test to ascertain the internal consistency of the instrument. A Cronbach Alpha coefficient of 0.74 was obtained. Three hundred and eleven (311) copies of questionnaire was administered to the respondents by the researchers with the help of three research assistants from each state. The researcher and his three research assistants administered and collected the questionnaire from the respondents in a week time. The mean and standard deviation was used to answer the research questions while t – test statistic was used to test the hypotheses at .05 level of significance. Questions 1 - 4 was analyzed by computing the mean scores of each of the items, any item with the mean score of 2.50 or above was considered as required competency while any item with the mean score below 2.50 was considered not required competency. The hypotheses of no significant deference was accepted for any item whose t- calculated value was less than the t – table value at .05 level of significance.

RESULTS

The results of the study were obtained from the research questions answered and hypotheses tested in table 1 to 3.

Table 1: Mean Ratings, Standard deviation and t-test Analysis of the Responses of Male and Female Agricultural Education Lecturers on Competencies Required in Planning of Beekeeping for Effective Teaching of Bee Production

S/N	PLANNING	X	SD	t-cal	REMARK
1.	Make contact with established bee keeping farmers	3.13	1.36	0.76	Required
2.	Formulate specific objectives for bee keeping	3.16	1.85	0.62	Required
3.	Review the objectives periodically to meet economic situation	3.26	1.79	0.50	Required
4.	Decide on where to locate the beehives	3.18	1.90	0.59	Required
5.	Identify relevant personnel	3.09	1.02	0.36	Required
6.	Identify relevant farm input required for bee keeping	3.08	1.31	0.69	Required
7.	Identify relevant records to keep	2.86	1.21	0.55	Required
8.	Make budget for bee keeping	3.09	1.3	0.36	Required
9	Identify source of fund	2.99	1.04	0.37	Required
10	Identify the crucial issues influencing bee keeping	3.12	1.92	0.47	Required



	business					
11	Spot the ideal customers	3.13	1.88	0.53	Required	
12	Recognize your real rivals and how to present the business	3.12	1.37	0.77	Required	
13	Identify how to create multiple and repeat revenue streams to expand the business	3.10	1.15	0.70	Required	
14	Create a time scale and work plan	3.00	1.95	0.94	Required	
15	Develop equity value to make sure you get maximum returns	3.19	1.84	0.44	Required	
16	Take into account poor colonization and absconding of bees	2.97	1.23	0.64	Required	
17	Identify the species and races of bees that are more productive.	3.18	1.86	0.53	Required	
18	Take into account the value of environment benefit such as increased crop pollination	3.14	1.86	0.63	Required	

\bar{X} = mean, SD = standard deviation, t-cal = t- calculated, t- table = 1.96, R=Required

The data in Table 1 revealed the mean of 18 items ranged from 2.97 to 3.26. This indicated that each and all the items had a mean value above the cut-off point of 2.50 which is accepted. The table also revealed that each and all of the items had their standard deviation ranged from 1.02 to 1.95; this showed that the respondents were not far from the mean and from one another in their responses. The result of the test of hypothesis in table 1 indicated that each of the items had its calculated t – value lower than the table value of 1.96. This revealed that there was no significant difference in the mean ratings of male and female agricultural education lecturers on competencies required in planning of beekeeping for effective teaching of bee production in tertiary institutions in South-Eastern States of Nigeria... Therefore, the hypothesis of no significant difference was accepted for the 18 items.

Table 2: Mean Ratings and Standard deviation of the Responses of Male and Female Agricultural Education Lecturers ON Competencies Required In site selection and construction of beehives For Effective Teaching of Bee Production

S/N	SITE SELECTION AND CONSTRUCTION OF BEEHIVES	X	SD	t-cal	REMARK
1.	Site beehive on a fenced plot of land that is not immediately Inhabited	3.21	1.84	0.35	Required
2.	Identify traditional beehive that is adaptable in an area	3.40	1.70	0.75	Required
3.	Site apiary close to home of the beekeeping for regular inspection of operation	2.90	1.84	0.51	Required
4.	The path leading to apiary should be good	2.60	0.52	0.71	Required
5.	Mould two clay pots for bees	3.90	1.58	0.60	Required
6.	Tie two clay pots together at their open end to form an Enclosure	2.55	0.66	1.23	Required
7.	Perforate both ends of the two pots to serve as entrance and exit of bees	3.48	0.81	0.30	Required
8.	Put appropriate baiting materials to attract bees	3.44	0.76	0.57	Required
9.	The pot on a crotch of fee for a catch or introduce a swarm of Bee	3.86	0.95	0.50	Required
10	Identify modern beehive that is adaptable in area of operation such as langroth live	2.77	1.03	0.36	Required



11	Select wood that is wrap-proof resistance to the rooting effect of sun and rain	2.98	0.57	1.56	Required
12	Reduce the wood to part of a box following the given specification	3.19	0.65	0.29	Required
13	Introduce appropriate chamber and accessory into the box	3.10	0.90	0.86	Required
14	Introduce four legs into the box like table	3.14	1.90	0.45	Required
15	Introduce baiting material into the chamber	3.08	1.31	0.64	Required
16	Construct the hive to about 8 – 10 frame	2.99	1.30	0.93	Required
17	Construct multiple bee hives vertically or horizontally	3.40	1.45	1.07	Required
18	Hive parts should have same measurement so that frames can be exchanged between hives	3.20	1.67	0.21	Required
19	Protect the outside of hive with varnish or paint	3.10	1.26	1.43	Required

\bar{X} = mean, SD = standard deviation, t-cal = t- calculated, t- table = 1.96, R=Required
 The data in Table 2 revealed the mean of 19 items ranged from 2.55 to 3.90. This indicated that each and all the items had a mean value above the cut-off point of 2.50 which is accepted. The table also revealed that each and all of the items had their standard deviation ranged from 0.52 to 1.90; this showed that the respondents were not far from the mean and from one another in their responses. The result of the test of hypothesis in Table 1 indicated that each of the items had its calculated t – value lower than the table value of 1.96. This revealed that there was no significant difference in the mean ratings of male and female agricultural education lecturers on competencies required in site selection and construction of beehives for effective teaching of bee production in tertiary institutions in South-Eastern States of Nigeria. Therefore, the hypothesis of no significant difference was accepted for the 19 items.

Table 3: Mean Ratings and Standard deviation of the Responses of Male and Female Agricultural Education Lecturers on Competencies Required on Harvesting and Marketing of bee products

S/N	HARVESTING	X	SD	t-cal	REMARK
1.	Wearing light coloured protective clothing for harvesting	3.92	1.04	0.55	Required
2.	Collect harvesting tools	2.72	0.78	0.45	Required
3.	Puffing of smokes under the lid and entrance of the hive	3.12	0.90	0.61	Required
4.	Opening of the hive using tools to separate frames from the honey combs	3.61	0.91	0.56	Required
5.	Harvesting of combs with capped honey only	3.44	0.76	0.81	Required
6.	Leaving of the combs with broods in the hives	3.55	0.54	0.62	Required
7.	Squeezing of the honey combs to collect the honey and the wax	3.03	0.67	0.87	Required
8.	Using pollen trap to collect pollen from in-going pollen foragers	3.70	0.53	0.62	Required
9	Grafting the queen to collect royal jelly	3.52	0.72	1.04	Required
10	Collecting black propolis from the bottom and sides of the hive	3.76	1.01	0.84	Required
11	Returning the frames carefully into their position and closing of the hive	2.94	1.43	0.76	Required
12	Carrying out of market survey	2.74	0.43	0.95	Required
13	Grading of different products into containers	2.52	0.79	0.50	Required
14	Fixing of prices of bee products	3.70	1.23	0.64	Required
15	Selling immediately or transporting to local buyers and	3.64	0.32	1.14	Required



exporters					
16	Receiving payment at the point of sale	3.90	1.21	0.48	Required
17	Calculating profit or loss	2.94	1.42	0.76	Required

X = mean, SD = standard deviation, t-cal = t- calculated, t- table = 1.96, R= Required

The data in Table 3 revealed the mean of 17 items ranged from 2.52 to 3.92. This indicated that each and all the items had a mean value above the cutoff point of 2.50 which is accepted. The table also revealed that each and all of the items had their standard deviation ranged from 0.32 to 1.42; this showed that the respondents were not far from the mean and from one another in their responses. The result of the test of hypothesis in Table 1 indicated that each of the items had its calculated t – value lower than the table value of 1.96. This revealed that there was no significant difference in the mean ratings of male and female agricultural education lecturers on competencies required on Harvesting and Marketing of bee products for effective teaching of bee production in senior secondary school in tertiary institutions in South-Eastern states of Nigeria. Therefore, the hypothesis of no significant difference was accepted for the 17 items.

DISCUSSION OF FINDINGS

Hypothesis 1, which was stated in the null form that there is no significance difference in the mean ratings of male and female agricultural education lecturers on competencies required in planning of beekeeping for effective teaching of bee production in tertiary institutions in South-Eastern States of Nigeria was tested at 0.05 level of significance. The result revealed that the difference in the mean ratings of male and female agricultural education lecturers do not differ significantly. This means that all the 18 skill items in planning were required for effective teaching of bee production. This finding is in agreement with the view of Okenwa (2002) who stated that planning skills is the business of identifying goals and objectives of working out ways and means of achieving them, the author went further to identify 10 planning skills that are required for economic success in honey production enterprise. The result also agree with Olaitan, Ifeanyieze and Omeje (2008) who outlined 8 planning skills and Caron (2001) with 8 planning skills required by secondary school graduates for economic success in honey production.

The second hypothesis which was stated in the null form that there is no significant difference in the mean rating of male and female agricultural science teachers on site selection and construction of bee hive skills required for effective teaching of bee production was tested at 0.05 level of significance in the mean rating of male and female agricultural education lecturers do not differ significantly which means that all the 19 skill items in site selection and construction of beehive were required effective teaching of bee production. The findings of this study is in agreement with the view of Agbarevo (2003) who stated that site selection skill is the process of choosing the optimal location for a business based on accessibility to and availability of customers as well as consideration as to space cost, size and other physical characteristics, zoning regulation, investment tax credits and the quality of the available work force. The author further stated that



construction of beehive skills is an act of making or forming by combining or arraying parts or elements to produce beehive. He identified 8 site selection and construction of beehive skills.

Another result of the study was that bee production required 17 competencies in harvesting and marketing of bee production. The findings on the harvesting of bee products are in line with Abubakar (2000) who stated that the beekeeper should wear protective cloths preferably white and gather all the necessary tools for harvesting ripe honey, beeswax and black propolis. The findings are also in agreement with TimilNadu (TNAU, 2008) and Crushman (2002) where it was noted that the bee pollen and royal jelly can be harvested through pollen traps from in-going pollen foragers and by grafting the queen to collect royal jelly. The finding on the marketing of bee products is in agreement with Stanson (2008) where it was stated that marketing activities involve grading, advertising, recording of all financial transactions and calculating profit and loss. The findings is also in line with the study carried out by Olaitan, Ifeanyieze and Omeje (2008) where it was found out that marketing of bee products involves: making of market survey; putting the quantity of products required in a container; selling on the spot or transporting to buyer; receiving payment at the selling spot; and calculating income and expenditure.

CONCLUSION

The findings of this study showed that all the 54 competency items identified in the study were required by agricultural education lecturers in bee keeping for effective teaching of bee production in tertiary institutions in South-Eastern States, Nigeria. There's therefore the need to educate this population of tertiary institution students to be properly informed and trained in this area (bee production) so that they could find themselves self-employed or employed by other bigger honey production enterprise for them to be able to make a living. This could assist in reducing the social menace posed by this graduates as a result of idleness and also could contribute to the socio-economic well-being of their individual families and even to a large extent their state and nation as a whole.

RECOMMENDATIONS

Stemming from the result of this study, the following recommendations were made: -

- 1) If the identified skills are packaged into a retraining programme and the tertiary institution students are made to undergo this programme, this could help them to become self-reliant and self-sustaining.
- 2) If lecturers of agricultural education are encouraged to teach skills during the period of school instruction and the students are made to pass through it during their period of studies, this could cause them to develop interest thereby encouraging them to go into the business of bee keeping.
- 3) If curriculum planners are advised to integrate the identified skills into the school curriculum this could provide avenues for lecturers to use this curriculum effectively to teach the students these skills and the students will then become acquainted with this and by so doing become interested in the business of bee keeping after graduation.



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