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Assessment of Nursery Farming Competencies Required for Self Employment among Agricultural Education Graduates in the College of Education, Afaha Nsit, Nigeria

Ekpo, N. T.

Department of Agricultural Education, College of Education, Afaha Nsit, P.M.B. 1019 Etinan,
Akwa Ibom State, Nigeria

Corresponding Author Email: timothyse634@gmail.com, Tel: +2348022292190

Abstract

The study assessed nursery farming competencies required for self-employment among agricultural education graduates of College of Education, Afaha Nsit, Nigeria. Descriptive survey research design was adopted for the study. A sample of 35 participants comprising 30 Agricultural Education Graduates in College of Education Afaha Nsit and 5 nursery farmers in Nsit Ibom Local Government Area of Akwa Ibom State were selected using consensus sampling technique. Data was collected using questionnaire titled “Nursery Farming Competency Needs for Self Employment of Agricultural Education Graduates Questionnaire” (NFCNSEAEGQ). The questionnaire instrument was scrutinized and face-validated by two experts, from the Department of Agricultural Education in the School of Vocational and Technology Education, College of Education, Afaha Nsit. Research questions were answered using mean and standard deviation while independent t-test statistics was employed to test the null hypotheses at .05 level of significance. Findings of the study revealed that competency in nursery seed bed preparation, crop propagation and nursery soil fertility management were highly needed for self-employment of Agricultural Education Graduates of Akwa Ibom State College of Education, Afaha Nsit. Findings further showed that nursery farmers and Agricultural Education Graduates do not significantly differ in their response on the competencies needed in nursery seed bed preparation, crop propagation and nursery soil fertility management for self-employment of Agricultural Education Graduates of Akwa Ibom State College of Education, Afaha Nsit. It was concluded that operation of a functional and economically viable nursery farm capable of providing income for livelihood required competencies in nursery seed bed preparation, crop propagation and nursery soil fertility management. It was recommended among others that Akwa Ibom State government should equip College of Education with water management facilities and equipment to aid the training of Agricultural Education Students on effective water and soil fertility management for nursery farming.

Keywords: Assessment, Competency, Nursery farming, Self-employment, Agricultural education, Seed bed preparation, Crop propagation, Nursery soil fertility management

INTRODUCTION

Nursery farming, also known as horticultural nursery, is a specialized form of agriculture that involves the propagation and cultivation of plants for various purposes. It is an essential component of the horticulture industry, providing a wide range of plants, trees, shrubs, flowers, and other agricultural products to farmers, gardeners, landscapers, and other customers. Yadav *et al.* (2014) noted that nursery farms play a crucial role in the plant industry by producing high-quality plants that are used for various purposes, such as landscaping, gardening, reforestation, restoration projects, and commercial agriculture. These farms often provide a controlled environment where young plants can grow under optimal conditions, ensuring their health and vigor before they are sold or transplanted.

To excel in nursery farming, agricultural students should develop a range of competencies that would help in establishing and managing farms. Identifying competency needs for nursery farming involves assessing the skills necessary for successful performance in a nursery farm business. This assessment can be done at an individual level, where an employee's competencies are evaluated to determine areas for development or improvement. Once competency needs are identified, appropriate actions are taken to address them.

Proficiency in different propagation methods, including seed sowing, grafting, budding, layering, cutting, and tissue culture is required for proper establishment and operation of nursery farm. Furthermore, Opeke (2018) asserted that identifying reliable suppliers or consider growing the initial stock from seeds, cuttings, or tissue cultures are strategic measures to ensuring successful propagation of crops. Farmers ought to choose plant species and varieties that are in demand and well-suited to their local climates and market preferences. Maintain proper records and labeling of plant material to ensure traceability and quality control. Prospective nursery farmer should seek to understand the requirements, procedures, and timing associated with each technique.

According to Onu and Mohammed (2014) competencies in crop production provides a foundation for agricultural students interested in pursuing a career in nursery farming. Practical hands-on experience through internships, fieldwork, or involvement in nursery operations can significantly enhance their learning and skill development. Fapojuwo *et al.* (2017) reported that most agricultural graduates in Nigeria lack the knowledge and skills required to be self-employed and work in a rapidly changing environment. Acquisition of latent competencies in nursery farming is very crucial in providing jobs for graduates to be employer of labour and self-reliance. Seedbed preparation competency refers to the ability to properly prepare the soil for planting seeds and it involves tasks such as tilling, leveling, removing weeds, and creating a suitable environment for germination of seeds and growth. Soil fertility management competency focuses on the understanding and application of practices aimed at ensuring that the soil provides adequate nutrients and favorable conditions for plant growth, thereby optimizing crop productivity and sustainability and it includes activities such as soil testing, nutrient management, organic matter incorporation, and soil amendments application.

Plant propagation is another competency area in nursery farming and is the process in which new plants can grow from old ones through a variety of methods such as collecting seeds, cuttings, or other parts of plants. These propagations are applicable in many situations, from home gardening to cloning plants or even creating hybrids.

Malone (2020) noted that plant propagation is usually carried out to restore native species of plants to a certain area as well as maintaining certain genes and species intact and prevent them from extinction. Propagations can be taken from other local plants to be grown and planted in an area that is being restored. There are two different kinds of propagations: sexual and asexual.

Sexual propagation involves the union of pollen from a male plant with an egg from a female plant and involves the floral parts of a plant (Plant propagation). Seeds can be collected from existing plants and saved or used in other locations. A seed's location within a plant can vary from species to species, but in a lot of cases for perennial and annual plants, the seeds are ready to harvest after the plant has bloomed and petals have fallen off (Hughes, 2020). Crop could be propagated asexually and there are also several methods of asexual propagation that can be easily done. These include; cuttings, layering, division, separation, grafting, budding, tissue culture, and stem cuttings can be taken from any part of the plant, but most commonly a stem or leaf is used (Wilson, 2019).

Competence in plants propagation requires evidence that appropriate propagation material be selected, growth media and growth site be prepared, and appropriate propagation method be implemented. The skills and knowledge required for plant propagation must be transferable to a different work environment. Carmody (2021) outlined some tips and tricks to ensure a healthy propagation to include:

- (i) Keep the environment wet or moist! New roots need water to develop, if the water runs out, the plant cannot begin its development.
- (ii) New cuttings can benefit from bright light but not direct light.
- (iii) Typically, sunlight is better to use rather than artificial light as it isn't able to completely mimic the colors or wavelengths of natural light. However, artificial light can be used to supplement sunlight when there isn't enough natural light for growth (Volente).
- (iv) Normal potting soil can be too rich for new roots to grow, so besides water, materials like peat moss, vermiculite, perlite, or even sand can help new plants thrive.

Numerous related empirical studies have been conducted on competency needs for agricultural production. For instance, Longshal (2023) investigated competencies required by agricultural education graduates for restoration of soil fertility and water management in Jos South Senatorial Zone of plateau State using survey research design. The population of the study was 383, which comprised of 305 Agricultural Education graduates, 15 extension agents and 63 crop farmers. Multistage sampling technique was used to obtain a sample of 78 respondents. Mean and standard deviation were used to answer the research questions while t-test and chi-square were used to test the null hypotheses. Results of the findings revealed that all the practices for improved soil fertility, micronutrients and fertilizers are required for raising soil fertility and water management in Jos South Senatorial Zone of Plateau State.

Similarly, Onu and Mohammed (2014) investigated the competency improvement needs of farmers in soil erosion prevention and control for enhancing crop production in Kogi state of Nigeria and was carried out between January and June, 2014. The study adopted descriptive survey research design and was guided by two research questions. The study found out that farmers needed improvement on 37 cultural practices as follows: 10 competencies in mulching, 12 in cover cropping, 8 in strip cropping, 7 in contour farming and 45 mechanical field practice as follows: 10 competencies in contour bonding, 11 in terracing, 12 in channeling and 11 in tunneling for success in soil erosion prevention and control. Furthermore, Ekele and Shishi (2019) conducted a study to identify work skills required for training youths for tomato production in Benue State, Nigeria. Three research questions were raised to guide the study. Survey research design was employed for the study. The sample size of the study was 180, which consisted of 120 registered tomato farmers and 60 agricultural extension agents. A-32work skills on tomato production questionnaire were the instrument used for data collection. Findings from the study revealed that prospective farmers in Benue state required entrepreneurial skills in planting, post-planting, and post-harvesting for training youths for tomato production. Therefore, ascertaining the competency needs of Agricultural Education graduate becomes relevant in ensuring adequate provisions to meeting their skill need for self-employment.

Adequate understanding of soil properties, fertility, and management is necessary for nursery farming. Students should learn about soil testing, nutrient requirements, soil amendments, pH balancing, and irrigation practices specific to nursery crops. Opeke (2018) further maintained that growing medium (potting mix or soil) and containers suitable for plants must be adequately prepared. Implement appropriate cultivation techniques like sowing seeds, cuttings, grafting, or tissue culture propagation. Follow best practices for watering, fertilization, pest and disease control, and weed management. Establish a regular maintenance schedule to monitor and care for the plants.

Amuri *et al.* (2020) investigated the competency needs of smallholder farmers in soil fertility management in Tanzania. The researchers employed a cross-sectional survey and qualitative interviews to assess farmers' knowledge, attitudes, and practices. The findings revealed that farmers had limited understanding of soil nutrient dynamics, the role of organic matter, and the appropriate use of fertilizers. The study highlighted the need for improved access to extension services, farmer-to-farmer learning, and the integration of indigenous soil management practices with scientific knowledge. Furthermore, Muoni *et al.* (2020) conducted a study in Zimbabwe to examine the competency of smallholder farmers in soil fertility management. The researchers used a combination of household surveys, field observations, and focus group discussions. The findings indicated that farmers had limited knowledge and skills in areas such as soil testing, nutrient balancing, and the integration of organic and inorganic fertilizers. The study emphasized the importance of strengthening farmer-extension linkages and providing context-specific training programs to enhance farmers' competency. It is obvious that nursery crops require precise irrigation, propagation of plants and soil fertility management.

Students should learn about different irrigation systems, water conservation techniques, scheduling methods, and the impact of water quality on plant health.

Statement of Problem

Despite the increasing emphasis on self-employment as a viable career path for graduates in Nigeria, many Agricultural Education Graduates from College of Education, Afaha Nsit struggle to establish and sustain successful nursery farming enterprise. These challenges raised concerns about adequacy of their training and specific competencies they acquired during their education. Nursery farming which requires a unique set of skills and knowledge could offer significant opportunities for self-employment if graduates are adequately prepared. However, there is a limited research on the specific nursery competencies that Agricultural Education graduates need for successful self-employment. Furthermore, the extent to which these competencies are currently being developed within the College curriculum and the challenges graduates face in leveraging nursery farming as a self-employment opportunity. Therefore, this study sought to address the nursery farming competencies required for self-employment among Agricultural Education Graduates of College of Education, Afaha Nsit, Nigeria.

Purpose of the Study

The main purpose of this study was to assess nursery farming competencies required for self-employment among agricultural education graduates of College of Education, Afaha Nsit, Nigeria. Specifically the study sought to;

- (i) determine the nursery seed-bed preparation competency needs for self-employment of agricultural education graduates of Akwa Ibom State College of Education, Afaha Nsit.
- (ii) determine the nursery crop propagation competency needs for self-employment of agricultural education graduates of Akwa Ibom State College of Education, Afaha Nsit.
- (iii) determine the nursery soil fertility management competency needs for self-employment of agricultural education graduates of Akwa Ibom State College of Education, Afaha Nsit.

Research Questions

The study was guided by two research questions

- (i) What are the nursery seed-bed preparation competency needs for self-employment of agricultural education graduates of Akwa Ibom State College of Education, Afaha Nsit?
- (ii) What are the nursery crop propagation competency needs for self-employment of agricultural education graduates of Akwa Ibom State College of Education, Afaha Nsit?
- (iii) What are the nursery soil fertility management competency needs for self-employment of agricultural education graduates of Akwa Ibom State College of Education, Afaha Nsit?

Research Hypotheses

The study was guided by two research null hypotheses

- (i) There is no significant difference in the mean responses of Agricultural Education Graduates and nursery farmers on the nursery seed bed preparation competency needs for self-employment of agricultural education graduates of Akwa Ibom State College of Education, Afaha Nsit.
- (ii) There is no significant difference in the mean responses of Agricultural Education Graduates and nursery farmers on the nursery crop propagation competency needs for self-employment of agricultural education graduates of Akwa Ibom State College of Education, Afaha Nsit.
- (iii) There is no significant difference in the mean responses of Agricultural Education Graduates and nursery farmers on the nursery soil fertility management competency needs for self-employment of agricultural education graduates of Akwa Ibom State College of Education, Afaha Nsit.

RESEARCH METHODOLOGY

Design of the Study

Descriptive survey research design was adopted for the study. This design studies a group of people or items by collecting and analyzing data from a few people or items considered as a representative of the entire group. Findings of the study were later inferred on the entire group.

Area of the Study

The study was conducted in Nsit Ibom Local Government Area of Akwa Ibom State. Nsit Ibom is bounded by Ibesikpo Asutan, Nsit Ubium and Uyo respectively. The people of Nsit Ibom are of the Ibibio ethnic extraction. Farming is a key economic activity in Nsit Ibom LGA. Crops grown in the area include cucumber, tomatoes, oil palm, cassava, yam, and cocoyam. Livestock reared in the area include goat, sheep, poultry and rabbit. The study area was chosen for the study on the basis that most plants used for landscaping and ornamentals as well as some valuable crop grown for food and other economic purpose required nursery for effective production. Such crops include garden egg, tomato, pepper, oil palm, citrus, quava, coconut among others.

Population for the Study

The target population for the study consisted of 35 participants comprising 30 Agricultural Education Graduates in College of Education Afaha Nsit and 5 nursery farmers in Demonstration Farm in Department of Agricultural Education, Afaha Nsit.

Sample and Sampling Techniques

A sample of 35 participants comprising 30 Agricultural Education Graduates and 5 nursery farmers were used for the study. A consensus sampling technique was used in selecting the sample for the study on the basis that the target population was small and manageable by the researcher.

Instrumentation

Data for the study was sourced for using a researcher-made instrument titled: Nursery Farming Competency Needs for Self Employment of Agricultural Education Graduates Questionnaire (NFCNSEAEGQ). The instrument comprised of two sections A and B. Section A elicited information on the respondents' personal demographic information while section B contained 15 items on the competency needs in nursery farming structured under a four-point rating scale response of: Highly Needed (HN), Needed (N), Moderately Needed (MN) and Not Needed (NN).

Method of Data Analyses

Research questions were answered using mean and standard deviation while independent t-test statistics was employed to test the null hypotheses at 0.05 level of significance.

RESULTS

Research Question 1

What are the nursery seed bed preparation competency needs for self-employment of agricultural education graduates of Akwa Ibom State College of Education, Afaha Nsit?

Table 1: Mean Score showing nursery seed bed preparation competency needs for self-employment of agricultural education graduates of Akwa Ibom State College of Education, Afaha Nsit

S/N	ITEMS	SA	A	D	SD	TOTAL	$\bar{X}$	SD	DECISION
1	Skills in the use of tillage equipment for seed bed preparation	20(80)	14(42)	1(2)	-(-)	124	3.54	.88	Needed
2	Skills in preparing raised seed beds	10(40)	20(60)	5(10)	-(-)	110	3.14	.62	Needed
3	Skills in preparing sunken seed beds	8(32)	24(72)	3(6)	-(-)	110	3.14	.58	Needed
4	Skills in preparing flat seed beds	25(100)	9(27)	1(2)	-(-)	129	3.69	.92	Needed
5	Skills in taking measurements along seed beds	10(40)	21(63)	4(8)	-(-)	111	3.17	.52	Needed

N = 35

Results on table 1 shows the mean level of responses on nursery seed bed preparation competency needs for self-employment of Agricultural Education graduates of Akwa Ibom State College of Education, Afaha Nsit needed. It indicates that the mean score of respondents for the

five skill areas in nursery seed bed preparation are above the cut-off point of 2.50. This implies that respondents agreed that Agricultural Education Graduates need skills in the use of tillage equipment, skills in preparing raised seed bed, sunken seed bed and flat seed bed as well as skills in taking measurement along seed beds for self-employment.

Research Question 2

What are the nursery crop propagation competency needs for self-employment of agricultural education graduates of Akwa Ibom State College of Education, Afaha Nsit.

Table 2: Mean Score showing nursery crop propagation competency needs for self-employment of agricultural education graduates of Akwa Ibom State College of Education, Afaha Nsit

S/N	ITEMS	SA	A	D	SD	TOTAL	$\bar{X}$	SD	DECISION
1	Skills in selecting propagation materials	14(56)	20(60)	1(2)	-(-)	118	3.37	.88	Needed
2	Skills in crossing of pollen grains	23(92)	12(36)	-(-)	-(-)	128	3.67	.62	Needed
3	Skills in preparing plant cuttings	15(60)	18(54)	2(4)	-(-)	118	3.37	.58	Needed
4	Skills in carrying out layering	19(76)	16(48)	-(-)	-(-)	124	3.54	.92	Needed
5	Skills in carrying out budding and grafting	19(76)	15(45)	1(2)	-(-)		3.51	.52	Needed

N = 35

Results on table 2 shows the mean level of responses of nursery crop propagation competency needs for self-employment of Agricultural Education graduates of Akwa Ibom State College of Education, Afaha Nsit needed. It indicates that the mean score of respondents for the five skill areas in nursery seedbed preparation are above the cut-off point of 2.50. This implies that respondents agreed that Agricultural Education Graduates need skills in selecting propagation materials, crossing of pollen grains, preparing plant cuttings, carrying out layering, budding and grafting for self-employment.

Research Question 3

What are the nursery soil fertility management competency needs for self-employment of agricultural education graduates of Akwa Ibom State College of Education, Afaha Nsit?

Table 3: Mean Score showing nursery soil fertility management competency needs for self-employment of agricultural education graduates of Akwa Ibom State College of Education, Afaha Nsit

S/N	ITEMS	SA	A	D	SD	TOTAL	$\bar{X}$	SD	DECISION
1	Skills in carrying out soil fertility test	13(52)	15(45)	7(14)	-(-)	111	3.17	.88	Needed
2	Skills in application of organic manure	26(104)	5(15)	4(8)	-(-)	127	3.63	.62	Needed
3	Skills in application of inorganic manure	25(100)	8(24)	2(4)	-(-)	128	3.66	.58	Needed
4	Skills in preparation of compost	20(80)	13(39)	2(4)	-(-)	123	3.51	.92	Needed
5	Skills in preventing soil fertility depletion	14(56)	19(57)	2(4)	-(-)	117	3.34	.52	Needed

N = 89

Results on table 3 shows the mean level of responses on nursery soil fertility management competency needs for self-employment of Agricultural Education Graduates of Akwa Ibom State College of Education, Afaha Nsit. It indicates that the mean score of respondents for the five skill areas in nursery soil fertility management are above the cut-off point of 2.50. This implies that respondents agreed that Agricultural Education Graduates need skills in carrying out soil fertility test, application of organic and inorganic manure, preparation of compost and prevention of soil fertility depletion for self-employment.

Research Hypothesis 1

There is no significant difference in the mean responses of Agricultural Education Graduates and nursery farmers on the nursery seed-bed preparation competency needs for self-employment of agricultural education graduates of Akwa Ibom State College of Education, Afaha Nsit.

Table 4: Independent t-test Analysis showing difference in the nursery seed bed preparation competency needs for self-employment of agricultural education graduates of Akwa Ibom State College of Education, Afaha Nsit

Categories	N	$\bar{X}$	SD	Df	t-cal	t-crit	Decision
Agricultural Education Graduates	30	3.33	.22	33	0.25	2.04	Not Significant
Nursery Farmers	5	3.36	.22				

Not Significant at $p < 0.05$

Table 4 shows that, t-calculated is 0.25 while t-critical was 2.04 at 33 degrees of freedom and 0.05 level of significance. Since the t-calculated (0.25) is less than the t-critical (2.04), the null hypothesis was retained; hence, there is no significant difference in the mean responses of Agricultural Education Graduates and nursery farmers on the nursery seed bed preparation competency needs for self-employment of Agricultural Education Graduates of Akwa Ibom State College of Education, Afaha Nsit.

Research Hypothesis 2

There is no significant difference in the mean responses of Agricultural Education Graduates and nursery farmers on the nursery crop propagation competency needs for self-employment of agricultural education graduates of Akwa Ibom State College of Education, Afaha Nsit.

Table 5: Independent t-test Analysis showing difference in the nursery crop propagation competency needs for self-employment of agricultural education graduates of Akwa Ibom State College of Education, Afaha Nsit

Categories	N	$\bar{X}$	SD	Df	t-cal	t-crit	Decision
Agricultural Education Graduates	30	3.49	.24	33	0.28	2.04	Not Significant
Nursery Farmers	5	3.52	.22				

Not Significant at $p < 0.05$

The t-test analysis result in Table 5 shows that, t-calculated is 0.28 while t-critical was 2.04 at 33 degrees of freedom and 0.05 level of significance. Since the t-calculated (0.28) is less than the t-critical (2.04), the null hypothesis was retained; hence, there is no significant difference in the mean responses of Agricultural Education Graduates and nursery farmers on the nursery crop propagation competency needs for self-employment of Agricultural Education Graduates of Akwa Ibom State College of Education, Afaha Nsit.

Research Hypothesis 3

There is no significant difference in the mean responses of Agricultural Education Graduates and nursery farmers on the nursery soil fertility management competency needs for self-employment of agricultural education graduates of Akwa Ibom State College of Education, Afaha Nsit.

Table 6: Independent t-test Analysis showing difference in the nursery soil fertility management competency needs for self-employment of Agricultural Education Graduates of Akwa Ibom State College of Education, Afaha Nsit

Categories	N	$\bar{X}$	SD	Df	t-cal	t-crit	Decision
Agricultural Education Graduates	30	16.40	1.53	87	0.21	2.04	Not Significant
Nursery Farmers	5	16.22	1.38				
Not Significant at p<0.05							

The t-test analysis of result in table 6 shows that, t-calculated is 0.54 while t-critical was 2.04 at 33 degrees of freedom and 0.05 level of significance. Since the t-calculated (0.54) is less than the t-critical (2.04), the null hypothesis was retained; hence, there is no significant difference in the mean responses of Agricultural Education Graduates and nursery farmers on the nursery soil fertility management competency need for self-employment of Agricultural Education Graduates of Akwa Ibom State College of Education, Afaha Nsit.

DISCUSSION

Findings of the study reveals that Agricultural Education Graduates need skills in the use of tillage equipment, skills in preparing raised seed bed, sunken seed bed and flat seed bed as well as skills in taking measurement along seed beds for self-employment. More so, there is no significant difference in the mean responses of Agricultural Education Graduates and nursery farmers on the nursery seed bed preparation competency needs for self-employment of agricultural education graduates of Akwa Ibom State College of Education, Afaha Nsit. This implies that nursery seed bed preparation competencies are relevant for a successful operation of nursery farms and acquiring these competencies would prepare graduates of Agricultural Education for self-employment. Nursery seed bed preparations competencies are prerequisite skills needed to successfully raised seedling in the nursery for sale. The finding is in tandem with the findings of Onu and Mohammed (2014) who reported that farmers required competencies in land and nursery preparation for enhancing crop production. It also affirmed the findings of Longshal (2023) that all the practices for improved soil fertility, micronutrients and fertilizers are required for raising soil fertility and water management.

Findings of the study reveals that Agricultural Education Graduates need skills in selecting propagation materials, crossing of pollen grains, preparing plant cuttings, carrying out layering, budding and grafting for self-employment. Findings also showed that there is no significant difference in the mean responses of Agricultural Education Graduates and nursery farmers on the nursery crop propagation competency needs for self-employment of Agricultural Education Graduates of Akwa Ibom State College of Education, Afaha Nsit. The findings may be due to the fact that for nursery farm to be economical and enterprising, viable propagation materials must be selected and prospective nursery farmer be versatile in various propagation techniques such as selecting propagation materials, crossing of pollen grains, preparing plant cuttings, carrying out layering, budding and grafting are needed. These competencies will foster the production of healthy seedlings from the nursery farm and must be of high market value to enhance economic returns. This corroborated with that of Anjov, Ibrahim and Umoru (2016) that secondary school graduates required competencies in land and nursery preparation for rice production. It also collaborated with the findings of Ekele and Shishi (2019) that secondary school graduates in Benue State needed capacity building in nursery operation, pre-planting operation and planting operation for citrus production.

Findings revealed that Agricultural Education Graduates need skills in carrying out soil fertility test, application of organic and inorganic manure, preparation of compost and prevention of soil fertility depletion for self-employment. It was also observed that there was no significant difference in the mean responses of Agricultural Education Graduates and nursery farmers on the nursery soil fertility management competency needs for self-employment of agricultural education graduates of Akwa Ibom State College of Education, Afaha Nsit. This implies that competencies in soil fertility management are very useful in fostering the growth and development of healthy, vigorously growing and productive nursery products with high economic value.

Therefore Agricultural Education Graduates that are vested in soil fertility management competencies can engage in nursery farming for livelihood as this would enable them produce nursery products for market. The finding is in agreement with that of Ekele and Shishi (2019) that prospective farmers in Benue state required entrepreneurial skills in planting, post- planting, and post-harvesting in training youths for tomato production. This also aligned with the findings of Mabuza and Ndoro (2023) that smallholder farmers were only highly competent in weed control. Furthermore, report affirmed the findings of Longshal (2023)that all the practices for improved soil fertility, micronutrients and fertilizers are required for raising soil fertility and water management.

Recommendations

On the basis of the findings, the following were recommended:

- (i) Supervised experience in nursery farming should be provided for Agricultural Education students while in school to enhance skill development and acquisition in seedbed preparation for nursery farming.

- (ii) Ministry of Agriculture should organize training for Agricultural Education Graduates to acquire competencies in modern nursery crop propagation for self-employment.
- (iii) State Government should provide farm inputs to nursery farmers for effective soil fertility management for higher productivity.

Conclusion

Operation of a functional and economically viable nursery farm is capable of providing income for livelihood of Agricultural Education Graduates. Competencies in nursery seed bed preparation, crop propagation and soil fertility management are fundamental requirements for Agricultural Education Graduates to be self-employed in nursery farming.

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