



ATTITUDE OF TRAINED YOUTHS TOWARDS SOILLESS AGRICULTURE AS A CAREER OPTION IN OGUN STATE, NIGERIA

¹Alabi, A. F., ¹Ajuwon, I. O., ²Oyeleye, A. A. and ³Akinlade, S. O.

¹Department of Agricultural Technology, Oyo State College of Agriculture and Technology, Igbo-Ora, Oyo State, Nigeria.

²Department of Agricultural Extension and Management, Oyo State College of Agriculture and Technology, Igbo Ora, Oyo State, Nigeria

³Department of Agricultural Extension and Rural Development, University of Ibadan, Ibadan, Oyo State, Nigeria

Corresponding Author's Email: aajeronke2009@gmail.com, **GSM:** 08055788336, **ORCHID:** <https://orcid.org/0000-0003-3194-0161>

ABSTRACT

This study examined the attitude of trained youths towards soilless agriculture as a career option in Ogun State, Nigeria. A total of 232 trained youths were selected using random sampling technique. Data were collected using a structured questionnaire and analysed using percentages, mean, standard deviation, and Pearson Product Moment Correlation (PPMC). The findings revealed that trained youths had a high level of knowledge about soilless agriculture (89.75), indicating adequate awareness of its concepts and production practices. Major perceived benefits of pursuing soilless agriculture as a career included job creation ($\bar{x} = 1.73$), environmental sustainability ($\bar{x} = 1.67$), and adaptability to urban settings ($\bar{x} = 1.64$). The major challenges identified were limited access to funding ($\bar{x} = 1.48$), high start-up costs ($\bar{x} = 1.45$), and weak institutional support ($\bar{x} = 1.32$). A little above half (50.4%) of the respondents had a favourable attitude towards soilless agriculture as a career option, while 49.6% had an unfavourable attitude. PPMC analysis revealed a significant positive relationship between perceived benefits and attitude towards soilless agriculture ($r = 0.180$, $P < 0.01$). The study concluded that trained youths possessed good knowledge and generally positive attitudes towards soilless agriculture, although financial, technical, and institutional barriers may limit career adoption. It is recommended that government agencies, financial institutions, educational institutions, NGOs, and private investors provide funding opportunities, strengthen technical training, and establish supportive policies to encourage youth participation in soilless agriculture.

Keywords: Soilless, Agriculture, Youths, Knowledge, Attitude, Career.

INTRODUCTION

Agriculture continues to play a vital role in Nigeria by supporting food security, creating employment opportunities, and promoting economic growth. Nevertheless, the sector is confronted with several challenges, including limited access to arable land, soil degradation, climate change, and reduced youth involvement in conventional agricultural activities (Osaboien & Saleh Al Faryan, 2025). These challenges have heightened the importance of innovative and sustainable farming methods, such as soilless agriculture, which involves growing crops without natural soil as the primary growing medium. Technologies including hydroponics, aeroponics, and aquaponics offer opportunities for efficient resource use, improved productivity, and continuous crop production throughout the year, thereby increasing the attractiveness of agriculture to young people (Adesiji *et al.*, 2024).

In response to these challenges, several government and private-sector initiatives in Nigeria have introduced training programmes aimed at equipping youths with practical skills in soilless agriculture. Initiatives such as the Enterprise for Youths in Agriculture (EYiA), Kogi State Soilless Farming Initiative, Niger State hydroponics programme, Ojodu LCDA soilless farming scheme, and SUSTAIN AGE initiative have contributed to youth capacity development and promoted participation in modern agricultural enterprises. Previous studies have also indicated that training, innovation, and entrepreneurship development can shape youths' interest in and commitment to agriculture as a career (Badiru *et al.*, 2021; Aderinoye *et al.*, 2021). In Ogun State, organisations such as BIC Farms Concept



and Soilless Farm Lab have provided youths with practical training in various soilless farming techniques (Amusan & Adeleke, 2024).

However, participation in training programmes does not necessarily translate into the adoption of soilless agriculture as a career. The attitude of trained youths, encompassing their beliefs, feelings, acceptance, confidence, and willingness to engage in soilless farming, is an important factor that may influence their career decisions. While favourable attitudes may motivate youths to establish and manage soilless farming enterprises, unfavourable perceptions concerning high production costs, technical demands, and potential risks may limit their willingness to participate. Although existing studies have examined various aspects of soilless agriculture, including production practices, economic benefits, and youth participation (Amusan & Adeleke, 2024; Anonyuo, 2023; Folorunso *et al.*, 2023), there is limited empirical evidence on the attitude of trained youths towards soilless agriculture as a career option, particularly in Ogun State. Therefore, this study examines the attitude of trained youths towards pursuing soilless agriculture as a career option in Ogun State.

The specific objectives were to:

- i. ascertain the level of knowledge of trained youths about soilless agriculture;
- ii. identify the perceived benefits of pursuing soilless agriculture as a career among trained youths;
- iii. assess the attitude of trained youths towards soilless agriculture as a career option; and;
- iv. identify the constraints limiting trained youths from adopting soilless agriculture as a career option in the study area.

The hypothesis states that there is no significant relationship between the perceived benefits of soilless agriculture and the attitude of trained youths towards soilless agriculture as a career option.

METHODOLOGY

The Study Area

The study was carried out in Ogun State, South-West Nigeria, with Abeokuta as the state capital. The state lies between latitudes 6°15' and 7°58' N and longitudes 2°45' and 4°45' E. It is bounded by Lagos State and the Atlantic Ocean to the south, Oyo and Osun States to the north, Ondo State to the east, and the Republic of Benin to the west. Ogun State covers about 16,432 km² and has 20 Local Government Areas. The 2006 Population and Housing Census recorded a population of 3,751,140. Ogun State has a tropical climate with wet and dry seasons. Rainfall is generally higher in the southern part of the state than in the northern part. The state has tropical forest and derived savannah vegetation. These conditions support agricultural activities, including the production of crops such as cassava, maize, rice, yam, cocoa, and oil palm. The state's agricultural activities and proximity to Lagos make it an important area for agricultural production and marketing. These features also make Ogun State suitable for the study of youths involved in soilless agriculture.

Sampling Technique and Sample Size

The study population consisted of youths aged 18–35 years in Ogun State who had received training from Soilless Farm Lab. Simple random sampling was used to select the respondents. A list of 2,320 trained youths was obtained from the institution and used as the sampling frame. From the list, 232 youths, representing 10% of the population, were randomly selected for the study.

Data Collection and Analysis

Data were collected using a structured questionnaire. Data were collected with a structured questionnaire. The questionnaire covered the knowledge of trained youths about soilless agriculture, perceived benefits of choosing soilless agriculture as a career, attitude towards it as a career option, and perceived challenges of pursuing the career. The instrument was validated by six experts from the Department of Agricultural Extension and Management, Oyo State College of Agriculture and Technology, Igbo Ora. The reliability test was carried out using Spearman's Rank Order Correlation and a coefficient of 0.815 was obtained, indicating that the instrument was reliable. The study was conducted using respondents from only one training institution, which may limit the generalisation of the findings. Knowledge of soilless agriculture was assessed with Yes/No statements, where a correct answer was scored 1 and an incorrect answer was scored 0. Perceived benefits were assessed using a



three-point scale of Strong Benefit (2), Benefit (1), and Not a Benefit (0). The mean score for each item was calculated using a cut-off point of 1.0. Items with mean scores of 1.0 and above were considered perceived benefits, while those below 1.0 were regarded as not being benefits.

Attitude towards soilless agriculture as a career option was assessed using a five-point Likert scale ranging from Strongly Agree (5) to Strongly Disagree (1). Negative statements were reverse-scored before analysis. The means were used to summarise the responses, with 3.0 as the benchmark. Mean scores of 3.0 and above indicated a positive attitude, while scores below 3.0 indicated a negative attitude. Perceived challenges were assessed using a three-point scale of Severe (2), Mild (1), and Not a Challenge (0). Mean scores were calculated, with 1.0 used as the cut-off point. Items with mean scores of 1.0 and above were considered perceived challenges, while those below 1.0 were considered not to be challenges. Pearson Product-Moment Correlation (PPMC) was used to determine the relationship between perceived benefits and the attitude of trained youths towards soilless agriculture as a career option.

RESULTS AND DISCUSSION

Knowledge of Trained Youths about Soilless Agriculture

Results in Table 1 revealed that trained youths in Ogun State possessed a high level of knowledge about soilless agriculture, with an average percentage of 89.75%. Most of the respondents were familiar with the basic ideas and practices involved in soilless farming. About 93.97% knew that soilless agriculture involves growing crops without natural soil, while 93.10% indicated that the practice requires technical knowledge and good management skills. Also, 91.81% knew that nutrient solutions are needed for growing crops in soilless systems, and 90.52% understood the importance of maintaining the correct pH and nutrient levels. In addition, 89.66% of the respondents were aware that soilless farming can make efficient use of water and nutrients. The high level of knowledge recorded among the respondents may be linked to the training they received. The training appears to have helped the youths understand the basic requirements and practices of soilless agriculture, which could encourage them to consider it as a career. However, knowledge of growing media was lower than the other areas assessed. Only 79.74% knew that materials such as cocopeat, perlite, and rockwool can be used in soilless farming. This shows that there is still a need for more practical training on the different materials and techniques used in soilless production. The result supports the findings of Amusan and Adeleke (2024), who reported that exposure to practical training improves youths' knowledge and preparedness to engage in soilless farming enterprises. Therefore, continuous training and hands-on demonstrations are essential for strengthening the technical capacity of trained youths in Ogun State.



Table 1: Knowledge of Trained Youths about Soilless Agriculture

Knowledge Statement	Yes
Soilless agriculture is a farming system where crops are grown without the use of natural soil as the growing medium.	218(93.97)
Hydroponics is one of the major methods used in soilless agriculture.	207 (89.22)
Plants grown under soilless systems require essential nutrients supplied through nutrient solutions.	213 (91.81)
Soilless farming can be practiced in urban areas where land availability is limited.	202 (87.07)
Cocopeat, perlite, and rockwool can be used as growing media in some soilless farming systems.	185 (79.74)
Proper management of pH and nutrient concentration is important for successful soilless crop production.	210 (90.52)
Soilless farming can reduce problems associated with soil-borne diseases compared with conventional farming systems.	196 (84.48)
Regular monitoring of water quality is necessary for effective soilless crop production.	204 (87.93)
Soilless agriculture requires technical knowledge and proper management skills for successful operation.	216 (93.10)
Soilless farming can improve efficient use of water and nutrients compared with some conventional farming methods.	208 (89.66)

Source: Field survey, 2025

Perceived Benefits of Pursuing a Career in Soilless Agriculture among Trained Youths

Table 2 presents the perceived benefits of pursuing a career in soilless agriculture among trained youths. The respondents agreed with all the benefits listed, showing that they generally viewed soilless agriculture positively. Job creation had the highest mean score ($\bar{x} = 1.73$), indicating that the respondents saw soilless agriculture as a way of creating employment opportunities for young people. This finding is in agreement with Adepoju and Adekunle (2023), who reported that hydroponic and controlled-environment farming can provide employment opportunities and improve livelihoods. Environmental benefits, particularly sustainable farming, ranked second ($\bar{x} = 1.67$). This suggests that the respondents were aware of the environmental advantages of soilless agriculture and its potential to support more sustainable farming practices. Adepoju and Adekunle (2023) also highlighted the environmental benefits of modern agricultural production systems.

The ability to grow crops in urban areas ($\bar{x} = 1.64$) ranked third, while higher crop yield ($\bar{x} = 1.61$) ranked fourth. This shows that the youths recognised the usefulness of soilless farming where farmland is limited and its potential to increase crop production. The respondents also agreed that soilless agriculture is innovative and technology-based ($\bar{x} = 1.56$). This agrees with Folorunso *et al.* (2023), who found that the use of technology in agriculture can increase youths' interest in agribusiness. Other benefits identified by the respondents were reduced use of water and pesticides ($\bar{x} = 1.44$), shorter production cycle ($\bar{x} = 1.37$), lower labour requirements ($\bar{x} = 1.30$), and high-income potential ($\bar{x} = 1.30$). In general, the results show that the trained youths considered soilless agriculture beneficial because of its ability to provide employment, support sustainable farming, improve crop production, and offer opportunities for the use of modern technology.



Table 2: Perceived Benefits of Pursuing a Career in Soilless Agriculture among Trained Youths

Benefit Items	Mean	Rank
Job creation	1.73	1 st
Environmental benefits (sustainable farming)	1.67	2 nd
Ability to grow crops in an urban area	1.64	3 rd
Higher crop yield	1.61	4 th
Innovative and technology-driven	1.56	5 th
Less use of water and pesticides	1.44	5 th
Shorter production cycle	1.37	7 th
Lower labour requirements	1.30	8 th
High income potential	1.30	9 th

Source: Field survey, 2025 Mean cut-off = 1.0

Attitude of Trained Youths towards Soilless Agriculture as a Career Option

Table 3 shows the attitude of the trained youths towards choosing soilless agriculture as a career. The results indicated that the youths had a positive attitude, as all the statements had mean scores above the benchmark of 3.0. The statement with the highest mean score was the belief that soilless agriculture is important for sustainable food production ($\bar{x} = 3.97$). This was followed by the belief that it can provide employment for young people ($\bar{x} = 3.86$) and that it is a good career option for the future ($\bar{x} = 3.75$). The respondents also agreed that soilless agriculture is a modern and satisfying profession ($\bar{x} = 3.72$) and a suitable career for young people ($\bar{x} = 3.72$). Their interest in gaining more skills and practical experience ($\bar{x} = 3.69$) also shows that they were willing to learn more about the practice. This finding agrees with Folorunso *et al.* (2023), who reported that exposure to new agricultural technologies can increase youths' interest in agriculture and help them develop useful skills. It also agrees with Adepoju and Adekunle (2023), who found that youths are attracted to technology-based agricultural businesses because of the opportunities they provide for learning new skills, using new ideas, and developing a career. The result is also in line with the Theory of Planned Behavior by Ajzen (1991), which explains that a positive attitude towards an activity can increase a person's willingness to take part in it. The positive attitude recorded among the respondents therefore suggests that many of the youths may be willing to consider soilless agriculture as a career, especially when they have access to the required support and resources.

The respondents also saw soilless agriculture as a field that can encourage creativity and innovation ($\bar{x} = 3.66$) and provide good financial opportunities ($\bar{x} = 3.66$). They also indicated that they would be willing to choose it as a career if the necessary support was provided ($\bar{x} = 3.63$). This suggests that better access to training, finance, equipment, and government support may encourage more youths to take up soilless agriculture. This agrees with Osabohien *et al.* (2021), who noted that modern agricultural technologies can improve productivity, make better use of resources, and increase youths' involvement in agriculture.

However, some concerns were also identified among the respondents. The respondents were less confident about getting a regular income from soilless farming ($\bar{x} = 3.46$). They also agreed that the high cost of setting up a soilless farm could discourage them from choosing it as a career ($\bar{x} = 3.25$). Other concerns included the risks involved in soilless agriculture ($\bar{x} = 3.13$), the technical nature of the system ($\bar{x} = 3.12$), and the belief that conventional farming may be more reliable ($\bar{x} = 3.07$). These findings are similar to Folorunso *et al.* (2023), who identified high start-up costs, limited resources, and inadequate support as some of the problems affecting the adoption of modern agricultural practices. The results show that although the youths had a positive attitude towards soilless agriculture, concerns about cost, technical skills, income, and production risks still exist. More practical training, mentorship, demonstration farms, and technical assistance may therefore help to reduce these concerns and increase their confidence in choosing soilless agriculture as a career.



Table 3: Attitude of Trained Youths towards Soilless Agriculture as a Career Option

Statement	Weighted Mean Score	Rank
I believe soilless agriculture is an important approach for sustainable food production.	3.97	1 st
I believe soilless agriculture can provide employment opportunities for young people.	3.86	2 nd
Soilless agriculture is a promising career path for the future.	3.75	3 rd
Soilless agriculture is a contemporary and fulfilling profession.	3.72	4 th
I consider soilless agriculture a practical career option for youths.	3.72	5 th
I am interested in acquiring more skills and hands-on experience in soilless farming.	3.69	6 th
Soilless farming encourages creativity and innovation among youths.	3.66	7 th
I believe soilless agriculture has good financial prospects.	3.66	8 th
I am willing to pursue a career in soilless agriculture if the necessary support is available.	3.63	9 th
I have confidence in the ability of soilless agriculture to generate consistent income.	3.46	10 th
The high initial cost of establishing a soilless farm discourages me from choosing it as a career.	3.25	11 th
The risks associated with soilless agriculture make me hesitant to pursue it.	3.13	12 th
Soilless farming is too complicated and highly technical for me to pursue.	3.12	13 th
I prefer conventional farming methods because they are more reliable than soilless systems.	3.07	14 th

Source: Field survey, 2025 Mean cut-off = 3.0

Categorization of Attitude of Trained Youths towards Soilless Agriculture as a Career Option

Results in Table 4 revealed that 50.4% of respondents had a favourable attitude towards soilless agriculture as a career option, while 49.6% had an unfavourable attitude. This near balance suggests that although training contributed to improving youths' attitudes towards soilless agriculture, it was not sufficient to fully convince all participants of its long-term career potential. Some trained youths may still be influenced by concerns relating to high start-up costs, limited access to finance, technical challenges, and uncertainty about profitability.

Table 4: Categorization of Attitude of Trained Youths towards Soilless Agriculture as a Career Option

Attitude Level	Frequency	Percentage	Mean	Min. Score	Max. Score
Unfavourable Attitude	115	49.6			
Favourable Attitude	117	50.4			
Total	232	100	67.67	18	90

Source: Field survey, 2025

Perceived Challenges Trained Youths Faced in Adopting Soilless Agriculture as a Career Option

Results in Table 5 showed that all the identified factors were perceived as challenges to adopting soilless agriculture as a career option, as their mean scores exceeded the benchmark of 1.0. Limited access to funding ($\bar{x} = 1.48$) was the major challenge reported by the respondents. This shows that lack of money is a major problem affecting youths' involvement in soilless agriculture. This result is similar to the findings of Amusan and Adeleke (2024), who found that financial difficulties can limit youths' involvement in agricultural innovations that require high investment. High initial cost ($\bar{x} = 1.45$) was the second major challenge, showing that setting up a soilless farming system requires considerable capital. Lack of government support ($\bar{x} = 1.32$) ranked third and indicates that government assistance and extension services may not be sufficient. Amusan and Adeleke (2024) also reported that inadequate government and institutional support can affect the adoption of new agricultural practices among youths. Poor market access ($\bar{x} = 1.18$), lack of technical knowledge ($\bar{x} = 1.15$), and difficulty in maintenance ($\bar{x} = 1.14$) were also identified as challenges, but they were less serious than the financial and government-related problems. This is in line with Egbofuku *et al.* (2021), who reported that



inadequate technical skills and poor market opportunities can discourage youths from taking part in modern agricultural businesses. Lack of training and knowledge ($\bar{x} = 1.02$) had the lowest mean score, but it was still considered a challenge since the value was above the decision benchmark. The relatively lower rating may reflect respondents' previous exposure to training programmes, which reduced, but did not eliminate, knowledge-related constraints.

Table 5: Perceived Challenges Trained Youth faced in Adopting Soilless Agriculture as a Career Option

Challenges	Mean	Rank
Limited access to funding	1.48	1 st
High initial cost	1.45	2 nd
Lack of government support	1.32	3 rd
Poor market access	1.18	4 th
Lack of technical knowledge	1.15	5 th
Maintenance difficulty	1.14	6 th
Lack of knowledge training	1.02	7 th

Source: Field survey, 2025 Mean cut-off = 1.0

Relationship between Perceived Benefits of Soilless Agriculture and Attitude of Trained Youths toward Soilless Agriculture as a Career Option

The results in Table 6 showed a significant positive correlation between perceived benefits and trained youths attitude towards soilless agriculture as a career option ($r = 0.180^{**}$, $p = 0.000$; $r^2 = 0.032$). The findings show that respondents who are more aware of the benefits of soilless agriculture tend to have a more positive attitude towards it. However, the relationship is weak, as perceived benefits explain only 3.2% of the differences in respondents' attitudes. This suggests that other factors such as institutional support, access to finance, and training quality play a larger role in shaping youths' career perceptions. This finding agrees with Ogunkunle *et al.* (2023), who found that young people's use of improved farming practices is influenced by the benefits they perceive. It also supports the findings of Izuogu *et al.* (2023), who reported that the use of modern agricultural technologies can increase youths' interest in farming. Okonta *et al.* (2023) similarly found that willingness to adopt innovative farming practices is linked to perceived economic and environmental advantages.

Table 6: Relationship between Perceived Benefits of Soilless Agriculture and Trained Youths Attitude towards Soilless Agriculture as a Career Option

Variable	N	r-value	r ²	p-value	Decision
Perceived Benefits vs Attitude towards Soilless Agriculture as a Career Option	232	0.180**	0.032	0.000	Significant

Source: Data analysis, 2025 $p < 0.01$ (2-tailed); $n = 232$; r^2 = coefficient of determination

CONCLUSION AND RECOMMENDATIONS

The study found that the trained youths in the study area had sufficient knowledge of soilless agriculture and were aware of its benefits, especially its potential to create jobs, protect the environment, and support crop production in urban areas. Although the overall attitude was slightly favourable, nearly half of the respondents remained hesitant about pursuing it as a long-term career option. This indicates that addressing challenges such as limited funding, high establishment costs, weak institutional support, and market constraints is necessary to translate youths' knowledge and positive disposition into active participation in soilless agriculture enterprises.

Based on the findings of the study, the following recommendations are made:



- i. Government agencies, financial institutions, NGOs, and private investors should provide funding, grants, and subsidies to help young people overcome the high cost of starting soilless farming businesses.
- ii. Training institutions and extension organisations should provide more practical training, technical support, mentorship, and demonstration activities to help youths develop the skills and confidence needed for soilless farming.
- iii. Policymakers should include soilless agriculture in youth empowerment programmes and provide the necessary policies, extension services, and other forms of support.
- iv. Stakeholders should help farmers connect with suitable markets and encourage the development of affordable technologies that can reduce production costs, increase profit, and support continued youth involvement in soilless agriculture.

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