

## Assessment of the cultivation of underutilised indigenous vegetables among youth farmers in Osun state, Nigeria

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### ABSTRACT

Nigeria is known for her diversity in nutritional and economical indigenous vegetables that a traditional meal without it is assumed to be incomplete. Some of these traditional and indigenous vegetables are under-cultivated and going into extinction. These underutilised-indigenous vegetables (UIVs) could generate revenue, provide employment, and give adequate nutritional benefits if properly utilised. However, low cultivation, deforestation and indiscriminate burning have affected their yields and utilisation. This study, therefore, focused on the assessment of the cultivation of UIVs among youth farmers in Osun State, Nigeria. It identifies the personal characteristics, determine the level of cultivation of UIVs and examine the constraints militating against engagement of youths in its cultivating. A multi-stage sampling procedure was used to select 180 youth vegetables farmers from three Agricultural Development Programme zones of the state. Data were collected through interview schedule and subjected to descriptive (mean, frequency and percentage) and inferential (Pearson Product Moment Correlation) statistics. Findings show that majority (70.0%) of the young vegetable farmers was male; 98.3% had farm size below one hectare of land; 68.3% leased their farmland and 60.8% of them were between 28 and 32 years. The study also shows a low level of cultivation of UIVs among youth farmers ( $\bar{x}=5.8889$ ). Poor market ( $\bar{x}=1.95$ ), inadequate finance ( $\bar{x}=1.93$ ) and pest and disease attack ( $\bar{x}=1.82$ ) were the main constraints affecting the cultivation of UIVs in the State. The study concluded that level of cultivation of UIVs was low and recommended the need for youths to be motivated into vegetable cultivation with the provision of subsidized inputs and investment in programmes that gear up publicity campaign on the nutritional and economic importance of UIVs.

**Keywords:** Vegetable farmers, Underutilised-indigenous vegetables, Youth farmers

### INTRODUCTION

Nigeria is well known for her diversity in many nutritional and economical indigenous vegetables which in past years have helped in so many ways, some of which are; employment opportunities for many peasant farmers, nutritional use, and medicinal purposes. For instance, pumpkin is well known for increasing blood in the body. The vegetable has between 30 and 50 percent of iron and vitamins A in resource-poor diet (Badmus and Yekinni, 2011). Other merits of these indigenous vegetables include; income for farmers and producers of food.

Vegetables are an important feature of Nigerians diet that a traditional meal without it is assumed to be incomplete. Despite this, in developing countries, the consumption of vegetables is generally lower than Food and Agricultural Organization (FAO) recommendation of 75kg per year and (206g per day) (Badmus and Yekinni, 2011). Adebooye, Ogbe and Bamidele (2003) identified an expanded list of twenty-four indigenous leafy vegetables that are eaten in

southwestern Nigeria, while Odhav, Beekrum, Akula, and Baijnath (2007), noted that indigenous vegetables and fruits serve as inexpensive but highly nutritious food sources for the poor segment of the population. This means that if given quality attention these numerous UIVs will meet to a great extent the nutritional needs of not just the less privileged but the entire populace at large.

The term underutilised refers to categories of wild and cultivated plants which in general, involve species whose potentials have not been fully realized and utilised. It may also mean plants currently abandoned by farmers or in declined but which could be revived through specific interventions such as adding value to marketing (Pudulosi, and Hoeschle-zeledon, 2004). Indigenous Vegetables can also be simply defined as “those crops, which are part of a larger biodiversity portfolio, once more popular and today neglected by user’s group for vary of agronomic, genetic, economic, social and cultural factors”. According to Padulosi and Hoeschle-Zeledon, (2004), orphan, abandoned, niche, promising,

underdeveloped and other terms are often used as synonyms for underutilised species.

Some of the underutilised indigenous vegetables in Osun State are listed in Table 1.

**Table 1: Names of Underutilised Indigenous Vegetables in Osun State**

S/N	Botanical name	English name	Yoruba name
1.	<i>Telfairia occidentalis</i>	Fluted pumpkin	Apiroko/Iroko/Ugu
2.	<i>Solanum nigrum</i>	African nightshade	Odu
3.	<i>Solanum macrocarpon</i>	African eggplant	Igbagba/Igbo
4.	<i>Solanum scabrum</i>	Scarlet eggplant	Ogunmo
5.	<i>Trichosanthes cucumerina</i>	Snake tomato	Tomato elejo
6.	<i>Veronica omygdalina</i>	Bitter leaf	Ewuro
7.	<i>Curcubita pepo</i>	Field pumpkin	Elegede
8.	<i>Seneciobifrae</i>		Woorowo
9.	<i>Crassocephalum crepidoides</i>	Fireweed	Ebolo
10.	<i>Amaranthus viridis</i>	Amaranth	Teteatetedaye
11.	<i>Corchorus solitorus</i>	Corchorus	Eweddu
12.	<i>Ocimum gratissimum L</i>	Scent leaf plant	Efinrin
13.	<i>Talinum triangulare</i>	Water leaf	Gbure
14.	<i>Lactucataraxacifolia</i>	Wild lettuce	Yanrin
15.	<i>Ocimum gratissimum L.</i>	Scent leaf	Efirin
16.	<i>Celosia argentea L.</i>	Plumed cockscomb	Soko
17.	<i>Solanum aethiopicum</i>		Osun

Source: NI-CAN Vegetable project, 2012

Over the years, the diversity of these indigenous vegetables is being seriously eroded as a result of the multiplicity of environmental and socio-cultural factors. Evidence of this is the fact that most of these vegetables are very scarce to come by nowadays. These vegetables have been so underutilised that their nutritional and economic strength is going to oblivion especially among youths who seem not to know much about these vegetables. The need is therefore for youths to be encouraged to take up the cultivation of these underutilised-indigenous vegetables so that we can prevent them from extinction due to their great benefits of these vegetables.

Adebooye and Opabode (2004), stated the following as common features UIVs:

- i. These vegetables have contributed to income generation, food security and nutrition of the places of origin
- ii. Associated with cultural heritage of their local origin
- iii. Are mainly grown in the wild with little or no documentation
- iv. Have little or no formal link for seed supply
- v. Have traditional uses in their places of origin
- vi. They are mostly not planted but collected in the wild
- vii. Researchers, extension services, farmers, policy and decision makers, technologist and

consumers do not pay attention to these vegetables and

- viii. May be having high medicinal, vitamins and mineral values

However, the cultivation level of these vegetables is alarming. Despite all the economic and nutritional benefits of these vegetables, it is still a known fact that most of them are only being gathered from the wild from time immemorial, and those being cultivated are on a very small scale by few peasant farmers, and the problem of deforestation, indiscriminate burning, and spraying of herbicides has adversely affected these indigenous vegetables (Mofeke, Ahmada and Mudiane, 2003).

The transformation of Nigeria's agricultural sector back to its rightful position as Nigeria's leading sector in terms of revenue generation and employment amidst other reasons has been receiving attention from successive governments of the country, albeit little success. A lot of factors could be responsible for this, one of which is government's failure to focus on grass root agriculture, which is practiced by peasant farmers who take close to 80% of the population of Nigerian farmers (Okuneye and Ayinde, 2011), and are mainly involved in vegetable cultivation. Another factor that could lead to the non-participation of youth in agriculture which has left our food production in the hands of ageing farmers

who are moving away from active and productive ages, as Mofeke, Ahmada and Mudiane (2003), reported that Vegetable production in Nigeria is highly characterised by use of crude implements, non-availability of inputs, illiteracy, expensive and complex technologies.

In spite of the nutritional, medicinal, cultural and diverse resource value of the Underutilised Indigenous Vegetables (UIVs) and their immense contributions to food security and economic growth in Nigeria which were highlighted by Iniaghe, Malomo and Adebayo (2009), who stated that non-starchy vegetables are rich sources of dietary fibre used in the treatment of obesity, diabetes, cancer, and gastrointestinal disorders. Adebooye, Ogbé and Bamidele (2003) who also reported that in addition to serving as vegetables, some plants are also used in preparing of traditional medicine in Africa, it is still observed that many of them have been under-cultivated and the little cultivation/gathering is done by the aged farmers. This has led to the majority of these vegetables going to extinction. There is, therefore, an urgent need for a critical look into the cultivation of these UIVs; its current status vis-a-vis ways to save them from going into extinction and human populace missing out on their numerous benefits.

Specifically, this study identifies the personal characteristics of youth vegetable farmers in Osun state, determine the level cultivation of UIVs by youth vegetable farmers in the study area, and examine the constraints militating against youths cultivating UIVs in the study area.

## METHODOLOGY

Primary data was used for this study. Data were collected with the aid of a structured interview schedule. The study was conducted in the three (3) Agricultural Development Programme (ADP) zones of Osun state, namely, Osogbo, Iwo, and Ife/Ijeshazones. A multistage sampling procedure was used to select a sample for the study. In the first stage, 2 Local Government Areas (LGAs) was purposively selected from each of the 3 Agricultural Development Programme (ADP) zones, based on their involvement in the cultivation of indigenous vegetables, making six LGAs. In the second stage, random sampling was used to select 4 communities from each LGA where vegetable cultivation is predominantly practiced, making a total of 24 communities. Finally, the estimated number of youth vegetable farmers were gathered from each community and 5% of farmers randomly selected from the list, this gave a total of 198 young

vegetable farmers from the three ADP zones of Osun State, but only 180 questionnaires were analyzed for this study. The data collected were subjected to descriptive statistics such as mean, frequency and percentage, and inferential statistics was measured with Pearson Product Moment Correlation (PPMC). The level of cultivation of UIVs was measured thus;

A list of the 10 underutilised indigenous vegetables was presented. The farmers were asked to indicate whether they cultivate the vegetables or not with response option of Yes and No which were scored as 1 and 0, respectively.

Total score was 10 and maximum score obtainable for each farmer was 10 while minimum was 1 point. To determine the level of cultivation, the mean and the standard deviation was calculated. Mean plus standard deviation gave the High level of cultivation, mean minus standard deviation equalled low level of cultivation. The difference between High and low gave the medium level of cultivation.

## RESULTS AND DISCUSSIONS

### Socioeconomic characteristics

Results in Table 2 reveals that the mean age of the youth farmers was 28 years, the majority were male (70.0%), single (55.8%), had between 1 and 2 persons as household size (55.8%) and practiced Islam (55.0%). This is contrary to the general belief that vegetable cultivation is dominated by female, as they were predominantly male, agile and fit (physically and mentally) for agricultural work, with small family size that suggests they will be able to focus on vegetable cultivation as they may not have a large family to feed. The result also shows that 47.5% of the youth farmers had secondary education with only 3.3 % not having any form of formal education. This implies that majority of the respondents have the basic form of education and this is similar to the findings of Adebisi-Adelani, Olajide-Taiwo, Adeoye and Olajide Taiwo (2011), who found out that 43.8% of Fadama vegetable farmers in Oyo state have secondary school education. Majority of the youth farmers (68.3%) leased their farmlands, this implies that the youth do not have any personal land for farming and this will affect their use of the land as the owner can take the land away from them anytime. Government at all levels therefore need to do more to help the young farmers to have direct access to land so as to reduce the burden of rent paid on leased land and thereby increase production cost available to the farmers.

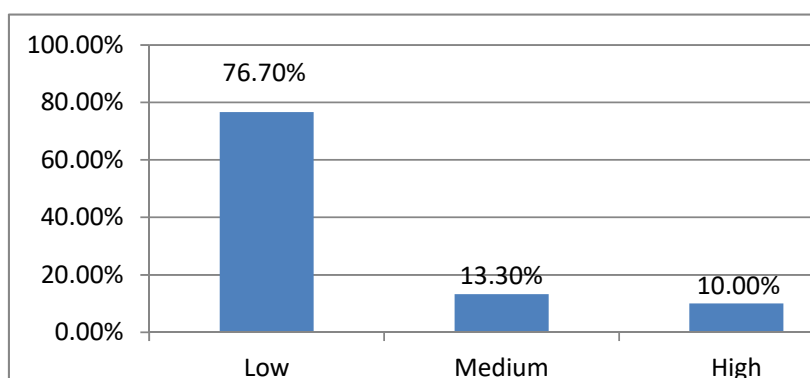
**Table 2: Distribution of the respondents according to their socio-economic characteristics (n =180)**

<b>Variables</b>	<b>Frequency</b>	<b>Percentage</b>
<b>Sex</b>		
Male	126	70
Female	54	30
<b>Age</b>		
18-22	12	6.7
23-27	24	13.6
28-32	109	60.8
>32	35	19.2
Mean	28	
<b>Marital status</b>		
Single	100	55.8
Married	80	44.2
<b>Educational level</b>		
No formal education	6	3.3
Primary school	54	30
Secondary school	85	47.5
Post-Secondary school	35	19.2
<b>Religion</b>		
Christianity	81	45
Islam	99	55
<b>Household size</b>		
1.2	100	55.8
03-Apr	32	17.5
05-Jun	48	26.7
<b>Land acquisition</b>		
Inheritance	39	21.7
Purchase	14	7.5
Gift	5	2.5
Leased	122	68.3
<b>Farm size</b>		
Less than a hectare	177	98.3
A hectare	3	1.7

**Level of cultivation of underutilised indigenous vegetables**

The result in Figure 1 shows that majority (76.7%) of the respondents were at a low level of cultivation, 8.9 percent were at a medium level of

cultivation while 10 percent were at a high level of cultivation. This implies that UIVs are not well cultivated by youth farmers in Osun State and if care is not taken, the vegetables might be heading for extinction.



**Figure 1: Level of cultivation of UIVs**

### Constraints to Underutilised Indigenous Vegetables production

Table 3 shows the distribution of youth farmers based on the constraints facing UIVs cultivation in the study area. According to the youth farmers, poor market ( $\bar{x}=1.95$ ), inadequate finance ( $\bar{x}=1.93$ ) and pest and disease attack ( $\bar{x}=1.82$ ) were the major constraints facing the cultivation of UIVs in Osun State. This implies that youth vegetable farmers like every other group of farmers in Nigeria are faced with the problem of finance which limits their input purchase, productivity and

also affects their ability to transport their produce to big markets where they would make good remuneration. There is a link between these constraints and the low level of cultivation of UIVs recorded by the farmers as inadequate finance coupled with pest and disease infestation and the poor market will discourage increased production.

This result is similar to the findings of Adebisi-Adelani, Olajide-Taiwo, Adeoye and Olajide-Taiwo (2011), who identified the inability to hire labour, lack of credit and livestock disturbance as major constraints to vegetable production in Oyo state, Nigeria.

**Table 3: Distribution of respondents according to the constraints faced**

Constraints	Severe constraint	Mild Constraint	Not a Constraint	$\bar{x}$	Rank
Poor market	95.8	3.3	0.8	1.95	1 <sup>st</sup>
Inadequate finance	93.3	6.7	0.0	1.93	2 <sup>nd</sup>
Pest and diseases attack	82.5	17.5	0.0	1.82	3 <sup>rd</sup>
Seed unavailability	68.3	30.0	1.7	1.67	4 <sup>th</sup>
The high cost of production	55.0	41.7	3.3	1.52	5 <sup>th</sup>
Poor access to extension service	35.0	63.3	1.7	1.33	6 <sup>th</sup>
Unavailability of land	15.8	80.8	3.3	1.12	7 <sup>th</sup>
Perishability	26.7	55.0	18.3	1.08	8 <sup>th</sup>
Low demand for UIVs	4.2	58.3	37.5	0.67	9 <sup>th</sup>
Inadequate knowledge of harvesting	6.7	46.7	46.7	0.60	10 <sup>th</sup>

### Relationship between constraints and level of production of underutilised indigenous vegetables

Table 4 reveals that a negative and significant relationship existed between constraints such as unavailable land ( $r= -0.196$ ,  $p<0.05$ ), inadequate finance ( $r= -0.259$ ,  $p<0.05$ ), low demand for UIVs

( $r= -0.221$ ,  $p<0.05$ ), pest and disease attack ( $r= -0.413$ ,  $p<0.05$ ), poor market ( $r= -0.345$ ,  $p<0.05$ ) and the level of cultivation of UIVs among youth vegetable farmers.

This result connotes that the higher the constraints faced by farmers, the lower the level of cultivation of UIVs.

**Table 4: PPMC relationship between constraints and level of cultivation**

Constraints	r-value	p-value	Decision
High cost of production	0.008	0.95	Not Significant
Unavailability of land	-0.196	0.042	Significant
Inadequate knowledge on harvesting	0.026	0.700	Not Significant
Seed unavailability	0.101	0.124	Not Significant
Inadequate finance	-0.259	0.007	Significant
Poor access to extension service	-0.003	0.98	Not Significant
Pest and diseases attack	-0.413	0.000	Significant
Poor market	-0.345	0.000	Significant

### Conclusion and recommendations

The study concludes that majority of the young farmers were male, single and had a formal level of education; they had access to land through lease

and faced some challenges that reduce the cultivation of UIVs which lead to low level of UIVs cultivation among youth farmers.

Based on the findings of the study, it is recommended that female youths should be motivated into vegetable cultivation and subsidized inputs such as grants, pesticides and seeds should be provided by government, Non-governmental organizations and individuals to UIVs farmers. Also, Extension programmes geared toward the publicity of the nutritional and economic importance of underutilised indigenous vegetables should be embarked upon by governments and relevant institutions for both farmers and consumers in order to increase the demand for UIVs in the market.

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