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***E-mail:*** *jrfwe2019@gmail.com; jfewr@yahoo.com*
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# MEDICINAL SURVEY OF PLANT IN SELECTED COUNCIL WARDS IN OTUKPO LOCAL GOVERNMENT AREA OF BENUE STATE

**Origbo B. U.,[1] Enefola J. O. A.[2] and Aondoakaa M. A.[3]**

[1,2,3]Department of Social and Environmental Forestry, College of Forestry and Fisheeries, Joseph Sarwuan Tarka University Makurdi, Benue State.

*Corresponding Author: utabeno2006@gmail.com; +234 806 636 6134

**ABSTRACT**

*A survey of medicinal plants species in home gardens in selected Council Wards in Otukpo Local Government Area, Benue State to identify plants that are used for medicinal purposes in the area. Applying a multi-stage sampling technique, 150 household members were sampled and interviewed to elicit data. These were analysed using descriptive statistics. The result showed Scent leaves and Guava had 99% respectively as the highest., Aloe vera, Moringa, Ugwu and Pawpaw respectively come second each with 90%. Other plant species were Sweet potato (64%), Mango (61%), Garden egg (59.33%) respectively. The least prevalent plant species mentioned were (Ogblichi tree (18%), Jerusalem leaf (13.33%), Egbe (12%), Enache (7.33%) and Ichinkla (6%) respectively. Comprising 20 leaves, 2 stem, 5 barks, 7 fruits and 5 roots show leaves recorded the highest use value. The various diseases are diabetes, stomatitis, cough, sore throat, tooth, tooth decay, jaundice, Cough/dry throat, Skin infection, Antidote against poison, Headache, Asthma, Urinary disease, Stomach-ache, to reduce obesity and used as digestive, Hypertension, Constipation, Sexual disorder, Skin-disorder, Blood supplements.*

**Keywords:** Medicinal plants, diseases, Otukpo, home gardens

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## INTRODUCTION

Home-gardens involve the management of multipurpose trees, shrubs, annual and perennial crops, herbs and medicinal plants, birds and animals on the same land unit in a spatial or temporal sequence (Adewusi, 2010). It is a traditional land use practice carried out around a homestead consisting of several species of plants that are grown and maintained by the family members with the primary objective of fulfilling the family's consumption needs (Ahmad, 2004). They are production systems of diverse crop plants, which are easily accessible and adjacent to household (Albuquerque, 2015). Medicinal plants have played a major role in human societies throughout history and prehistory and people have used plants as medicine since the beginning of civilization, as they were believed to have healing powers.

Medicinal plants are considered a repository of numerous types of bioactive compounds possessing varied therapeutic properties. Medicinal plants are in high demand as they serve other functions in our lives. Although a good number of these species are of little use or substituted by others of better values (Ved, 2007). According to the World Health Organisation (WHO), a variety of drugs are obtained from different medicinal plants, and about 80% of the world's developing population depends on

traditional medicinal medicines for their primary health care needs. The use of medicinal plants as a way of maintaining or recuperating a good health status is considered valuable by various communities in Brazil, such as that comprising urban dwellers (Carniello et al., 2010).

The study of indigenous cultivation, food production, local medicinal knowledge and varied use of vegetal species has implication for food nutrient augmentation, as well as discovery of new medicines (Aworinde *et al*., 2013). Medicinal plants are very much relevant today are proned to overexploitation or overuse (Fasola and Ogunsola, 2014)

Home gardens represent land use systems involving deliberate management of multipurpose trees and shrubs in intimate association with annual and perennial agricultural crops and invariably livestock within the compounds of individual houses (Bridson and Foreman, 2008). For decades, home gardens have shown to be significant to rural inhabitants by providing a wide range of useful products such as fruits, vegetables, medicine and building materials (Ahmad, 2004 and Burkill, 2015). Worldwide, home gardens are a community's most adaptable and accessible land resources and important components in reducing vulnerability and ensuring food security (Fernandes, 2014).

The rationale for this study is to document information on the medicinal plants available in-home gardens in Otukpo Local Government Area, and their uses. There is a growing attention in ethno-biological literature to what Nabhan has called the ethno-biosphere (Nabhan, 2016). Urban home or domestic gardens are important indicators of medicinal plant use in the city (Barthel *et al*., 2010; Barthel *et al.,* 2015) and are therefore important sites to understand urban health practices and bio-cultural knowledge transfers (Finerman and Sackett, 2003; Emery and Hurley, 2016). Hence the need for this very study.

## MATERIALS AND METHODS

### Study Area

Otukpo Local Government Area of Benue State is located on latitude 7.1982 ° N and longitude 8.1393° E. it is one of the most populated areas in Benue State with a total population of 261, 666 (NPC, 2006). The Local Government Area is bordered by the Apa to the North, Ohimini to the West, Ado to the south and Olamaboro to the west, and it is made up of several towns and villages such as Allen, Adoka-icho, Adoka Ehaji, Entekpa, Icho, Adoka, Ogboju, and Otobi. Although the Idoma people are the majority in Otukpo Local Government Area, There are other tribes like Hausa, Igbo, Igede, Tiv, Etulo, Yoruba among others. The average annual temperature is 27.2 °C. The warmest month of the year is March with an average temperature of 29.3 °C. About 1723 mm of precipitation falls annually. The driest month is December with 9 mm. Most precipitation falls in September, with an average of 282 mm (Climate-data, 2013). Otukpo Local Government lies within the Southern Guinea Savannah with its characteristic coarse grasses and numerous species of scattered trees. However, persistent clearance of the vegetation for arable agriculture and the practice of bush fallow system has led to the development of vegetation regrowth at various levels. The vegetation is sparsely distributed except in open shallow valleys where the vegetation is denser. Vegetation of economic value includes Locust bean, Shea tree, Mahogany, *Isoberlina doka*, and fruit trees such as Mango.

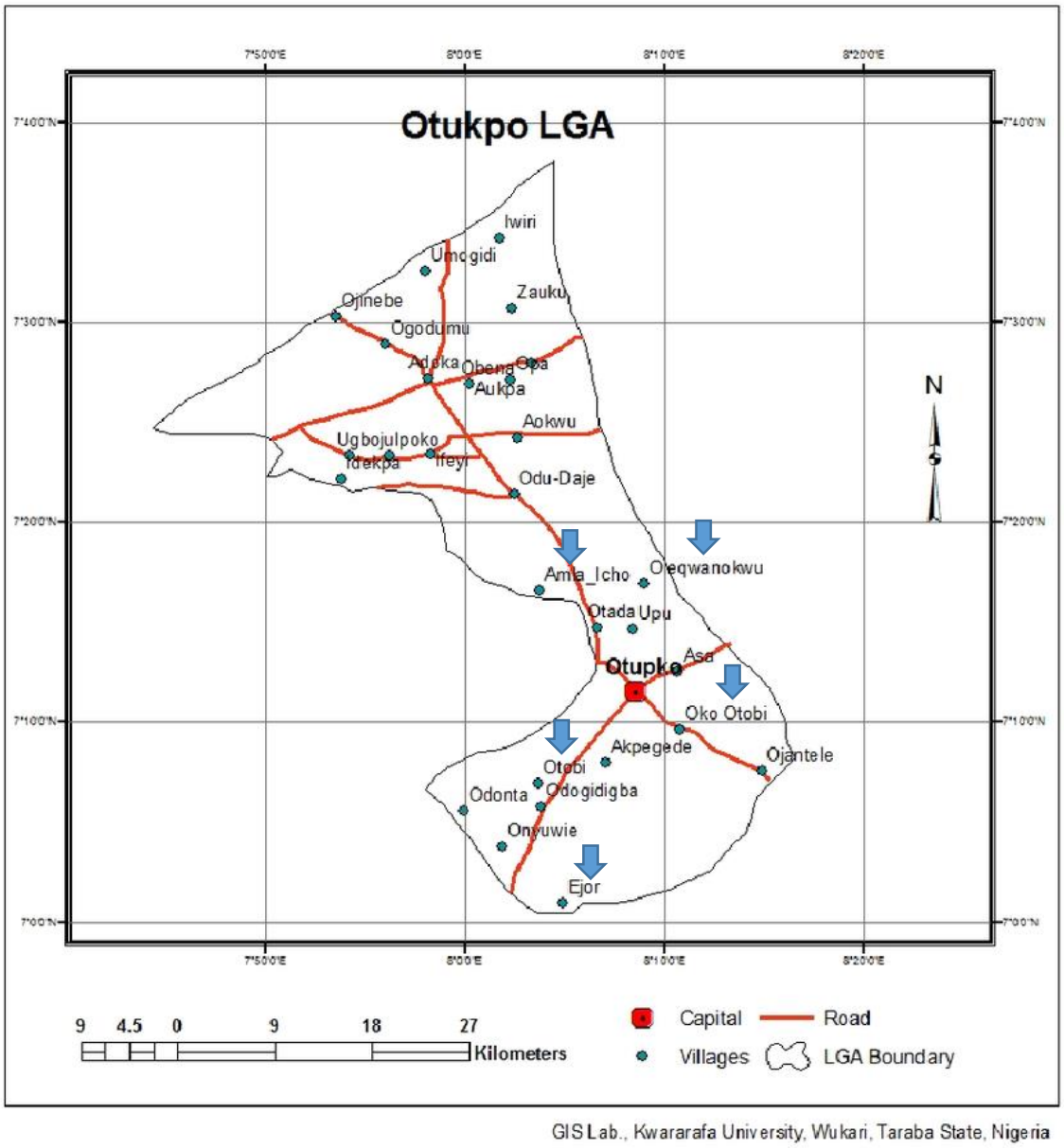


**Plate 1: Map of Otukpo Local Government Area Showing the various council wards**

**Source: Google map (2017)**

**Samples and Sampling Techniques**

A multi-stage sampling technique was used for the sample population. The first was purposive selection of five council wards due to prevalence of home gardens. Then ten (10) households each from the council wards with at least 3 household members each were purposesively selected and interviewed for the study. Therefore, 150 respondents were selected as the sampled population of the study.

The plants raised in the home gardens were identified with the assistance of the respondents in Oturkpo Local Government Area who participated in the home garden practices and also by consulting of published and unpublished materials.

**Data Collection**
Data collected from the study were from two sources; the primary and secondary sources. The primary data were collected using semi-structured questionnaire administered to the sampled household members in the study area, while secondary data was from the review of existing literature.

**Data Analysis**
The data collected were analyzed by simple descriptive statistics such as tables, frequencies, percentages and charts.

**RESULTS**
The result presented in Table 1 shows a list of plants raised in home gardens in Otukpo Local Government Area. The most abundant plants raised in home garden within Otukpo LGA are Scent leaves, Guava, Aloe vera, Moringa, Ugwu, Pawpaw, Sweet potatoes, Mango, Garden egg, neem tree, pepper, and the least plants are Ogblichi tree, Egbe, Jerusalem leaf, Enache and Ichinkla. The list of plants with medicinal values raised in home garden have their respective medicinal values. Parts such as the roots, the leaves, the stems, the bark and others such as the seeds, the fruits and even some times the sap of the plants. These different plants parts are used for treatment of various diseases in the study area. These diseases among others include diabetes, stomatitis, weakness of the body, cough, sore throat, tooth, tooth decay, jaundice, Cough/dry throat, skin infection, Antidote against poison, headache, asthma, urinary disease, Stomach-ache, to reduce obesity and used as digestive, Hypertension, headache, Constipation, Sexual disorder, skin disorder, blood supplements among others.

**Table 1: The Lists of Various Plant Species Raised in Home Gardens in Otukpo Local Government Area**

| Common name | Scientific name | Family name | Frequency | Percentage (%) |
|---|---|---|---|---|
| Mango | *Mangifera indica* | Anacardiaceiae | 92 | 61.33 |
| Pepper | *Piper guineeensee* | Piperaceae | 62 | 41.33 |
| Garden egg | *Solanum marcrocarpon* | Solanaceae | 89 | 59.33 |
| Pawpaw | *Carica papaya* | Caricaceae | 115 | 76.66 |
| Moringa | *Moringa oleifera* | Moringaceae | 135 | 90 |
| Aloe vera | *Aloe vera* | Asphodelaceae | 120 | 90 |
| Ugwu | *Telfairia occidentalis* | Cucurbitaceae | 96 | 64 |
| Scent leaves | *Ocimum gratissimum* | Convolvulaceae | 135 | 90 |
| Potatoes | *Ipomea batatas* | Myrtaceae | 149 | 99.33 |
| Guava | *Psidium guajava* | Rutaceae | 149 | 99.33 |
| Orange | *Citrus sinensis* | Rutaaceae | 27 | 18 |
| Ichinkla | Spondias mombin | Anacardiaceae | 20 | 13.33 |
| Ebee | *Solanum nigrum l* | Solanades | 65 | 43.33 |
| Jerusalem leaf | *Jatropha tanjorensis* | Euphorbiaceae | 49 | 32.66 |
| Ogblichi tree | *Newboudia leavis seem* | Bignomiaceae | 11 | 7.33 |
| Bannana | *Musa spp* | Musaceae | 25 | 16.66 |
| Lemon grass | *Cymbopogon citrates* | | 18 | 12 |
| Dogoyaro | *Azadirachta indica* | | 14 | 9.33 |
| Ortra | | | 11 | 7.33 |
| Gana | | | 9 | 6 |
| Uklaga | *Gardenia aquillla* | rubiceae | 20 | 13.33 |

**Table 2: The Various Parts of the Plants Used for Medicinal Purposes in Otukpo Local Government Area**

| Common Name | Scientific name | Part Used | Diseases cured |
|---|---|---|---|
| Mango | *Mangifera indica* | Root, leaf, bark, fruit | Diabetes,, cough, sore throat, |
| Pepper | *Piper guineeensee* | Fruits, leaf, stem | Cough/dry throat, skin infection |
| Garden egg | *Solanum marcrocarpon* | Fruits, leaf | Kidney problems |
| Pawpaw | *Carica papaya* | Leaf, fruits | headache, asthma, urinary disease, |
| Moringa | *Moringa oleifera* | Leaf, Seed | digestive disorder, Fever |
| Aloe vera | *Aloe vera* | Root, Leaf, sap | Hypertension, Stomach-ache, |
| Ugwu | *Telfairia occidentalis* | Leaves | Convulsion, stroke, anaemia, increase |
| Scent leaves | *Ocimum gratissimum* | Leaves | Constipations, piles |
| Potatoes | *Ipomea batatas* | Leaves | Pile |
| Guava | *Psidium guajava* | Leaf, root, bark | Malaria,,Ulcers,dysentery, |
| Orange | *Citrus sinensis* | Fruit juice, peels | Antioxidant |
| Ichinkla | Spondias mombin | Bark | |
| Egbe | *Solanum nigrum l* | Leaves | Rheumatism |
| Jerusalem leaf | *Jatropha tanjorensis* | Leaves | Typhoid/malaria |
| Uwu | *Newboudia leavis seem* | Leaves | Waist pain |
| Enache | *Musa spp* | Leaves | Cough, infection |
| Ogblichi tree | *Cymbopogon citrates* | Leaves | |
| Bannana | *Azadirachta indica* | Fruit | Malaria, Muscle cramps |
| Lemon grass | | Leaves | fever, malaria, small |
| Dogoyaro | | Whole plant | Yellow fever |
| Ortra | *Gardenia aquillla* | Leaves | Infection , infertiility<br>Swollen body control |

**DISCUSSIONS**

The outcome of this study showed that many different plant species were raised in home gardens within Otukpo Local Government Area. The most popular plants raised in home garden within Otukpo` are Scent leaves, Guava, Aloe vera, Moringa, Ugwu, Pawpaw, Sweet potatoes, Mango, Garden egg, neem tree, pepper, and the least plants are Ogblichi tree, Egbe, Jerusalem leaf, Enache and Ichinkla which is in agreement with the report of Adewusi (2010), which stated that home gardens involve the management of multipurpose trees, shrubs, annual and perennial crops, herbs and medicinal plants. To overcome the problems of conventional classification algorithms in recognizing medical plants, one example is the way in which humans have interacted with plants developing various uses for them.

It was also observed in table 1 that all the plants raised in home garden having medicinal values, Scent leaves and guava all having the highest percentage of 99% respectively, Aloe vera, Moringa, Ugwu and Pawpaw coming second with the percentage of (90%) respectively, and thirdly by Sweet potato(64%), Mango(61%), Garden egg (59.33%) and the least percentages of (Ogblichi tree 18%, Jerusalem leaf 13.33%, Egbe (12%), Enache (7.33%) and Ichinkla (6%) which agrees with the report of Ruthenberg, (2010) which says that all plants raised in home gardens have medicinal values.

The highest use value of leaves, compared to other plants recorded in the study correlates with that Pala et al. (2019). This may perhaps be because of the medico-religious significance of leaves for multiples illnesses. Parts such as the roots, the leaves, the stems, the bark and others such as the seeds, the fruits and even some times the sap of the plants which is in agreement with the report of Soemarwoto and Conway (2011) are important ingredients in traditional medicine across the world. it was seen that the various plants can be used to treat various diseases such as Diabetes, stomatitis, cough, sore throat, tooth, tooth decay, jaundice, Cough/dry throat, skin infection, Antidote against poison, headache, asthma, urinary disease, Stomach-ache, to reduce obesity and used as digestive, Hypertension, headache, Constipation, Sexual disorder, skin-

disorder, blood supplements etc. this is in agreement with the report of Fokunang et al., (2011), which reported that all aliment are curable with the help of traditional medicines. The versatility of introduced medicinal plants in terms of numerous conditions treated as a result of direct selection or communities for more versatile plants that increase the opportunities for experimentation, therefore, the probability of discovery of additional medicinal application (Mosina et al., 2014) and community structures varies with different factors like socioeconomic status species composition, size class, site history and site conditions.

## CONCLUSION

This study showed that home gardens in Otukpo Local Government Area of Benue State are rich in terms of medicinal plants. The several plants species growing in the home gardens were frequently used for home remedies. Consequently, when the need for these products or medicines arises, the producers need not go far to get these herbal plants for combinations. The claims for cure of ailments need to be investigated further to identify the therapeutic properties of the plants. Home gardens make a substantial contribution to the supply of medicinal plants. Many of the people living in the study area don't practice home gardens either because of the lack of capital to start it or due to their busy schedule to maintain it. The growth of plants such has mango, pepper, garden egg, pawpaw, moringa, ugwu etc has other uses apart from medicinal values. These plants can also be used for food production and also it serves as a source of income the home garden keepers.

## RECOMMENDATIONS

Based on this research, the following recommendations were made;

i. Growing of home gardens should be encouraged in all households as safety nets towards improved household food security and health.
ii. Household and family education should be intensified on the establishment home gardens in the study area to boost health and economic development.
iii. More research should be carried out with the intent to discover more species to enrich the various home gardens, augment the farmers' income, and enhance rural employment.
iv. The paper recommends further investigations on medicinal plants to authentic their medicinal properties.

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