



## ETHNOBOTANICAL USES OF PLANTS BY THE IJAW PEOPLE IN PATANI, DELTA STATE, NIGERIA

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### ABSTRACT

This study was conducted to collect indigenous traditional knowledge about plants and their uses by the Ijaw people in Patani, Delta State, Nigeria. The ethnobotanical data were gathered through oral interview with native individuals comprising fourteen females and ten males of diverse age groups between 40 to 80 years. Twenty four (24) plant species belonging to eighteen (18) families were investigated including plants from families of Fabaceae, Euphorbiaceae, Asteraceae, Solanaceae, Poaceae, Musaceae, Convolvulaceae, Lamiaceae, Compositae amongst others which are utilized by native people for various purposes such as antidotes for poisoning, medicine, food, timber, adornment etc. Mostly used plant parts were leaves, stems, roots, barks, fruits and sometimes the whole plant. The results demonstrated that the area is rich in floral diversity but has not been studied extensively. This study provides baseline information of the ethnobotanical uses of plants in the area there by contributing to floral diversity conservation.

**KEYWORDS:** Ethnobotany, medicine, phytochemicals, Ijaw people.

### INTRODUCTION

Ethnobotany is a distinct branch of natural science which deals with various aspects such as anthropology, archaeology, botany, ecology, economics and medicine, religious, cultural and several other disciplines (Sharma and Kumar, 2013). The term ethnobotany was first used by John Harshberger in the year 1895 (Sharma and Kumar, 2013). It refers to the relationship and interaction between indigenous people with plants (Ajaib *et al.*, 2014). The importance of ethnobotanical utilization of plants among diverse indigenous people of the world cannot be over emphasized due to the increasing awareness of the vast potentials which are present in plants (Erhenhi, 2016). The use of medicinal plants for disease control in various communities will continue to play an important role in medical health care delivery in the developing countries of the world (Agbogidi, 2015). Phytochemicals present in plants includes tannins, phytate, saponins, alkaloids, flavonoids, cyanogenic glycerides (Obichi *et al.*, 2015). Others include carotenoids, steroids, phenolics, terpenoids, oxalates, glycosides cardiac glycosides (Akeem *et al.*, 2016). Herbal medicine practice in Nigeria currently is attracting serious attention from scientific and industrial community and world health organization supports the use of herbal medicine provided they are proven to be

efficacious and safe although not without pros and cons and drug – drug interactions. Nigeria tropical rainforests abounds with medical plants with promising medicinal values and activities that need to be researched. Grants to researches and research institutes will open new field. The traditional medicine Bill needs to be passed into law for it to be fully integrated into health care system (Falofundun and Imieje, 2013).

Due to the ongoing developmental activities, the traditional wisdom developed over centuries is vanishing rapidly. Spices phytochemicals have established as carcinogenesis blockers by modulating cell proliferation pathways transformation, inflammation and metastasis. They have been found to be immunity boosters and diminish inflammatory disorders (Butt *et al.*, 2013). Akeem (2016) noted that spices and other medicinal plants were still under – utilized in Nigeria due to lack of adequate knowledge of their health potentials. Therefore, documentation of valuable information known to the indigenous people has become imperative to preserve ages-old traditional knowledge which is mostly transferred by the word of mouth from one generation to another without any permanent record (Koushalya, 2012). There is an immense diversity of potential uses of indigenous plants that have not yet been discovered so it is important to bring to awareness the indigenous

knowledge of the local people. The objective of this work is to show the different ways plants are used by the people of Ijaw in Delta State. The study is hoped to bring to awareness the ecological significance of the indigenous plants found in Ijaw as well as to preserve and bring about optimum utilization of these plants for posterity purpose. Besides, phytochemicals as alternative has gained relative importance for the treatment of several ailments due to notable side - effects of several drugs.

## MATERIALS AND METHODS

### Description of study area

The study was conducted in Patani Local Government Area, Delta State, Nigeria. Patani is located along the coastal region of the Niger Delta area, between longitude 6 11' and 6 23' east of the Greenwich meridian and latitude 5 6' and 5 2' north of the equator (Okereke and Amgbare, 2010). Patani is made up of eight towns namely Taware, Akaure, Ogemware, Ekise, Osouware, Okruware, Ajfenaware and Abare. It forms a great part of the Kabu-owei tribe of the of the Ijaw speaking people which is made up of nineteen towns.

### Climate

The climate is profoundly influenced by its nearness to the Atlantic Ocean. There are two seasons in the year namely, dry and wet season. The dry season runs from November to March and the wet season from April to October. The mean annual rainfall is 231.41mm (Emaziye *et al.*, 2012). The rain falls throughout the year with peaks in June and September and a short break of low rainfall in August. The mean temperature ranges from 30.0 to 32.60 (Emaziye *et al.*, 2012). The relative humidity is usually high in the rainy season and low in the dry season.

### Vegetation

The vegetation of Patani is rainforest vegetation. Some examples of the plants found in this vegetation include *Musa paradisiaca*, *Jatropha curcas*, *Ficus exasperata*, *Panicum maximum*, *Portulaca oleracea*, *Terminalia catappa* etc.

### Figure 1: Map of Delta State showing the study area.

### Collection of samples

**Table 1: The local, botanical, family names and ethnobotanical uses of plants found in Patani, Delta State, Nigeria.**

S/N	Local names	Botanical names	Family	Ethnobotanical uses
1	Okobutoru	<i>Solenostemon monostachyus</i> L.	Lamiaceae	1) to stop stooling 2) to heal wounds
2.	Okeberi	<i>Portulaca oleracea</i> (Linn.)	Portulacaceae	1) for the treatment of ulcer 2) for proper development of foetus
3	Yonkore and	<i>Aspilia oleracea</i> (Pers.)	Compositae	1) for treatment of burns

Plants were randomly collected in Patani and were classified into trees, shrubs and herbs. Some of the plants were identified on the field while the others were identified with the aid of a herbarium. Photographs of the plants were collected to aid the identification process. Information regarding the indigenous use of the plants was gotten from twenty four indigenes that had vast knowledge on them and one interpreter was available to ease the communication stress as some of the locals could not speak English Language. The method used to elicit information from the population was by interview and focus group discussion.

### Data analysis

The data collected were derived from oral interview of local people. The respondents were both men and women of various ages. Data obtained were collected and tabulated to give the botanical names, vernacular names, families and the parts used were collated and tabulated. Descriptive statistical analysis such as charts was used in summarizing the ethnobotanical data.

## RESULTS

A total of twenty four (24) plant species belonging to twenty four (24) genera and eighteen (18) families were recorded in the present study which are being used for a variety of purposes by native people of Patani Local Government Area, Delta State. The detailed inventory is provided in Table 1 which includes local names followed by botanical names, family and ethnobotanical uses. The plants have different habits which range from trees, herbs and shrubs as shown in Figure 2. Plants collected showed that the herbs had the highest percentage plant utilization while trees were least in preference as compared to herbs which is followed by the percentage value for shrubs.

The analysis of the ethnobotanical data showed that the different plants play vital roles in the treatment of various ailments as well as for the sustainability of the locals as shown in Table 1. Major proportions of species were used for medicinal purposes while others were used for timber wood, food and other economic uses. The different plants and plant parts (leaves, roots, barks, seeds and fruits) are used for diverse purposes. The mode of administration varies from plant to plant as shown in Table 2.

				scalds	
4 Furokenna antibiotics	<i>Ocimum gratissimum</i>	Lamiaceae	1) used as	2) used to cure convulsion	3) for preparing local delicacies
5. Okponkuro Pomu	<i>Manihot esculenta</i>	Euphorbiaceae	1) stops bleeding	2) used for the preparation of various staple foods.	
6. Angulo	<i>Heteropogon contortus</i> (Linn.)	Poaceae	1) used for motivating the production of breast milk		
7. Guava pomu	<i>Psidium guajava</i>	Myrtaceae	1) used to stop stooling		
8. Tonkabien	<i>Phyllanthus amarus</i>	Euphorbiaceae	1) to heal wounds	2) used for the treatment of diarrhea	
9. Beri navel	<i>Bryophyllum pinnatum</i> (Linn.)	Crassulaceae	1) used for baby	2) for the treatment of cough	

**Continuation of Table 1**

S/N	Local names	Botanical names	Family	Ethnobotanical uses
10.	Lobulor	<i>Elaeis guineensis</i> (Jacq.)	Arecaceae	1) for snake bites 2) for food 3) for making native soap
11.	Agbinigbini	<i>Mimiosa pudica</i>	Fabaceae	1) it stops bleeding
12	Kpuke duku pomu	<i>Ipomoea batatas</i>	Convolvulaceae	1) used as food 2) used as blood tonic
13	Ebenitein	<i>Dacryodes edulis</i>	Burseraceae	1) eaten as food
14	Yeghere	<i>Terminalia ivorensis</i>	Combretaceae	1) used for canoe carving and for making planks
15	Origbo	<i>Vernonia amygdalina</i> (Dev.)	Asteraceae	1) used to treat malaria 2) used as an antidote for charm or poison
16	Opuru-enge	<i>Euphorbia hirta</i> (Linn.)	Euphorbiaceae	1) for breast milk production 2) used as dye for body tattoos
17	Oborikore	<i>Pupalia lappaceae</i> (Linn.)	Amaranthaceae	1) for the treatment of wounds 2) used as an antidote for charm
18	Obori-ila	<i>Coix lacryma</i> (Linn.)	Poaceae	1) seeds used as beads for adornment
19	Wonii-diri	<i>Senna occidentalis</i> (Linn.)	Fabaceae	1) used to drive snakes away from environment 2) used as medicine for fish trap
20	Tala	<i>Sacoglottis gabonensis</i>	Humiraceae	1) fruits used as chewing gum 2) trunk is best for canoe carving 3) bark is used to flavor palm wine 4) Heartwood is used to carve

S/N	Part used	Botanical name	Habit	Mode of administration
21	Okilolo	<i>Symphonia globulifera</i> (Linn.)	Guttiferae	axe handle 1) used for making paddles 2) used for making gum 3) used as timber
22	Enine	<i>Chromolaena odorata</i>	Asteraceae	1) for the treatment of fever
23	Ekpudo	<i>Musa paradisiaca</i>	Musaceae	1) it stops bleeding 2) it is used as food
24	Tomato pomu	<i>Solanum lycopersicum</i>	Solanaceae	1) used as food 2) used for the treatment of cataract and other eye infections

**Figure 2: Percentage of plants according to habits collected from Patani Local Government Area, Delta State.**

## DISCUSSION

The interaction between plants and humans is very strong and can never be separated as the dependence is obligate (Amjad *et al.*, 2015). Plant resources lead to the economic wealth of the inhabitants of an area. The twenty four indigenous plants collected play very vital roles in the collective lives of Patani people. The number of species collected showed the rich flora of the ecosystem. The diverse utilization of these plants by the people showed varied mode of administration of the plants in medicine, food as well as other cultural activities (Gottardi *et al.* 2016). The most widely used plant remedies by Patani people were obtained from herbaceous species which ranked the highest category of 13 species (54%) followed by the shrub species with 6 species (25%) and the tree species (21%). Similar findings were reported for herbs in the treatment of various human ailments (Pan *et al.*, 2014). Several authors including Parvaiz (2014), Singab (2015),

Gottardi (2016) have reported the utilization of plants in previous works. Different plants may be used to cure the same ailment but their method of application may vary or differ (Erhenhi, 2016). When one plant is not available, a substitute that serves the same purpose is used. While the leaves of *Ocimum gratissimum* are used for the treatment of catarrh, it was reported to be used as a medicine for constipation and also spices in cooking food (Erhenhi, 2016). *Aspilia africana* was reported to be used to treat various infections of bacteria origin such as gonorrhoea, stomach trouble etc (Essiet and Akpan, 2013) while it is being used for the treatment of burns and scalds as revealed by this study. The use of *Phyllanthus amarus* for several health problems such as diarrhoea and dysentery was confirmed by Verma *et al.* (2014) to be used for the same purpose. *Portulaca oleracea* was also reported to be used for the treatment of diarrhoea, dysentery etc (Mubashir *et al.*, 2011) and also for the treatment of ulcer.

**Table 2: Parts used, botanical name and mode of administration of some of the local plants.**

S/N	Part used	Botanical name	Habit	Mode of administration
1	Leaf	<i>Portulaca oleracea</i>	Herb	1) pound leaves until soft and add small native salt and palm oil. Take one tablespoon twice daily for ulcer 2) Take leaves with garlic for proper development of the foetus
2	Leaves	<i>Bryophyllum pinnatum</i>	Herb	1) Eat fresh leaves daily for medicine against bullet wounds
3	Leaves alligator	<i>Pupalia lappaceae</i>	Herb	1) chew fresh leaves together with pepper ( <i>Aframomum melegueta</i> ) as an antidote for charm.
4	Leaves	<i>Vernonia amygdalina</i>	Shrub	1) squeeze juice from leaves, add little salt and drink daily as treatment for malaria.
5	Seeds	<i>Coix lacryma</i> L.	Herb	1) collect seeds and join them together with strings to be worn on the neck or wrists as adornment.

6	Trunk, fruits and heartwood	<i>Sacoglottis gabonensis</i>	Tree	1) chew fruits as chewing gum 2) use the trunk for carving canoe 3) use the heartwood to make axe handle
7	Leaves	<i>Ipomoea batatas</i>	Herb	1) take decoction of leaves daily for blood
8	Leaves	<i>Ocimum gratissimum</i>	Shrub	1) pound leaves together with pepper <i>piper nigrum</i> and tie the mixture strongly around the dislocated part of the body.
9	Leaves	<i>Phyllanthus amarus</i>	Herb	1) Tie leaves to open wounds to stop bleeding 2) take tincture of leaves daily for diarrhea
10	Leaves	<i>Elaeis guineensis</i>	Tree	1) Treat snake bites with poultice made with palm fronds
11	Stem	<i>Musa paradisiaca</i>	Herb	1) take the decayed part of the stem that is close to the root and place on wounds to stop bleeding
12	Leaves	<i>Solanum lycopersicum</i>	Herb	1) put few drops of the juice from the leaves on the eyes for the treatment of cataract and other eye disease
13	Root	<i>Heteropogon contortus</i>	Herb	1) Uproot the plant from the ground, rinse the root with little water and rub it on the breast to motivate breast milk production.

## CONCLUSION AND RECOMMENDATION

The survey indicates that there is a high potential for ethnobotanical use of the existing flora so there is a strong need for their protection and conservation and that can only be achieved through the involvement of the local communities. Some of the medicinal plants identified so far should serve as a guide to the government, health care workers, agricultural extension experts and even modern medicinal experts in forming an integrating health system that could serve the common goal of maintaining, enhancing and sustaining good health are in Patani LGA. Since the uses of these plants are based on empirical knowledge, the scientific study of all these herbal drugs is highly desirable to establish their efficacy for safe use. It is also observed that some traditional plants in that area are fast eroding. Conservation efforts are needed by protection of these plants with maximum participation of local people. Deforestation should be discouraged as this result in loss of plant species. Afforestation should be enforced so that people who cut down trees would ensure that it is planted again.

## REFERENCES

- Aisha, A. F., Abu – Salah, K. M., Alrokayan, S. A., Siddiqui, M. J. and Ismail, Z. (2012). Syzguem aromaticum extracts as good source of benturuc acid potential anti – breast cancer. *Brasillian Journal of pharmacegroscopy*, 22: 335 -343
- Ajaib, M., Ashraf, Z., Riaz, F. and Faheem, S. (2014). Ethnobotanical studies of some plants of Tehsil Kharian, district Gujrat. *Journal of Biology*, 4(1): 65-71.
- Akeem, S. Joseph, J. Kayode, R. and Kolawole, F. (2016). Comparative phytochemical analysis and use of some Nigerian spices. *Gnoatian journal of food technology biotechnonology and nutrition*, 11(3-4): 145 -151.
- Amjad, N.S., Arshad, M. and Qureshi, R. (2015). Ethnobotanical inventory and folk uses of indigenous plants from Pir Nasoora National Park, Azad Jammur and Kashmir. *Asian Pacific Journal of Tropical Medicine*, 5(3): 234-241.
- Butt, M. S., Naz, A., Sultan, M. T. and Qayyam, M. M. (2013). Anti – oncogenic perspectives of spices / herbs: a comprehensive revies. *EXCL Journal*, 12: 1043 -1065.
- Emaziye, P.O., Okoh, R.N. and Ike, P.C. (2012). A critical analysis of climate change factors and its projected future values in Delta State, Nigeria. *Asian Journal of Agriculture and Rural Development*, 2(2): 206-212.
- Essiett, U.A. and Akpan, E.M. (2013). Proximate composition and phytochemical constituents of *Aspilia africana* (Pers.) C.D. Adams and *Tithonia diversifolia* (Hemsl.)A. Gray Stems

- (Asteraceae). *Bulletin of Environment, Pharmacology and Life Sciences*, 2(4): 33-37.
8. Falodun, A. and Imieje, V. (2013). Herbal medicine in Nigeria: *holistic overview Nigerian Journal of Science and Environment*, 12(1): 1-13.
  9. Gottardi, D., Bukvicki, D., Prasad, S. and Tyagi, A. K. (2016). Beneficial effects of spices in food production and safety. *Frontiers in Microbiology*, 7: 1-16.
  10. Koushalya, N.S. (2012). Traditional knowledge on ethnobotanical uses of plant biodiversity: a detailed study from the Indian Western Himalaya. *Biodiversity Research and Conservation*, 28: 63-77.
  11. Mubashir, H.M., Bahar, A., Showkat, R.M., Bilal, A.Z. and Nahida, T. (2011). *Portulaca oleraea* L: a review. *Journal of Pharmacy Research*, 4(9): 3044-3048.
  12. Obichi, E.A., Monago, C.C. and Belonwu, D.C. (2015). Nutritional qualities and phytochemical compositions of *Solenostemon monostachyus* (Family Lamiaceae). *Journal of Environment and Earth Science*, 5(3): 105-113.
  13. Okereke, C.I. and Amgbara, D. (2010). Staff welfare and productivity in Patani Local Government Council, Delta State, Nigeria. *Journal of Economics and International Finance*, 2(12): 313-320.
  14. Parvaiz, M. (2014). Ethnobotanical studies on plant resources of Mangowal, District Gujrat, Punjab, Pakistan. *Avienna Journal of Phytomedicine*, 4(5): 364-370.
  15. Sharma, M. and Kumar, A. (2013). Ethnobotanical uses of medicinal plants: a review. *International Journal of Life Sciences and Pharmacological Research*, 3(2): 52-57.
  16. Singab, A. N. (2015). Medicinal importance at herbs and spices. Research Gate. *Medicinal and Aromatic Plants*, 4(4): 1-2.
  17. Verma, S., Sharma, H. and Garg, M. (2014). *Phyllanthus amarus*: a review. *Journal of Pharmacognosy and Phytochemistry*, 3(2): 18-22.