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Checklist and Conservation of Botanicals Used for Natality by the Okpe-Speaking People of Delta State, Nigeria

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Abstract: A combination of social survey and direct field observation was used to identify and determine the conservation status of botanicals used by the indigenous okpe-speaking people of Delta State, Nigeria during natality periods. While a total of 11 botanicals belonging to 11 different families were found to be widely utilized during the pre-natal periods, another 10 botanicals, belonging to 10 different families were widely utilized during the post-natal periods. Only 7 of these botanicals were cultivated. Among the uncultivated botanicals, only 4 were regularly preserved in the study area. Over 40% of the botanicals were sourced from the forest and some of the botanicals were harvested by annihilative extraction methods. Over 40% of the botanicals were presently rare on the abundance scale. Sustainable strategies that could enhance the conservation of these species were proposed.

Key words: Conservation, botanicals, indigenous people, Nigeria

INTRODUCTION

The Okpe-speaking people are located in the mangrove swamp forest of the Niger Delta area of Nigeria that is widely reputed to be the third largest mangrove in the world (Moffat and Linden, 1995). Over 70% of the inhabitants of the area live in rural communities that are characterized by a myriad of problems which according to WB (1990) include lack of development, stagnant agricultural productivity, negligible opportunities in the urban areas, rapid population growth and tenuous property rights. In addition, a heavy influx of farmers into the delta from already degraded upland areas and immigrants attracted by oil development had been reported NDWC (1995) thus increased population expansion in the area. The current average population density in the region was estimated at 1.38 person ha⁻¹ (WB, 1990). All these provide evidence that land degradation and deforestation are being experienced in the region.

In Nigeria and Okpe-speaking area in particular, the use of botanicals in child deliveries dates back to the early centuries when all that was known and revered in the preventive and curative health delivery was local herbs. The practice blossomed in the areas of child bearing and related matters. In Okpe-speaking region, the urheres that is, traditional birth attendants were virtually entrusted with pre-natal and post-natal matters. The ethno botanical knowledge of the urheres which is still widely utilized especially in the rural communities are passed from one generation to another.

However, with the rapid and gross reductions in the number of the urheres coupled with the apparent lack of documentation on these species, the need for conservation of the botanicals used for natality in the study area cannot be over-emphasized. This constitutes the basis for this study.

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MATERIALS AND METHODS

A combination of social surveys and direct field observation (Lipp, 1989; Kayode, 2002, 2005) was used in this study. Ten aboriginal rural communities namely: Adaka, Ugborhen, Okegborode, Okpakomeje, Oku, Ituru, Ibuwor, Okuadede, Egbeku and Ogegere, all located within Sapele Local Government Area of Delta State were used in this study. In each community 10 pregnant women, 10 nursing mothers, 10 married males and 2 urheres who had maintained continuous domicile in the communities for over 10 years were interviewed with the aid of a semi-structured matrix (Case, 1990). The interviews were conducted with a fairly open framework that allowed for focused, conversational, two-way communication.

Vouchers specimens of botanical identified as been used during natality were collected and scientifically identified. Information on the parts of the plants used and the sources where they were collected were documented. The relative abundance of the botanicals within a 500 m radius from each community were recorded and defined (Kayode, 2003) as: less than 5 individuals as rare, 5 to 10 individuals as occasional, 11-30 as frequent, 31-100 individuals as abundant and over 100 individuals as very abundant. The chemical constituents of the botanicals were obtained from literature (Odebiyi and Sofowora, 1979; Okogun, 1986; Gill, 1992; Kayode and Ogunleye, 2007).

Secondary information was obtained from the officials of the maternity centre in the study area, Health Department of the Sapele Local Government and Ministry of health, Asaba, Delta State.

RESULTS AND DISCUSSION

The study revealed that there was a general acceptability of the use of herbs in the study area. The use of herbs was considered as part of the culture of the inhabitants. Herbs were also perceived to be readily available and complimentary to the economic reality of the respondents' environment. Eleven botanicals belonging to 11 different families were found to be widely utilized during the pre-natal periods while another 10 botanicals belonging to 10 different families (Table 1) were being utilized

Table 1: Pre-and post natal botanicals used by the Okpe-speaking people of Delta State, Nigeria

Botanicals	Local okpe name	Family	Part used
Pre-natal			
<i>Abelmoschus esculentus</i> (L.) Moench	Ishawo	Malvaceae	Flower
<i>Ageratum conyzoides</i> L.	Ebe-Ikpamaku	Asteraceae	Leaves and flower
<i>Anthocleista djalensis</i> A. Chev.	Ebe-ukhudu	Longaniaceae	Leaves
<i>Anthocleista djalensis</i> A. Chev.	Ebe-ukhudu	Longaniaceae	Leaves
<i>Baphia nitida</i> Lodd.	Ohwo	Papilionaceae	Leaves
<i>Buchholzia coriacea</i> Engl.	Ebe-omiowwo	Capparaceae	Bark
<i>Cissampelos owariensis</i> P. Beauv. Ex DC.	Ebe-iten	Menispermaceae	Roots and stem
<i>Corchorus olitorius</i> L.	Ebe-oyoyo	Tiliaceae	
<i>Ficus exasperata</i> Vahl.	Ebe-ameme	Moraceae	Leaves
<i>Jatropha curcas</i> L.	Ebe-ishakpa	Euphorbiaceae	Leaves
<i>Musa sapientum</i> L.	Ivwo-ode	Musaceae	Sucker
<i>Piper guineense</i> Schumach and Thonn.	Urierie	Piperaceae	Fruits and leaves
Post-natal			
<i>Aframonium melegueta</i> K. Schum	Erhie	Ziniberaceae	Leaves
<i>Bryophyllum pinnatum</i> (Lam) Oken	Ebe-okpokpan	Crassulaceae	Seeds
<i>Costus afer</i> Ker Gawl.	Ebe-erwe	Costaceae	Leaves
<i>Irvingia gabonensis</i> (Aubry-Lecomte ex O'Rorke) Baill.	Ohwe	Irvingiaceae	Bark
<i>Monodora myristica</i> (Gaertn.) Dunal	Eworhe	Annonaceae	Seeds
<i>Ocimum gratissimum</i> L.	Eran	Lamiaceae	Leaves
<i>Psidium guajava</i> L.	Ebe-ijuava	Myrtaceae	Leaves
<i>Rauwolfia vomitoria</i> Afzel	Ebe-akata	Apocynaceae	Leaves
<i>Sansevieria liberica</i> Gerome and Labroy	Erevwen-ijenekpo	Dracaenaceae	Leaves
<i>Tetrapleura tetrapleura</i> (Schumach and Thonn) Taub	Ovreme	Mimosaceae	Pods

for post-natal healthcare management. The natural constituents of these species are enumerated in Table 2. Table 3 shows the conservation status of the natality botanicals. Only 7 species, which constitutes 33% of the botanicals were cultivated, 5 of these (57% of the cultivated species) were cultivated for food and income while 3 species were cultivated as ornamentals and hedgerow. Of the remaining 67% that were uncultivated, 4 species (constituting 29% of the uncultivated species) have their wildings regularly preserved by residents of the study area, while only 1 (*Ageratum conyzoides* L., constituting 5% of the uncultivated species) grow as weeds in the area. The field observation revealed that of the cultivated species, cultivation of *Bryophyllum pinatum* (Lam.) Oken is of recent development and it is being cultivated as ornamental plant.

Ten natality botanicals (48%), were mostly sourced from household areas and farms, 5 botanicals (11%) were sourced from free and wastelands while 9 botanicals (43%) were usually sourced from the forest. Annihilative methods of extraction were employed on 8 species (38%) but the effects of these methods were minimal on *A. esculentus* (L.) Moench, which is widely cultivated in the study area.

The relative abundance test revealed that 10 (48%), 3(14), 3(14%), 2(10%) and 3(3%) of the natality species were rare, occasional, frequent, abundant and very abundant in the relative abundance scale respectively (Table 3).

The results obtained from this study tend to suggest the need for the prevention of biodiversity loss in the study area. WB (1995) had earlier asserted that the biological diversity of the Niger Delta region, being the most extensive and complex lowland, forest/aquatic ecosystem in West Africa, is of

Table 2: Folk use and natural constituents of botanicals used by the Okpe-speaking people of Delta State, Nigeria

Species	Folk use	Chemical properties
<i>A. esculentus</i>	Halting dizziness during pregnancy	Essential oils
<i>A. conyzoides</i>	Enhance proper growth of foetus	Flavonoid-conyzorigun, limonene, 5'-methoxynobiletin, Cardinol-pinene, cardinene, oxygenated sesquiterpenoides, saponin, tannins.
<i>A. djalonensis</i>	Relieve hot bowel, curing of rashes	Alkaloides, inulins, saponnins, glycoside-loganin
<i>A. melegueta</i>	Prevention of child from Spiritual attack, small-pox and chicken-pox	Essential oil-paradol, resins, tannins
<i>B. coriacea</i>	Womb maintenance	Dipterpenes
<i>B. nitida</i>	Prevention of miscarriage	Iso-santalene, homopterocarpine, saponins, tannins
<i>B. pimatum</i>	Healing of navel	Ascorbic and organic acids, potassium mallate, inulin
<i>C. afer</i>	Quick reconditioning of body after birth	Essential oil, diosgenin, lanosterol B-sitosterol, stigmasterol, tigogenin, costugenin
<i>C. owariensis</i>	Prevention of bowel disorder	Alkaloids-chondidendrine, deyamitine, berberine
<i>C. olitorius</i>	Enhancing easy delivery, lessen pain, Shorten labour period, prevent worms in babies	Glucoside, corchoroside A and B
<i>F. exasperate</i>	Ease abdominal during pregnancy	Tannins
<i>I. gabonensis</i>	Prevention and cure of spleen infections	Alkaloids
<i>J. curcas</i>	Prevention of constant vomiting during pregnancy, promotion of teething in babies	Tetramethylpyrazine, fixed oils, resin, curcin, saponins, tannins, inulin
<i>M. myristica</i>	Relief headache	Alkaloid-annonaceine
<i>M. sapientum</i>	Strengthening of foetus	Inulin, tannins, Alkaloid-5 hydroxy-tryptamine
<i>O. gratissimum</i>	Prevention of convulsion and miscarriage, prevention of body weakness	Terpenoids-eugenol, thymol, saponnins, alkaloid
<i>P. guajava</i>	Quick release of placenta	Tannins, resin, essential oil, quercetin, eugenol
<i>P. guineense</i>	Prevention of miscarriage, relief from headache	Alkaloids- chavicine, piperine, guineensine, wisanine, inulin, tannins, resin
<i>R. vomitoria</i>	Prevention of nerve diseases in babies, Cure jaundice and fever, reduction of labour pains	Alkaloids-rauwolfine, reserpine, rescinnamine, serpentine, ajmaline, serpentinine, steroid-serposterol and saponin
<i>S. liberica</i>	Prevention of liver problems, relief from abdominal pains	Alkaloids, saponin
<i>T. tetraptera</i>	Cure of sexual infections	Saponins, essential oil, scopoletin

Table 3: Conservation status of natality botanicals used by the Okpe-speaking people of Delta State, Nigeria

Conservation indices	Description		
Cultivation status	Cultivated species		
	(i) No. of cultivated species	7	
	% to the total number of natality species	33%	
	(ii) No. of species cultivated for food and income	4	
	% to the total number of cultivated species	57%	
	List of the botanicals: <i>A. esculentus</i> , <i>M. sapientum</i> , <i>P. guineensis</i>		
	(iii) No. of species cultivated for ornamentals and hedgerow	3	
	% to the total number of cultivated species	43%	
	List of the botanicals: <i>B. pinnatum</i> , <i>J. curcas</i> , <i>S. liberica</i>		
	Uncultivated species		
	(i) No. of species uncultivated but preserved species	4	
	% to the total number of uncultivated species	29%	
	List of the botanicals: <i>A. melegueta</i> , <i>F. exasperata</i> , <i>I. gabonensis</i> , <i>O. gratissimum</i>		
	(ii) No. of species uncultivated but weed species	1	
% to the total number of uncultivated species	5%		
List of the botanicals: <i>A. conyzoides</i>			
Source	(i) No. of species sourced from household areas and farms	10	
	% to the total number of natality species	48%	
	List of the botanicals: <i>A. esculentus</i> , <i>A. melegueta</i> , <i>B. pinnatum</i> , <i>I. gabonensis</i> , <i>J. curcas</i> , <i>M. sapientum</i> , <i>O. gratissimum</i> , <i>P. guajava</i> , <i>P. guineensis</i> , <i>S. liberica</i>		
	(ii) No. of species sourced from free and waste areas	5	
	% to the total number of natality species	11%	
	List of the botanicals: <i>A. conyzoides</i> , <i>B. pinnatum</i> , <i>J. curcas</i> , <i>O. gratissimum</i> , <i>S. liberica</i>		
	(iii) No. of species sourced from the forest	9	
	% to the total number of natality species	43%	
	List of the botanicals: <i>A. melegueta</i> , <i>B. coriacea</i> , <i>C. afer</i> , <i>C. oclitorius</i> , <i>C. owariensis</i> , <i>F. exasperata</i> , <i>I. gabonensis</i> , <i>R. vomitoria</i> , <i>T. tetraptera</i>		
	Extractive methods	(i) No. of species harvested by annihilative methods	8
		% to the total number of natality species	38%
		List of the botanicals: <i>A. esculentus</i> , <i>A. melegueta</i> , <i>B. coriacea</i> , <i>C. owariensis</i> , <i>I. gabonensis</i> , <i>M. melegueta</i> , <i>M. myristica</i> , <i>M. sapientum</i>	
(ii) No. of species harvested by non-annihilative methods		13	
% to the total number of natality species	62%		
List of the botanicals: <i>A. djalonensis</i> , <i>A. conyzoides</i> , <i>B. nitida</i> , <i>B. pinnatum</i> , <i>C. afer</i> , <i>C. oclitorius</i> , <i>F. exasperata</i> , <i>J. curcas</i> , <i>O. gratissimum</i> , <i>P. guajava</i> , <i>P. guineensis</i> , <i>R. vomitoria</i> , <i>S. liberica</i>			
Relative abundance	(i) No. of rare natality species	10	
	% to the total number of natality species	48%	
	List of the botanicals: <i>A. djalonensis</i> , <i>A. melegueta</i> , <i>B. coriacea</i> , <i>B. nitida</i> , <i>C. afer</i> , <i>C. oclitorius</i> , <i>C. owariensis</i> , <i>M. myristica</i> , <i>R. vomitoria</i> , <i>T. tetraptera</i>		
	(ii) No. of natality species occurring occasionally	3	
	% to the total number of natality species	14%	
	List of the botanicals: <i>F. exasperata</i> , <i>I. gabonensis</i> , <i>S. liberica</i>		
	(iii) No. of natality species occurring frequently	3	
	% to the total number of natality species	14%	
	List of the botanicals: <i>B. pinnatum</i> , <i>J. curcas</i> , <i>P. guajava</i>		
	(iv) No. of natality species occurring abundantly	2	
% to the total number of natality species	10%		
List of the botanicals: <i>A. conyzoides</i> , <i>O. gratissimum</i>			
(v) No. of natality species occurring very abundantly	3		
% to the total number of natality species	14%		
List of the botanicals: <i>A. esculentus</i> , <i>M. sapientum</i> , <i>P. guineensis</i>			

regional and global importance. Field observation revealed that the study area is under great pressure from logging, agriculture, plantation development infrastructural expansion, extensive canalization, roads, seismic line construction as well as pollution. The oil pollutants results in clogging of the roots and this often suffocate the trees. Previous assertion revealed that the concentration of dissolved petroleum hydrocarbons in wastewater in Niger Delta was 53.9 mg L⁻¹. Sources of these

hydrocarbons, according to Moffat and Linden (1995), often include oil released in connection with accidental spills and oil released either at installations in the delta or at the coaster terminals.

Oates *et al.* (1992) had revealed that many native flora and fauna species in the study are now extinct. Consequently, the important of the natality botanicals in the region cannot be over-emphasized; efforts should now be intensified to conserve them. This study has revealed that over 40% of the natality botanicals in the study areas are sourced from the forest and annihilation extractions are carried out in nearly half of these species. The extraction is carried out indiscriminately. Previous studies by Cunningham (1988) and Johns (1988) had revealed that annihilation of extraction often results in the death of plants. It could be suggested that the annihilation extraction being utilized in the study area could be responsible for the scarcity of the natality species, thus confirming the previous assertion by Fasola and Egunyomi (2002) that annihilation extraction often results in increasing scarcity of the species and might leads to disappearance and even extinction. Even where extraction is non-annihilative, Peters (1996) had observed that harvesting may kill a large number of mature plants, may lower tree vigour to the point that flowering and fruiting are affected and may even lead to reduction in yield.

In conclusion, it might be desirable to determine the relative regrowth capacities of most botanicals in the study area, establish botanicals gardens where most of these species would be domesticated and enlighten the populace (in the study area) of the dangers inherent in biodiversity loss.

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