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THE USE OF INDIGINOUS MEDICINAL PLANTS FOR TREATMENT OF INFERTILITY AND IMPOTENCE IN MAN

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ABSTRACT: Herbal medicine sometimes referred to as Herbalism or Botanical medicine is the use of herbs for their therapeutic or medicinal value. Herbs produce and contain a variety of chemicals that act on the body. The state of maternal health in Nigeria is poor and can be attributed to inadequate access to reproductive health service, poverty and in some areas cultural resistance. Consequently, many rural dwellers in Nigeria turn to ethno-botany (medicinal) health care system, due to the accessibility, affordability, availability and inherent trust in this method. Therefore a survey of some common medicinal plants used in the treatment of infertility and impotence in men was carried out in Ughelli South Local Government Area of Delta State, Nigeria. The medicinal plants commonly used belong to the families; Asteraceae, Nyctaginaceae, Caricaceae, Leguminosae, Capparidaceae, Boraginaceae, Cucurbitaceae, Bignoniaceae and *Portulacaceae*. Their mode of preparation, regimen/dosage, medicinal value and botany of the plant is of utmost importance, the regimen/dosage differ in respect to several factors. The effectiveness of the locally prepared herbal medicine was confirmed from 20 women and 16 men that were treated with these medicines. At the end of the study, it was observed that more plants were useful as anti-infertility herbs than herbs for treatment of impotence in man.

INTRODUCTION

Mankind has been dependent on plant for food, drink, shelter, clothing, dental care and most essentially general medicine. It has transcended all social, economic religious and other barriers created by man. Infertility is the inability of a couple to achieve pregnancy, (Guyton and Hall 2000), or the inability to get pregnant after a year of unprotected sex. Infertility in a woman can be caused by a variety of medical conditions such as, failure to ovulate, hormonal imbalances that leave the uterine lining unprepared for implantation of embryo, abnormalities of the uterus, scar tissue from infections in the fallopian tubes or on the ovaries or the uterus, inadequate cervical mucus, production of anti-sperm antibodies, or habitual miscarriage, inhibits conception and implantation in female (Guyton and Hal 2000). Impotence is the inability to attain or sustain erection for a satisfactory sexual intercourse. A number of clinical conditions and diseases can be responsible for male infections. Sexually transmitted disease, testicular injury, environmental toxins, drugs, alcohol, tobacco, hormonal imbalance, vasectomy, testicular obstruction, spinal cord lesions, genetic, cystic fibrosis and general sexual dysfunction. It is possible for an impotent man to be fertile. Artificial insemination can be successful by using the sperm of an impotent male. This usually results from the male's semen being infertile or sub-fertile. Most infertile men are perfectly normal in terms of potency and have very satisfactory sexual relations.

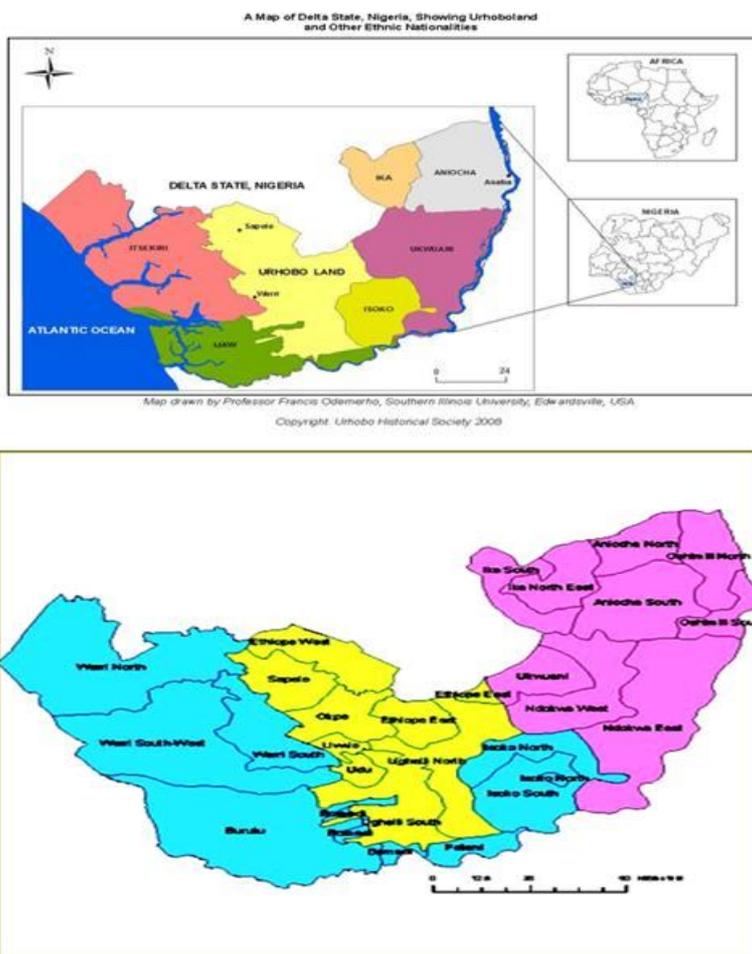
Generally, plants which correct infertility in human are in existence, but they cannot be said to have ubiquitous medical action in all their parts, rather medicinal value is confined to specific

parts, such as the root, stem, seed, fruit and leaves. These medicinal plants could be used individually or in combination with other plants to produce their medicinal remedy.

A large proportion of Nigerians in the rural areas at some stage in their life turn to traditional or ethno-medicinal and alternative health care systems due to the accessibility and trust in this method. Recent health status data show that in 2000, Nigeria's maternal mortality ratio per 100,000 live births ranged from 800 – 1100 (WHO, 2007; UNDP, 2008) as compared to low ratios for other countries with developing economies, 56 for China, 84 for Egypt and 83 for Mexico (WHO, 2007). This trend of high maternal mortality is not new, as past records show that towards the end of the twentieth century, Nigeria alone accounted for 10% of global maternal deaths (CGSPS, 2002) due to direct causes as bleeding in pregnancy, eclampsia, infection and anaemia in pregnancy. These figures are not unusual when considered with other information that demonstrate low quantity, quality and utilization that characterizes female reproductive health care in Nigeria (Obilade and Mejuini, 2005).

METHODOLOGY

Through the administration of a structured questionnaire and oral interviews, information was obtained from professional herbalists, local midwives, pregnant and post-partum women and knowledgeable old women within the age range of 59-74years in the local government area. The questionnaire contained questions relating to plants used for gynecological conditions that occur before and after natal periods carried out by accompanying the practitioners during plant collections. Digital pictures of plant samples were taken in the field and samples were collected.



The plant specimen and species type were obtained in Ewu, Effurun-otor and Olomu, in Ughelli-South Local Govt Area of Delta State.

RESULTS

IDENTIFICATION, CLASSIFICATION, MEDICINAL USE, PREPARATION AND MODE OF ADMINISTRATION

Figure1. *Ageratum conyzoides*

Family: Asteraceae

Genus: *Ageratum*

Species: *conyzoides* (*Ageratum conyzoides*)

Common name: goat weed

Local name: “Ebe”

Part used: Leave

Medicinal value: valued in cleaning out the womb.

It is also to treat cold and fevers and for painful menstruation.

Preparation: infusion of a handful of the leaves in a cup of water.

Dosage: taken at once at interval of two weeks.



BOTANY OF THE PLANT

Habitat: It is an ephemeral weed of roadsides, farms, near unweeded house.

Description: An erect, softly hairy aromatic annual herb, up to 20cm high that reproduces from seeds. The stem is weak, branched and softy hairy. The leaves are opposite, ovate, up to 8cm long and 5cm wide with acute apex and serrated margins. They are softy hairy and have petioles up to 5cm long.

Figure 2. *Borrhaavia diffusa*

Family: Nyctaginaceae

genus: *Boerhaavia*

Species: *diffusa*

Common name: Hog weed, pig weed

Local name: “Egborogeyoyo”

Part used: Leaves

Medicinal value: it enhances fertility in women

Preparation: leaves used as ingredient for soup.

Dosage: to be taken as often as possible.



BOTANY OF THE PLANT

Habitat: it is a common weed of roadsides, waste areas, farms, and near houses at Olumu and other part of Ughelli South LGA of Delta State.

Description: a hairless semi-prostrate perennial herb up to 60cm high, with a thick, fleshy , root- stock and that reproduces from seeds. The stem is slender, jointed, more or less fleshy and woody below. It is greenish or sometimes purplish, low branching, glabrous and not sticky from glandular hairs. The leaves are opposite, long and 2-4cm wide with petioles 1-3cm, blunt tipped, entire and smooth. The inflorescence is a many branched elongated cyme formed in the leaf axils and at the terminals of the stems. The flowers are deep purple or crimson about 2-5 flower in a capitulum. The fruit is a one seeded sticky capsule with 5 ribs and about 3mm long.

Figure 3. *Carica papaya*

Family: *Caricaceae*

Genus: *Carica*

Species: *papaya*

Common name: Paw-paw

Local name: "Eto"

Part used; Unripe fruit and root.

Medicinal value: unripe fruit, roots sterility in women and the roots promotes fertility in males.

Preparation: Half a green paw-paw fruit (i.e. unripe fruit) is boiled in water to make a strong decoction salt is added. The root is also used to make strong decoction.

Dosage: Decoction from the unripe fruit is taken frequently i.e. as often as possible while the root decoction is taken, a glassful once daily for a period of six months.



BOTANY OF THE PLANT

Habitat: it is found in waste areas, and among plantations like plantain plantation.

Description: A shrub or small trees about 5cm high with terminal clusters of leaves and milky juice. Flowers are unisexual large being with fleshy seeds. The stem is erect, rounded, rarely, simple, palmately lobed, large with long petiole which is hollow.

Figure 4. *Cassia occidentalis*

Family: *Leguminosae* (caesalpinaceae)

Genus: *Cassia*

Species: *occidentalis*

Common name: Coffee senna

Local name: "Ighie"

Part used: Root

Medicinal value: it is used for cleaning out the womb.

Preparation : A few handful of the root to one litre of water

Dosage: one tea cupful, three times daily for as long as possible.

Caution : Root decoction and infusion are abortifacients and purgative.



BOTANY OF THE PLANT

Habitat: it is a common plant of crop field, found in back of houses, roadsides.

Description: An erect, hairless under shrub, annual or biennial, growing to about 100cm high and reproduces from seeds.

The stem is ribbed, woody below and loosely branching. The leaflets are 4-6 pairs, broadly-lanceolate, 2.5-7.5cm long and 1-2cm wide, the upper pair of leaflets is always larger. The inflorescence is an axillary raceme with yellow flowers. The fruit is flat. Slightly curved and green in colour. The pods are smooth 15cm long and 6mm wide with 20-30 brown, ovate seeds that are about 3mm across.

Figure 5: *Cleome rutidosperma*

Family: *Capparaceae* (cleomaceae)

Genus: *Cleome*

Species: *rutidosperma*

Common name: Wild mustard

Local name: "Eta-eto"

Part used: leaves



Medicinal value: Used together with fruits of pepper (*capsicum annum*) for treatment of impotence in man.

Preparation : Leaves ground together with 3 fruit of pepper, washed into a pot, boiled and filtered

Dosage: a glassful to be taken 3 times daily for or period 1 month.

Caution: it is believed that the head of mud fish and a six inch nail is used in the boiling process, this is said to be a wish of their ancestors for complete treatment.

BOTANY OF THE PLANT

Habitat: It is widespread in Ughelli South LGA, growing in fields roadside and waste area, in many parts of the community.

Description: it is an erect, annual herb up to 90cm high that reproduces from seeds. The stem is cylindrical, soft wooded, greenish with fairly coarse hairs. The leaves are compound Trifoliate with petiole up to 5cm long. The leaflets are ovate to ovate-lanceolate, 1-4cm long and pubescent. The central leaflet is always the largest. the inflorescence is leafy, auxillary raceme with solitary flowers are pale lilac, white or pinkish in colour. The fruit is a long, 2.5-6cm long and 3-4mm wide cylindrical. Stipulate capsule usually found of the inflorescence.

Figure 6: *Heliotropium indicum*

Family: *Boraginaceae*

Genus: *Heliotropium*

Species: *indicum*

Common name: India heliotrope

Local name: "Ukpugulu"

Part used: whole plant

Medicinal value: it prevent abortion (miscarriage)

Preparation : Infusion of the plant with a little proportion of edible clay.

Dosage: taken at one's.



BOTANY OF THE PLANT

Habitat: A common weed of most soil in cultivated fields and waste land.

Description: It is an erect, many branched, hairy annual herb, up to 90cm high, that reproduces from seeds. The stem is robust, semi-woody and covered with dense soft hairs. The leaves are simple, alternate, broadly ovate, 4-12cm long and 2-5mm wide. The leaf blade is hairy and somewhat blistered. Acute, wedge-spread at the base irregularly toothed and sometimes entire in the margins. The petiole is winged. The inflorescence is a long slender spike up to 20cm long. Curved towards the tip and bearing small pale. Bluish white flowers that are crowded on one side of the spike and at the tip.

Figure7: *Mormodica charantia*

Family: *Cucurbitaceae*

Genus: *Mormodica*

Species: *charantia*

Common name: Balsam pear, bitter melon.

Local name: "Ugbodume"

Part used: Leaves and fruits

Medicinal value: it enhances fertility in women

Preparation: leaves and fruits are squeezed in water to produce the extract. Leaves are also used as ingredient for soup



Dosage; extracts to be taken a glassful daily for a period of three months, soup eaten as often as possible.

BOTANY OF THE PLANT

Habitat: A used growing in farms, bush regrowths and waste areas in Ughelli South Local Government Area.

Description: It is a prostrate hairy perennial herb with long, simple hairy, climbing by means of tendrils and reproduces from seeds. The stem is angel, more or less hollow and with minute hairs. The leaves are alternate, more or less are alternate, up to 5cm long with a spiral tendril at opposite sides. They are unevenly lobed and the lobe are more or less notched. The petioles are 4-5cm

Long, short and pubescent and produces an offensive smell when crushed. The inflorescence consists of solitary flowers in the leaf axis. The flower is subtended by a conspicuous bract on the peduncle. The corolla is bright yellow and measures about 2.5cm across. The fruit is a warty gourd usually with longitudinal furrows, orange-yellow when ripe, up to 15cm long, splitting to expose the seeds that are about 2mm across.

Figure 8: *Newbouldia leavis*

Family: *Bignoniaceae*

Genus: *Newbouldia*

Species: *leavis*

Common name: fertility plant, Africa border tree, Akoko tree.

Local name: ogrish

Part used: Leaves

Medicinal value: treatment for various infertility problem

Preparation : squeeze the leaves in water as in bitter leaf.

Dosage: Take a glassful, 2 times daily for as long as possible.



BOTANY OF THE PLANT

Habitat: This plant is common in dry secondary forest.

Description: a fast-growing hairless perennial normally a small tree that grows up to 15cm high, but commonly bushy and shrubby around settlement and secondary forests. It reproduces from seeds and vegetatively from basal portions of cut stems. The stem is woody, usually low branching, irregularly twisted, smooth and with knobby twigs. The leaves are compound, pinnate, opposite or occasionally whorled and are about 50cm long. The inflorescence is a dense, terminal racemose-panicle with reddish-pink or purple tubular flowers about 5-6cm long, often attractive to ants. The fruit is a long pendulous, dehiscent capsule about 30cm long, dotted with glands that tend to attract ants. The seeds are flat and winged, there are 3-6 pairs of leaflets, each leaflet is oblanceolate, long-acuminate, sessile or with short petiole. The leaf blade is papery, smooth with prominent veins. Each pinnate leaf is borne on a petiole that is about 8cm long.

Figure 9: *Portulaca oleracea*

Family: *Portulacaceae*

Genus: *Portulaca*

Species: *oleracea*

Common name: common purslane, garden purslane, pig weed.

Local name: “userve”

Part used: leaves and stems

Medicinal value: it enhances fertility in women



Preparation : The leaves and stem are used to prepare potage.

Dosage: to be taken as often as possible.

BOTANY OF THE PLANT

Habitat: A cosmopolitan weed of cultivation field and waste area.

Description: A semi-prostrate, non hairy annual herb that has succulent, free branching stems arising from a deep tap root. It reproduces from seeds; the stem is thick and fleshy, round and laborous. The leaves are thick and succulent, alternate, sub-opposite or whorled. The blades are oblanceolate, 2-3cm long and 1-2cm, wide, rounded at the apex, wedge shaped at the base, sessile and smooth on both surfaces. The inflorescence consists of solitary flowers, sometimes in groups of in group of 2-5 at the terminal of the stem's leaf axils. The flowers are yellow and about 10mm wide. The fruit are small capsules about 6-8mm long and 3-5mm wide which split by terminal caps to release very many minute warty black seeds.

The plant species were identified using Tolu (2006).

Table 1: Summary of the plants studied along with their local names and medicinal use

Botanical names of plant	Family	Local name	Part used	Common name	Medicinal value
<i>Ageratum conyzoides</i>	<i>Asteraceae</i>	“Ebe”	Leave	Goat weed	Cleaning out of womb, cold, fever and menstruation.
<i>Boerhaavia diffusa</i>	<i>Nyctaginaceae</i>	“Egboregeyoyo”	Leave	Hog weed,	Fertility enhancement
<i>Carica papaya</i>	<i>Caricaceae</i>	“Eto”	Unripe fruit, root	Paw-paw	Prevent sterility in women, promotes fertility in men
<i>Cassia occidentalis</i>	<i>Caesalpinaceae</i>	“Ighien”	Roots	Coffee senna	For cleaning out the womb
<i>Cleome rutidosperma</i>	<i>Cleomaceae</i>	“Eka-eta”	Leaves	Wild mustard	Impotence
<i>Heliotropium indicum</i>	<i>Boraginaceae</i>	“Ukpugulu”	Whole plant	Cock’s comb	Premature abortion
<i>Mormodica charanta</i>	<i>Cucurbitaceae</i>	“ugbodume”	Leaves and fruit	Balsam pear, African cucumber, bitter melon	Fertility enhancement
<i>Newbouldia laevis</i>	<i>Bignoniaceae</i>	“Ogrish”	Leaves	Fertility plant, African border, Akoko tree	Infertility
<i>Portulaca oleracea</i>	<i>Portulacaceae</i>	“Userue”	Leaves and stem	Common purslane	Fertility treatment for both male and female.

DISCUSSION

This study has revealed that infertility is truly endemic to the tropics as almost all the plants and treatment modes were related to the management of infertility than impotence. Apart from infertility and impotence alone, most of these plants have been observed to be useful in

management of other ailments such as painful menstruation, diabetes, convulsion, fever, stomach ulcer, piles etc for example, *Ageratum conyzoides*; apart from cleaning of the womb it is also useful in fever and painful menstruation. *Carica papaya*; according to the traditional healer, it is used for other ailments such as diabetes, convulsion, stomach ulcer and piles. *Boerhaavia diffusa*; is used together with *Aframomum melegueta* (Alligator pepper) to manage menstrual pains. *Cleome rutidosperma* is also used together with *Capsicum annum*, to manage womb inflammation.

The effectiveness of the locally prepared herbal medicine was confirmed from 20 women and 16 men that were treated with these medicines.

CONCLUSION

This research work has shown that medicinal plants are indeed important. They have been effective for many childless couples, it is efficacious in curing human disorders, especially infertility and impotency. The plants that have been identified and described earlier will therefore help to manage infertility and impotency. The ailment to be treated and the medicinal preparation involved should be put into cognizance. The dosage and administration is of high importance patience is a special tool for effective cure with medicinal plant. The issue of childless couple is a big challenge. Traditional gynecology and herbal remedy is a special area that should be taken seriously. I strongly recommend ethno-botanist and medical doctors to support traditional healers because these group of persons involved are of age and there should be room for continuity so as to find solution to problems of the people. In conclusion, this work has given a huge scientific support to the use of plants as medicine.

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