



# **Ethnotherapeutic Profile of Medicinal Plants Used during Postnatal Recovery (Postpartum) in South Eastern Nigeria: A Review**

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## **Authors' contributions**

*This work was carried out in collaboration between both authors. Author VAI designed and wrote the first draft of the manuscript while author CEC wrote the protocol and managed the literature searches. Both authors read and approved the final manuscript.*

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## **ABSTRACT**

Plant derived bioactive constituent has lead credence to usage of medicinal plants namely spices in postnatal recovery in most cultures especially in South Eastern Nigeria. Postpartum is a critical phase leading to recovery for the nursing mother and improved health condition for the new born. Most of these medicinal plants play important role and are used as diet therapy after childbirth to induce contraction of the uterus, energy induction and improve production of breast milk. A systematic and comprehensive review of these medicinal plants for holistic utilization is pertinent. Therefore, this review validates and highlights the health benefits of medicinal plants used during postpartum period in South Eastern Nigeria.

**Keywords:** *Postpartum; ethnotherapeutic; profile; recovery.*

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## 1. INTRODUCTION

In most regions of Africa, therapeutic and nutritional relevance of plants is widely posited. These plants have been greatly sought for in herbal treatment of individuals with health challenges especially in most developing countries [1]. Some of these plants serve as contraceptives were they are used to alter reproductive cycle as well as manage postnatal complications in nursing mothers in most parts of South Eastern Nigeria. In most cases of postnatal periods, medicinal plants serve as the primary bio -resource of drugs after child birth [2]. The postpartum period is a critical stage usually characterised by metabolic and hormonal imbalance in which the nursing mother is confined to aid recovery and establishment of lactation for exclusive breastfeeding [3]. Most nursing mothers experience interference in sleep, inconsistency in urine, wound as a result of tear, lack of energy, pains, constipation and upper respiratory tract infections as a result of physiological stress associated with child birth [4]. In rural parts of Nigeria, postnatal treatment with medicinal plants in conjunction with western medicine is commonly used to manage postnatal recovery to restore the woman to normalcy and improve the health status of the newborn child. According to Neelam et al. [5] these plants are believed to aid contraction of the uterus physical recovery, improve lactation, induce strength in mothers and inhibit infant vulnerability to diseases. Some of these plants used for postnatal recovery have also been reported to be therapeutically useful in management of convulsion, leprosy, stomach pain, inflammation, rheumatoid pains and loss of appetite [5]. It is also believed that new born babies grow rapidly when they are fed with food made of these spices. The bioactive constituents of these plants are also called phytochemicals which according to Liu, [6]; Ugbogu et al. [7] are bioactive, natural chemical, therapeutic compounds in plants that has lead credence to the medicinal efficacy of these plants to produce definite physiological actions in nursing mothers when used This study therefore reviews ethnotherapeutic profile of medicinal plants used during postpartum period in South Eastern Nigeria as they portend great promise in post natal recovery for nursing mothers and neonates.

### 2. *Xylopi aethiopica* (UDA)

*Xylopi aethiopica* is a tall, evergreen perennial woody aromatic tree or shrub and belong to the

family of Annonaceae. It is found in the lowland rainforest made up of the leaves, seeds, fruits, stem bark and roots. Fruits are green when mature, black with pungent, aromatic scent when dried and slightly bitter [8]. The seed is the most important part of the tree commonly called African pepper. It is usually used for preparing local diet served to newborn mothers immediately after childbirth [9]. In South East Nigeria, the seeds are used in preparation of tonic given as postpartum tonic to women that gave birth to inhibit bleeding and enhance placental discharge by traditional birth attendants [10]. The fruits are also given as condiment in soup for women after child delivery to stimulate appetite, reduces pain and helps the breast milk to flow. According to Aguoru et al. [10], the seeds have also been used to stimulate fertility in women and restore the uterus to normal condition after birth. The sauce is usually given to women after delivery to relieve pains, promote healing, cleanse and stabilize womb and to facilitate lactation. *Xylopi aethiopica* produces complex chemical compounds, making it a useful medicinal plant. Ikeyi and Omeh [11], opined that the seeds are good food spices, flavour and contains phytonutrients with biological effects such as saponin, glycoside, tannin, essential oil, flavonoids, steroids, terpenes, alkaloids, polyphenols, terpenoids and kauranes. According to Ikeyi and Omeh, [11], the fruit decoction has been shown to possess antimicrobial, antifungal, anagelsic, hypoglycemic, anthelmintic, haematopietic, immune boosting activities and increases lutenizing hormone and testosterone levels. The uda spice can also be used for inducing labour and its administration to newborn mothers helps to clear blood clots in the womb after child delivery [12]. Extracts of the fruits are used in the treatment of cough, biliousness, bronchitis, rheumatism, dysentery, malaria, uterine fibroid and amenorrhea. The fruits can also be crushed and mixed with Shea butter and used as body creams, cosmetic products or perfumes. It has also been reported to be used as a flavour in palm wine [12].

### 3. *Piper nigrum* (UZIZA)

*Piper nigrum* L is a flowering perennial woody vine, alternate leaves, small white flowers that belongs to family Piperaceae. Fruits are drupes with single seed that is red when mature and ripe, green when unripe and black when dried. It contains Essential oils, alkaloids, proteins, tannins, coumerins, phenols and has been

reported to be effective in stabilizing womb after childbirth, reduces constipation and indigestion [13]. The fruits of *P. Nigrum* are not only important as a spice or flavoring agent but have also been prescribed for cholera, dyspepsia, diarrhea, various gastric ailments and paralytic and arthritic disorders [11].

#### 4. *Tetrapleura tetraptera* (OHIOHIO)

*Tetrapleura tetraptera*, one of the indigenous fruit specie has served as food and traditional medicine in the management of human ailments [14]. *Tetrapleura tetraptera* (Mimosaceae) popularly called Ohiohioin Igbo and Aidan in Western Nigeria, Abogolo among the Igala people of north central Nigeria and Dawo among

the Hausa people of Northern Nigeria is a legume in the family *Fabaceae*. It is a tropical deciduous forest tree with characteristic distinctive four-winged fruits consisting of woody shell, a fleshy pulp and small, brownish-black seeds. The dried fruits are used in flavoring soups, particularly the traditional pepper soup, a delicacy consumed by mothers from the first day of delivery to prevent postpartum contractions, as a lactation aid [15], and for gastrointestinal disorders, especially stomach ulceration. The fruit has varied applications in Nigerian folk medicine and is used extensively for management of many array of human ailments including hypertension, inflammation, arthritis, diabetes mellitus, and epilepsy [16]. The insect repellent property of the fruits has been attributed



***Xylopia aethiopica* (Uda)**

Source: Tatsadjieu et al. [9]



***Piper nigrum* (Uziza)**

Source: Obute, [13]



***Tetrapleura tetraptera* (Ohio)**

Source: Okwu and Jossiah [16]

to their distinct fragrance due to the essential oils. The dry powdered fruit has been formulated into soap to increase the antimicrobial activity and improve the foaming and hardness of soaps [17]. An infusion of the whole fruit is usually taken by convalescents to bathe in order to get relief from feverish conditions. The fleshy pulp is known to contain sugars, tannins, traces of saponin, and amino acids [18]. The soft parts of the fruit and the bark are known to contain sugars, tannins, saponin and amino acids. The plant has many traditional medicinal uses mainly in the management of convulsion, leprosy, inflammation and rheumatic pains. Infusion of the whole fruit can be taken as a recuperative tonic [19]. Saponin an extract from the stem and bark of this plant has an inhibitory effect on luteinizing hormone released by the pituitary gland. This suggests why this plant equally serves as a contraceptive [20].

**5. *Alstonia boonei***

This is called Stool wood, Eghu in Igbo, Awun in Yoruba and Ukpo in Efik. *Alstonia boonei* De Wild is a herbal medicinal plant of West African origin, popularly known as God's tree or Onyame dua and it is considered as sacred plant in some communities in West African region. The plant parts according to Obute, [13] are rich in various bioactive compounds such as echitamidine, N-formylechitamidine, boonein, loganin, lupeol, ursolic acid, and  $\beta$ -amyrin among which the alkaloids and triterpenoids form a major portion

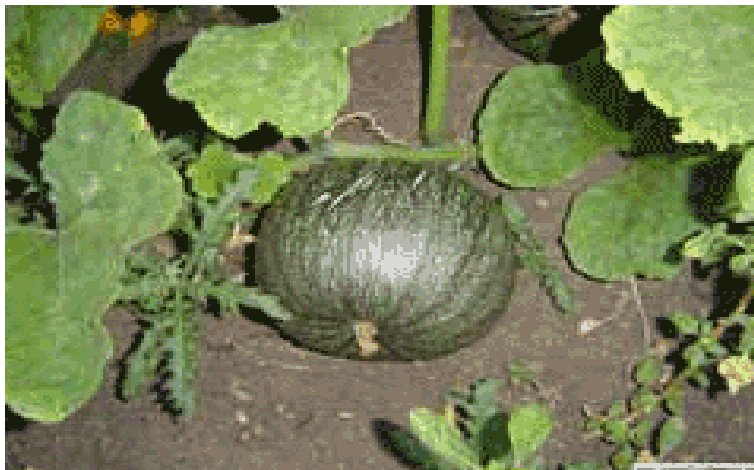
and have been traditionally used for its antimalarial, aphrodisiac, antidiabetic, antimicrobial, and antipyretic properties. Painful menstruation (dysmenorrhoea), when associated with uterine fibroid or ovarian cysts in women; lower abdominal and pelvic congestion associated with gynaecological problems such as pelvic inflammatory diseases; to relieve the painful urethritis common with gonococcus or other microbial infections in men. It is useful in expelling retained products of conception and after birth when given to women and for inducing breast milk. The root-bark is chewed frequently to induce maturity and development of breast milk [13].

**6. *Curcubita pepo***

*Curcubita pepo* is popularly called Anyu in Igbo speaking region of Nigeria. *C. pepo* is widely used as food and herbal remedies around the world to treat several diseases e.g., as an anti-inflammatory, antiviral, analgesic urinary disorders, antiulcer, antidiabetic and antioxidant [21]. *C. pepo* contains several phyto-constituents like alkaloids, flavonoids, palmitic, oleic and linoleic acids and also pharmacologically demonstrated hepatoprotection, inhibit benign prostatic hyperplasia, hypoglycemic agent, antioxidant, anticancer, antimicrobial, anti-inflammatory, anti-diabetic and antiulcer activities supporting its traditional uses [21]. Then he reported that traditionally it is used to enhance milk flow in new mothers and also reduces postpartum swelling.



***Alstonia boonei***  
Source Obute, [13]



***Curcubita pepo***  
Source: Neel et al. [21]

### **7. *Ipomoea mauritania***

*Ipomoea Mauritania* commonly called Mgba na alain Igbo and Atewogba in Yoruba. The root - stalk mixed with palm wine is given to nursing mothers to increase secretion and flow of breast milk [22].

### **8. *Uvaria chamae***

*Uvaria chamae* is popularly known as finger root or bush banana and is usually called mmimiohia in Igbo, eruju in Yoruba and belongs to the family *Annonaceae*. It is distributed in the savannah and secondary forest. The stem part of the plant is used in ethno-

medicine to prevent miscarriage and to relieve the pains after child birth [23]. The plant has been reported to be effective in treatment of malaria, inflammation, gonorrhoea, dysentery, pile and fever. The root has a purgative and febrifugal property and is used in treatment of abnormal menstrual cases [23]. The sap of the leaves, roots and stems is widely used on wounds and sores and the root -bark is taken for the treatment of dysentery, piles, epistaxis, haematuria, haematemesis and haemoptysis. A leaf infusion is used as eyewash and a leaf-decoction as a febrifuge [23]. All parts of the plant are fragrant, the roots, leaves and roots-bark have a wide spread medicinal reputation [24]. The leaf juice is applied to

wounds, sores, ulcers and cuts while the leaf infusion as a lotion is used to treat injuries and swellings. The root (pounded or pulverised) is used for the treatment of nose bleeding, heart diseases (bronchi, lungs etc.) and blood in urine, pile and fever while the fruits are aromatic popularly used in beverage industry to flavour food [24].

### 9. *Heterotis rotundifolia*

*Heterotis rotundifolia* is a species of the humid forest regions that grows on slopes and wastelands. *Heterotis rotundifolia* (Family: *Melastomatacea*) commonly known as pink lady is a versatile perennial slender creeping herb

with prostrate or ascending stems up to 40 cm height, rooting at the nodes and producing from seeds and stolons [25]. Different parts of the plant are utilized traditionally for medicinal purposes [26]. Phytochemical studies on the leaves revealed the presence of alkaloids, flavanoids, phenols, polyphenols, tannins, cyanogenic glycosides, anthocyanins, saponins, sapoginin cardiac glycosides and anthraquinone [20]. The leaves are used in the treatment of diarrhea [26]. According to Ofor [27], *Heterotis rotundifolia* has antioxidant, anti-ulcer and antibacterial potential as well as high level of retinol, cholecalciferol, tocopherol and thiamine and low in pyridoxine, niacin, riboflavin, ascorbic acid, phylloquinone and cobalamin.



***Ipomoea mauritania***  
Source: Aiyeloja and Bello [22]



***Uvaria chamae***  
Source: Omale et al. [24]



***Heterotis rotundifolia***

Source: Offor, [27]

**10. *Palisota hirsuta***

*Palisota hirsute* (Family Commelinaceae) grown as an ornamental plant and a hedge. This plant is Ethnopharmacologically reported by Mshana et al. [28] and different parts of the plant are used for various conditions like a leaf decoction for colic, juice of roasted leaves for ear-ache. Roots of *Palisota hirsute* are used to hasten expulsion of placenta after childbirth while the powdered roots is added to soup taken by pregnant women as well as relieve for stomach pains and indigestion [28]. Stem parts of the plant are used as an aphrodisiac, analgesic, antiseptic and in some cases used to treat gonorrhoea. In some African countries like Ivory Coast, Ghana and Nigeria a plaster of pulped stems or the sap in a compress is applied to ease fractures and arthritic pains. The plant sap and stem is chewed ameliorate cough, bronchitis and chest-pains.

The dried leaves are smoked for toothache while a leaf-infusion is taken for piles and also given to babies to heal the navel [28].

**11. *Napoleonaea imperialis***

*Napoleonaea imperialis* P. Beauv. Belonging to the family Lecythidaceae. It is a tree or shrub of about 6 m in height, characterized by low-branching and a dense crown and is native to Nigeria, Congo and Angola [29]. *Napoleonaea imperialis* a medicinal plant commonly found in South-Eastern Nigeria. The bark and fruit-rind are used as medicine to treat respiratory tract infections while the fruit-pulp is used for food among the indigenous locals in Eastern Nigeria where the plant is found. The twig is used as chew-sticks for oral hygiene. The seeds and leaf are said to contain glycosides, saponins and steroids [30,31].



***Palisota hirsuta***

Source: Francis et al. [31]



***Napoleonea imperiali***

Source: Gloria et al. [32]

### **12. *Cnestis ferruginea***

*Cnestis ferruginea* (Connaraceae) is a plant used in the treatment of several affections including sterility and increasing fertility [32].

### **13. ALL AJU MBAISE**

Aju Mbaise is a traditional medicine, composed of combination of leaves, roots and trunk of different medicinal tree wrapped together commonly used by the people of Mbaise in south eastern Nigeria. It is a combination of plant leaves decocted and administered to women for

trimming down post pregnancy complications. The plants combination have been reported to include *Cnestis ferruginea*, *Xylopia aethiopica*, *Uvaria chamae*, *Palisota hirsuta*, *Scleria sp*, *Napoleonea imperialis*, *Dialium guineense*, *Combretum racemosum* and *Heterotis rotundifolia* [33]. These herbs are usually taken by women especially those who just put to bed to detoxify, cleanse and sanitise the stomach after delivery. According to Nnadiukwu et al. [33] the decoction contains alkaloid, flavonoids, glycosides, phenols, saponin, tannins, terpenoids in which the medicinal efficacy of the plants may have resulted from these bioactive compounds.



***Cnestis ferruginea***

Source: Zougrou et al. [32]





**Aju Mbaise**

Source: Nnadiukwu et al. [33]

#### 14. CONCLUSION

This present review has shown that these medicinal plants possess potent active compounds and thus play significant role in postnatal recovery of nursing mothers as they possess many biological properties with many beneficial effects on the health of mother and baby which pass from mother to neonate through lactation. Hence the use of these spices is encouraged. However, this review encourages holistic utilization of these medicinal plants for effective postnatal recovery.

#### COMPETING INTERESTS

Authors have declared that no competing interests exist.

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