

Indigenous knowledge on ethnobotanical potentials of oowu waterfall for sustainable livelihood and development in climate change

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Abstract

The study was carried out to survey the indigenous potentials of plants in Oowu waterfall Owa-kajola, Kwara state for sustainable livelihood and development in climate change. There is little or no information on the ethnobotanical potentials of the area. Therefore, there is need to identify the floral composition and their medicinal potentials with a view of conserving the indigenous knowledge for sustainable livelihood and development in climate change using oral interviews and direct counting through guided field walk. Attempts were made to identify the species present at the centre using descriptive statistics to categorize plants to their Botanical names, families, growth habit and utilization/uses were also highlighted. Twenty (20) different plants species were found belonging to sixteen (16) families. Compositae had the highest occurrence 3(18.75%) while Liliaceae, Araceae, Bombacaceae, Palmae, Moraceae, Anacardiaceae, Nephrolepidaceae, Amarylidaceae, Sapindaceae, Apocynaceae, Rubiaceae, Bromeliaceae, Asteraceae, Mimosaceae and Euphorbiaceae had the least 1(6.25%). Different habits: herbs, shrubs, trees were exhibited. Tree had the highest percentage frequency of occurrence (40%) while shrubs and herbs (30%) had the least. Findings revealed that plants are of great ethnobotanical importance used in curing different ailments. This work will surely be of great assistance to researchers and tourists if the management of Oowu waterfall tourists' centre which is richly endowed with flora resources will label the species found in the centre using this work. The Government and private investors should invest more capital in developing so that it can improve sustainable livelihood and development in climate change of the area.

Keywords: indigenous, knowledge, potentials, sustainable livelihood, development

1. Introduction

Plants possess curative properties using different parts, preparation, and administration of drugs varies from one place to other. However, the use of herbal medicines is fading away gradually. People are relying on the use of plants and there is need to document these plants most especially our tourists' centre. Ethnobotany is the study of how people make use of the indigenous plants. Oowu waterfall is a potential geotourist site capable of promoting recreation and tourism and improving the standard of living of inhabitant of Owa- kajola, Kwara state. The Oowu Waterfall in Kwara state is sometimes referred to as a "wonder in the wilderness." This study is aimed at documenting the ethnobotanical inventory of plants growing in Oowu Waterfall in Kwara state tourism centre, Nigeria.

Methodology

Oowu falls is a breath-taking landscape at the outskirts of Owa-Kajola, in Ifelodun local government area of Kwara state. It is between two villages which are Owa Onire and Owa Kajola. Oowu falls towers about 120 meters above the sea level and is considered the highest and the most spectacular waterfall in the whole of West Africa, surrounded by a stretch of mountains extending to Ekiti and Kogi states. The rich and evergreen vegetation and beautiful site makes the environment attractive to visitors (both local and foreign) and other creatures like birds, monkeys and reptiles (Alberta, 2016) ^[1]. Oowu Waterfall is heaven on earth tourist centre located in Oowu Isin Local Government of Kwara state (Plate 1).

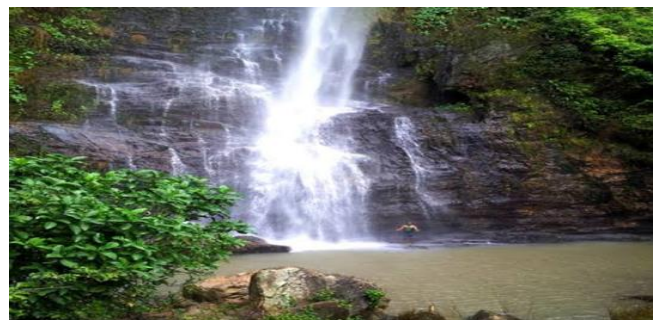


Fig 1: Oowu Waterfall

Method of Data Collection

Medicinal data of plants were collected from the elders in the community in the study area within time of visit July to September 20, 2019. Visual counting of plants were carried out with herb sellers, elders in the community to know the local names, botanical names, part used, methods of preparation, number of stands and habits. Pictorial records were also taken for classroom teaching and other useful memories. The data for this research work was analyzed using descriptive statistics.

Results and Discussions

A total of Twenty (20) plants were found at Oowu Waterfall belonging to Sixteen Families namely: Compositae, Liliaceae, Araceae, Bombacaceae, Palmae, Moraceae, Anacardiaceae, Nephrolepidaceae, Amarylidaceae, Sapindaceae, Apocynaceae,

Rubiaceae, Bromeliaceae, Asteraceae, Mimosaceae and Euphorbiaceae (Table 1).

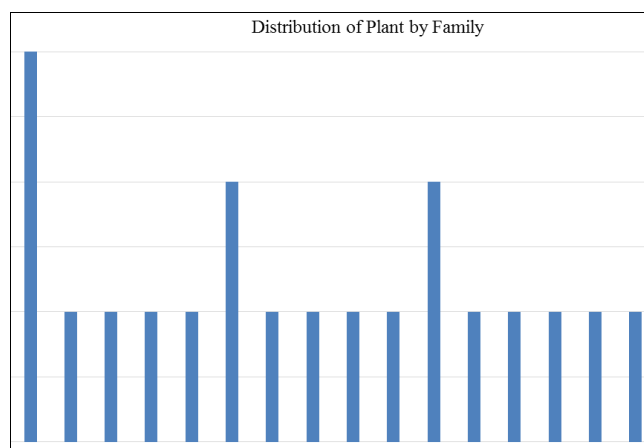
Table 1: Plant Distribution at Oowu Waterfall

| S/N | Species name | Family name | Local names | Common names | Parts used | Number of stands | Medicinal uses |
|-----|------------------------------|------------------|------------------------|-------------------|-----------------------------|------------------|--|
| 1. | <i>Ageratum conyzoides</i> | Compositae | Imi-esu/erinkomi | Goat weed | Leaves | 10 | Wounds,ulcer,craw-craw |
| 2. | <i>Aloe barteri</i> | Liliaceae | Eti eri-ida-egun | Aloe | Leaves | 2 | Ringworm, fruits for preventing snake bite |
| 3. | <i>Anchomanes difformis</i> | Araceae | Ogirisako/abirisoko | Anchomanes | Roots | Numerous | Gonorrhoea |
| 4. | <i>Aspilia africana</i> | Compositae | Yunyun/kalankuwa | Haemorrhage plant | Leaves/flower | 3 | Skin rash, stomach disorders |
| 5. | <i>Ceiba pentandra</i> | Bombacaceae | Araba/egungun | White sillicotton | Flower, leaves | 4 | Diabetes, fever, gonorchoea, emollient |
| 6. | <i>Chromolaena odorata</i> | Compositae | Akintola, awolowo | Siam weed | Leaves stem wigs | 8 | Wound, Malaria, tootache |
| 7. | <i>Elaeis guineensis</i> | Palmae | Igi ope | Red oil palm | Root, palm oil bark vernels | 3 | Mental disoeders asthma measles |
| 8. | <i>Ficus capensis</i> | Moraceae | Opoto, odanabaa | Wild fig | bark | | Wounds, fevers dysentry |
| 9. | <i>Magnifera indica</i> | Anacardaceae | Mangoro | Mango tree | Leaves root stem bark | 2 | Malaria, diabetes high blood pressure |
| 10. | <i>Nephrolepis bisserata</i> | Nephrolepidaceae | Iramu, oworo | fern | Whole plant, root | Numerous | Pregnancy booster |
| 11. | <i>Crinum jagus</i> | Amarylidaceae | Ogede odo, obase | Frest crinum | Leaves bulb | 7 | Female fertility, cough |
| 12. | <i>Paulina pinnata</i> | Sapindaceae | Kakansela, obi-omode | Hipo cola | Leaves seeds roots | 11 | Sore throats leprosy menstrual disorder |
| 13. | <i>Rauvolfia vomitoria</i> | Apocynaceae | Asofeyeje | Serpent wood | bark | 1 | Treatment of insect bite,scorpion bite |
| 14. | <i>Nauclea latitolia</i> | Rubiaceae | Ewe egbesi egbo egbesi | Pin cushion tree | Leaf | 8 | Malaria, hypertension diarrhea, tuberculosis |
| 15. | <i>Dracaena arborea</i> | Bromeliaceae | Ewe peregun | Scarlet star | leaf | 1 | Convulsions, constipation, haemorrhoids |
| 16. | <i>Raoulia rubra</i> | Asteraceae | Ewe esun | Vegetable sheep | Young leaves | 1 | Lower blood pressure |
| 17. | <i>Acacia ataxacantha</i> | Mimosaceae | Ihun | Benin rope | Leaves | 5 | Dysentery Backache. Anti-venomous stings and bites. |
| 18. | <i>Alchornea cordifolia</i> | Euphorbiaceae | Esinsin | Christmas bush | Leaves | 5 | Fever, Rheumatism,Antimicrobials, Diuretic, Purgative, Tooth ache, Cough, Sore |
| 19. | <i>Ficus exasperata</i> | Moraceae | Igi ipin | Forest sand paper | Bark, leaves | 1 | Abscess, Arthritis, Ascaris |
| 20. | <i>Alstonia boonei</i> | Apocynaceae | Ewe ahun | Stool wood | Leaves | 5 | Malaria, Fever tumour, Breast development |

Distribution of Plant by Family

Family Compositae had the highest 3 (15%) number of species, Moraceae and Apocynaceae had 2 (10%) number of species while Liliaceae, Araceae, Bombacaceae, Palmae,

Anacardiaceae, Nephrolepidaceae, Amarylidaceae, Sapindaceae, Rubiaceae, Bromeliaceae, Asteraceae and Mimosaceae all had 1 (5%) number of species in Oowu Waterfall, Kwara State, Nigeria (Figure 1).

**Fig 2:** Distribution of Plant by Family

Distribution of Plants by Habit

The plants found at Oowu Waterfall are of different habits which are Herbs, Shrubs and Trees. Tree had the highest occurrence 8 (40%), shrub and herbs had 6 (30%). The result from the findings shows that Oowu waterfall is characterized with vegetations predominantly trees, this shows that Oowu waterfall is a forest area with tall and big trees such as *Ceiba pentandra*. The lower storey of Oowu waterfall consist of medium sized plant (Shrub) such as *Anchomanes difformis* which make the study area to be more shady preventing the sufficient ray of light from sun to reach the lower vegetations (herbs). This findings is supported by Floyd *et al.* (2000) [3].

Identification of Plant



Fig 3: Rauvolfia vomitoria



Fig 4: Aspidelia Africana



Fig 5: Ceiba pentandra



Fig 6: Ficus exasperata



Plate 7: Chromolaena odorata



Fig 8: Anchomanes difformis



Fig 9: Ageratum conyzoides



Fig 10: *Dracaena arborea*



Fig 13: *Aloe barberi*



Fig 11: *Paulina pinnata*



Fig 14: *Nephrolepis bisserata*



Fig 12: *Ficus Capensis*



Fig 15: *Raoulia rubra*

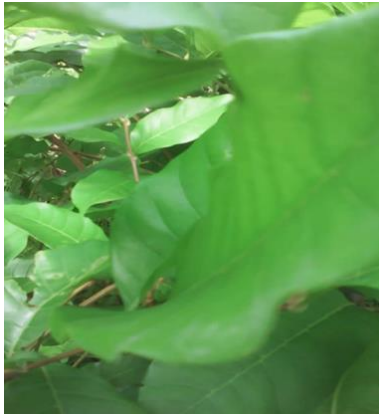


Fig 16: *Acacia ataxacantha*



Fig 17: *Crinum Jagus*



Fig 18: *Alchornea cordifolia*



Fig 19: *Alstonia boonei*



Fig 20: *Elaeis guineensis*



Fig 21: *Mangifera indica*

Medicinal Importance of Plants at Oowu Water Fall.

Treatment of wound

The leaves of *Ageratum conyzoides* and *Chromolaena odorata* is squeeze and applied directly to the affected areas/wound. It serves as first aid in case of wound.

Malaria

The leaf of *Chromolaena odorata*, leaves and bark of *Mangifera indica*, *Nauclea laterifolia*, *Alstonia boonei* is concerted and taken twice (morning and light) in a day.

Skin Diseases

The leaves of *Aspilia africana* is squeezed and the leave residue is used to rub the affected skin every morning before bath.

Gonorrhea

Root of *Anchomanes difformis* and leaf of *Ceiba pentandra* are boiled and filtered, the filtrate is then taken before eating in the morning.

Menstrual Disorder

The whole plant of *Paulina pinnata* is squeezed and drinks directly.

Asthma

The decoction of the root, bark and vernel *Elaeis guineensis* taken by the affected person with tea spoonful twice daily.

Convulsion

The leaves *Dracaena arborea* and *Paulina pinnata* are crushed then mix with ethanol. Two tea spoon taking trice daily

Conclusion

The ethnobotanical purposes of plants cannot be over-emphasized. The plants found at the study area (Oowu waterfall) are of great ethnobotanical importance used in curing of different ailments. Compilations such as this will further bring to fore the primary functions of these plants and enhance the upkeep of genetic variety, fortification of soil and water assets and maintenance of educational heritage. Further study is required for the scientific and clinical validation of these indigenous claims.

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