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Ethno-Medicinal Assessment of Wild Edible Plants in Ijesa Region, Osun State, Nigeria

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Abstract

This study assessed the ethno-medicinal values of wild edible plants (WEPs) in Ijesa region, of Osun State, Nigeria. A combination of social survey and direct field observation was employed to obtain information on the WEPs from 80 respondents in five randomly selected communities located within the region. A total of 85 WEPs belonging to 45 families were identified and their ethno-medicinal values were documented. Various parts of the identified WEPs were consumed but the leaves constituted the most widely consumed part. Secondary information revealed that the identified WEPs were rich in different phytochemicals which were thought to be responsible for their nutritional and medicinal values to curing and preventing diverse diseases. Field observation revealed that only 34 of the WEPs, representing 40%, were presently cultivated in the study area despite the fact that 52 of them, constituting 61%, were of immense economic values in the study area. Thus collections of the non-cultivated WEPs were skewed toward those in the wild. Hence conservation efforts are required to enhance their continuous supply in the study area. Strategies to ensure their supply were proposed.

Keywords: Ethno-medicine, wild plants, conservation, region, observation, Nigeria

INTRODUCTION

The Ijesa is a unique ethnic tribe in Osun State of south western Nigeria (Kayode *et al.,* 2016). Ijesa are mostly farmers who occupied six local government areas of the State that are situated in the rain forest region of the country. This vegetation is rich in flora species. At present the rate of deforestation in this region is better imagine as existing statistics could be frighten thus contributing to rapid erosion of flora species of the area, especially the wild species most of which are edible.

Heywood (1999) described the wild edible plants (WEPs) as plants that grow spontaneously in self-maintaining populations in natural or semi-natural ecosystems and exist independently of direct human action. Pieroni and Quave (2006) as well as Kallas (2010) opined that WEPs often possess one or more parts that are of medicinal value. Many of them are found available throughout the year as they tolerate water stress better than their domesticated relatives through the possession of an innate resilience to rapid climate change, which is often lacking in exotic species. According to Shumsky *et al.,* (2014), WEPs provide greater benefits to vulnerable populations being low-input, low cost option for increasing nutrition and decreasing the need to spend limited cash resources on food and medicine.

Recent initiatives revealed that a gross dearth of ethnobotanical studies abounds on WEPs in the Ijesa region despite the array of factors causing intensive destruction to the vegetation of the region. At present, there is lack of accurate data base on abundance status of flora species in the region. Thus, there is an urgent need for documentation, as previously advocated by Bhogaonkar *et al.,* (2014), particularly when it has been established that the use of WEPs is based on local ecological knowledge. Consequent on the above, the study being reported here aimed at documenting the ethnomedicinal values of the WEP species found in Ijesa region and prescribe strategies that would enhance their sustainability for the use of the present and future generations.

MATERIALS AND METHODS

Five settlements located within the Ijesa region were randomly selected. Settlements selected were Ijebu-jesa, Ijeda, Iloko, Esa-oke and Esa-odo. Ijebu jesa, Iloko and Ijeda settlements belong to Oriade Local Government Area of Osun state, Nigeria while Esa odo and Esa oke belongs to Obokun Local Government Area of Osun State, Nigeria (Figs 1 and 2). In Ijebu-jesa settlement; Odo-ese, Odo-Oja, Ogbon-oloro and Okenisa communities were randomly selected. In each community, ten respondents were randomly selected and interviewed. In Ijeda, Iloko, Esa-oke and Esa-odo settlements, ten respondents were also randomly selected in each settlement and interviewed with the aid of a semi-structured questionnaire matrix.

The interviews which were aimed at accessing the ethnomedicinal values of the respondents on the WEPs in the study area were conducted with fairly open framework, focused and two-way communication. The WEPs in the region, their edible parts, method(s) of propagation and usage were identified and recorded. Voucher specimens of the identified species were collected and later deposited at the herbarium of the Department of Plant Science and Biotechnology, Ekiti State University, Ado-Ekiti, Nigeria. Also group interviews were conducted in each community. Each group was made up of at least five respondents.

Key informants, made up of health and agriculture officials, were identified in each local government area and interviewed while the secondary information was obtained from records and internet.

The relative abundance of each of the identified WEP species in the communities sampled was determined using the time taken to physically sight the species in each community.

The species were considered as:
Abundant when sighted in less than 1 hour, and scored 3
Frequent when sighted within 1 and 2hours, scored 2
Rare when sighted after 2 hours, scored 1.
The average score of:
3 proved the species as Abundant, 2 as Frequent and 1 as Rare.

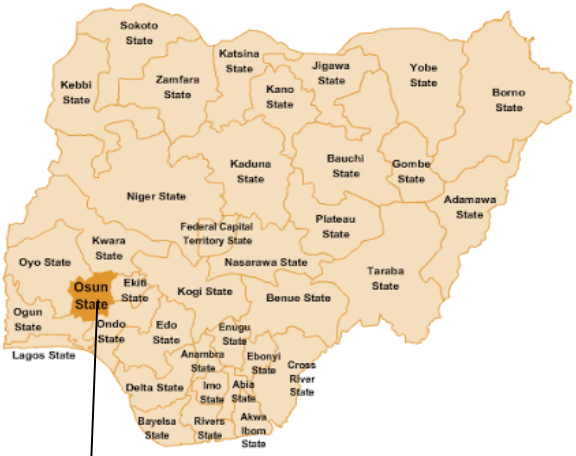

Fig.1: Map of Nigeria showing Osun State

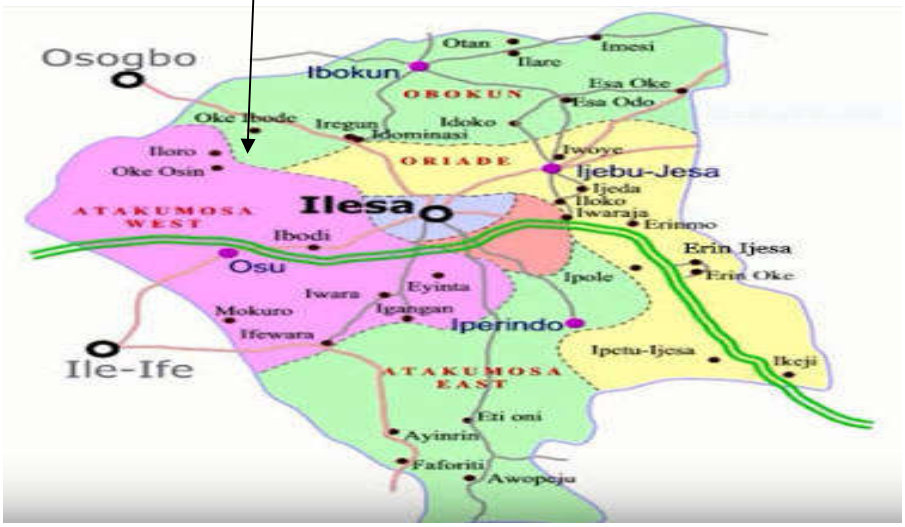

Fig 2: Map of Ilesa region of Osun State

RESULTS

A total of 85 WEP species belonging to 45 families were identified in the study area (Table 3). While families Euphorbiaceae and Asteraceae have the highest number of species (8 and 7 species respectively), family Solanaceae has five species, families Apocynaceae and Amaranthaceae have 4 species each, Malvaceae, families Moraceae, Poaceae and Cucurbitaceae have three species each; Families Anacardiaceae, Meliaceae, Papilionaceae, Sapindaceae, Caesalpiniaceae, Asclepidaceae, Mimosaceae, Piperaceae and Ulmaceae have 2 species each. Other families contained a species each.

Field observation revealed that the respondents were versed on the ethno-medicinal importance of the identified WEPs. Table 2 revealed that the species were rich in curing and/or preventing diverse diseases. Secondary information revealed that each of the identified species was also rich in diverse phytochemicals (Table 3). Table 3 also revealed that the various methods of utilization of the WEPs were simple with affordable ingredients. Various parts of the identified species were consumed but the part mostly consumed are the leaves.

Table 4 shows that most of the identified WEPs were not cultivated in the study area hence dependence was skewed to those growing in the wild. 60% of the identified species were not cultivated. However, 61% of the identified WEPs were presently valued for the economic returns derived from them (Table 5).

Table 1: Identified WEPs in Ijebu Region

S/n	Botanical Name	Family	Vernacular Name	Common Name
1	*Abelmoschus manihot* (L.) Medik.	Malvaceae	Ila-uroko	Okra
2	*Acanthus montanus* (Nees) T.Anderson	Acanthaceae	Epinpin	Acacia
3	*Ageratum conyzoides* L.	Asteraceae	Imi-esu	Goat weed
4	*Alchornea laxiflora* (Benth.) Pax & K. Hoffm.	Euphorbiaceae	Pépé	Lowveid bead- string
5	*Alstonia boonei* De Wild.	Apocynaceae	Ahùn	God's tree
6	*Alstonia congensis* Engl.	Apocynaceae	Sawéwé	Stool wood
7	*Alternanthera sessilis* (L.) DC.	Amaranthaceae	Rèkùrèkù	Sessile joy weed
8	*Amaranthus Viridis* L.	Amaranthaceae	Olorun gbin/tete	Green amaranthus
9	*Anacardium occidentale* L.	Anacardiaceae	Kasu	Cashew nut
10	*Anthocleista nobilis* G. Don	Loganiaceae	Sapo sapo	Cabbage palm/tree
11	*Artocarpus altilis* (Parkinson) Fosbera	Moraceae	Berefrúùtù	Breadfruit
12	*Azadirachta indica* A. JUSS.	Meliaceae	Dongoyaro	Neem
13	*Bambusa vulgaris* Schrad. ex J.C. Wendl.	Poaceae	Òparun	Bamboo
14	*Baphia nitida* Lodd.	Papilionaceae	Awede	Camwood
15	*Blighia sapida* K.D. Koenig	Sapindaceae	Isin	Akee apple
16	*Bridelia ferruginea* Benth.	Euphorbiaceae	Ìrà	Ira
17	*Caesalpinia bonduc* (L.) Roxb.	Caesalpiniaceae	Ayoo	Bonduc nut,nickerbean
18	*Callichilia barteri* (Hook. F.) Stapf	Apocynaceae	Ìsépé àkèré	Dog breast
19	*Calotrapis procera* (Ait.) R.Br.	Asclepiadaceae	Bomubomu	Giant milk weed
20	*Capparis brassii* DC.	Capparaceae	Ekana igun	Narrow leaf
21	*Carica papaya* L.	Caricaceae	Ibepe	Pawpaw
22	*Ceiba pentandra* (L.) Gaertn.	Bombacaceae	Araba	Kapok Tree
23	*Celosia argentea* L.	Amaranthaceae	Sokoyokoto	Cockscomb
24	*Celosia leptostachya* Benth.	Amaranthaceae	Ajefawo	Eat-done-break-plate
25	*Celtis zenkeri* Engl.	Ulmaceae	Uta	Ohia
26	*Chenopodium ambrosioides* L.	Chenopodiaceae	Arùnpàlè	Worm wood
27	*Chromolaena odorata* (L.) R.King & H.Rob.	Asteraceae	Akintola	Christmas bush/ Baby bush
28	*Chrysophyllum albidum* G. Don	Sapotaceae	Agbalumo	African star apple
29	*Clerodendrum capitatum* (Willd.) Schumach. & Thonn.	Verbenaceae	Asanigùn	Christmas rose
30	*Combretum micranthum* G. Don	Combretaceae	Okan	Kinkeliba bark
31	*Conyza sumatrensis* (Retz.) E. Walker	Asteraceae	Olowojeja	Green
32	*Corchorus olitorius* L.	Tiliaceae	Ewéédú	Jew's Mallow

33	*Crassocephalum rubens* (Juss. ex Jacq.) S. Moore	Asteraceae	Ebòlò/ Ebire	Yoruban bologi
34	*Cucurbita klaineana* L.	Cucurbitaceae	Apako	Salt and oil tree
35	*Cymbopogon citratus* (DC.) Stapf	Poaceae	Tee/ korikooyibo	Lemon grass
36	*Datura stramonium* L.	Solanaceae	Apikan	Devil's apple
37	*Distemonanthus benthamianus* Baill.	Caesalpiniaceae	Ológbe	Bird's millet
38	*Enantia chloranta* Oliv.	Annonaceae	Awopa	African yellow wood
39	*Euphorbia hirta* L.	Euphorbiaceae	Oró alabebe	Asthma herb
40	*Ficus exasperata* Vahl	Moraceae	Èpìn	Sandpaper leaf
41	*Funtumia elastica* (Preuss) stapf	Apocynaceae	Ure	Silk rubber tree
42	*Garcinia kola* Heckel	Clusiaceae	Orógbó	Bitter kola
43	*Gossypium barbadense* L.	Malvaceae	Òwú	Cotton
44	*Harungana madagascariensis* Lam. ex Poir.	Simaroubaceae	Arunje	Dragon blood tree
45	*Heliotropium indicum L.*	Boraginaceae	Apari-ìyìn/ Ogbooriakuko	Cock's comb/ turnsole
46	*Irvingia gabonensis* (Aubry-Lecomte ex O'Rorke) Baill.	Irvingiaceae	Apon	wild mango
47	*Jatropha curcas* L.	Euphorbiaceae	Lapalapa pupa	Barbados nut/fig nut/termite nut
48	*Jatropha gossypifolia* L.	Euphorbiaceae	Lapalapa funfun	Bellyache bush
49	*Jatropha multifida* L.	Euphorbiaceae	Ogege	Coral plant
50	*Khaya senegalensis*(Desr.) A. Juss.	Meliaceae	Ogónwó	African mahogany
51	*Lawsonia inermis* L.	Lythraceae	Laali	Cypress shrub
52	*Lecaniodiscus cupanioides* Planch.	Sapindaceae	Akika /aika	Lecaniodiscus
53	*Mallotus oppositifolius* (Geiseler) Müll. Arg.	Euphorbiaceae	Orokoro	Camala
54	*Medicago sativa* L.	Fabaceae	Alfalfa	Lucerene
55	*Milicia excelsa* (Welw.) C.C. Berg	Moraceae	Irókò	Iroko tree
56	*Momordica charantia* L.	Cucurbitaceae	Ejirin	Bitter melon
57	*Morinda lucida* Benth.	Rubiaceae	Òruwo	Brimstone tree
58	*Nicotiana tabacum* L.	Solanaceae	Taba	Tobacco
59	*Ocimum gratissimum* L.	Lamiaceae	Efirin	Scent leave/ hoshindia
60	*Opuntia ficus* indica (L.) Mill.	Cactaceae	Oró-agogo	Indian fig /prickly pear
61	*Parkia biglobosa* (Jacq) R. Br.ex G.Don	Mimosaceae	Iru	Locus bean
62	*Peperomia pellucida* (L.) Kunth	Piperaceae	Rinrin	Silver bush
63	*Periploca nigrescens* Afzel.	Asclepiadaceae	Ogbó	African parquetina
64	*Persea americana* Mill.	Poaceae	Pia	Pear
65	*Piper guineense* Schumach. & Thonn.	Piperaceae	Ata-ijosin	Bush pepper
66	*Psidium guajava* L.	Myrtaceae	Golifa	Guava
67	*Pterocarpus osun* Craib	Papilionaceae	Òsún	Blood wood
68	*Pycnanthus angolensis* (Weiw.) Warb.	Myristicaceae	Akomu	wild nutmeg

69	*Sida acuta* Burm. F.	Malvaceae	iseketu /gbajirina	Hornbean leaf sida
70	*Smilax anceps* Willd.	Smilacaceae	Ègbó	Wild sarsaparilla
71	*Solanecio biafrae* (Oliv. & Hiern) C.Jeffrey	Asteraceae	Wòròwò	English spinach
72	*Solanum americanum* Mill.	Solanaceae	Odu	Black nightshade
73	*Solanum macrocarpon* L.	Solanaceae	Ìgbágbá	Africa Egg plant leaf
74	*Solanum scabrum* Mill.	Solanaceae	Ògùnmó	Garden huckleberry
75	*Sparganophorus sparganophora* (L.) C.Jeffrey	Asteraceae	Ewuro odo	Water bitterleaf
76	*Spathodea campanulata* P. Beauv.	Bignoniaceae	Oruru	African tuliptree
77	*Spondias mombin* L.	Anacadiaceae	Oyika/Igi yeye	Yellow mombin
78	*Sterculia tragacantha* Lindl.	Streculiaceae	Ilakaile	Gum tragacanth
79	*Talinum triangulare* (Jaca.) Willd.	Portulacaceae	Gbure	Water lettuce
80	*Telfaria occidentalis* Hook. F.	Cucurbitaceae	Ugu	Fluted pumpkin leaf
81	*Tetracarpidium conophorum* (Mull. Arg.)Hutch. & Dalziel	Euphobiaceae	Awusa	African walnut
82	*Tetrapleura tetraptera* (Schumach. & Thonn.) Taub.	Mimosaceae	Arindan	Aridan
83	*Trema orientalis* (L.) Blume	Ulmaceae	Afefe, ayinyin	Charcoal tree
84	*Vernonia amygdalina* Delile	Asteraceae	Ewuro pakiti	Bitter leaf
85	*Viscum album* L.	Lorantaceae	Afomo	Mistletoe

Table 2: Ethno medicinal values and phytochemical compositions of the identified WEPs in Ijesa Region

S/N	WEPs	Food and/ or medicinal values	Phytochemical component
1	*A.manihot*	Fruits: diuretic, and emollient. It is also used in the treatment of catarrhal infections, odor urine, diarrhea and gonorrhea. Leaves: emollient, soporific or antiscorbutic.	Water, energy, protein, fat, carbohydrate, fiber, Ca, Fe, ß-carotene, thiamin, riboflavin, niacin, ascorbic acid.
2	*A. montanus*	Urogenital infections, urethral pain,endometritis, leucorrhoea, cough, chest complaints, typhoid.	Alkaloids and carbohydrates. Saponin, glycosides, terpenoids, lignin glucosides, cytotoxic, acteoside.
3	*A. conyzoides*	fevers, headaches, conjunctivitis, colic, colds, diarrhea, rheumatism, pneumonia, epilepsy, wounds	Alkaloids, flavonoids, cumarins, essential oils and tannins, chromenes, benzofurans, terpenoids.
4	*A. laxiflora*	High fever, malaria, pains, cough, dysentery	Alkaloids, flavonoids, cardiac glycosides, quercitrin, saponins and phenolic compounds
5	*A. boonei*	fevers, tumors, aphrodisiac, analgesic	Echitamidine and echitamine, butamine, loganin, ursolic acid, bramyrin, alkaloids, tannins and triterpenoids.

6	*A. congensis*	Malaria, fevers, arthritis, ulcers, rheumatic pain	Alkaloids, tannins, cardiac glycosides, steroids, saponins.
7	*A. sessilis*	Pile, jaundice, vegetable, alleviate pain, reduction of blood sugar level,cold, fever, headache.	Alkaloids, glycosides, saponins, flavonoids, sterpenoids, phenol and carbohydrates
8	*A. Viridis*	Vegetable, dysentery, purification of the blood	Tannins, glycosides, protein, saponins, alkaloids
9	*A. occidentale*	Diabetic, chemotherapy, malaria, syphilitic ulcers, diarrhea, sore throat	Nutrients, phenolic lipids, thiamin, stearic acid, oleic acid, linoleic acid, phytosterols.
10	*A. nobilis*	Purgative, diuretic, constipation, hypertension, typhoid fever.	Xanthones, secoiridoids, quinoline, alkaloid, brucine, glycoside, loganine
11	*A. altilis*	Highly nutritional for food	Carbohydrate, protein,
12	*A. indica*	Cancer management, malaria, elephantiasis, dental care,chicken pox,jaundice	Nimbin, nimbidin, nimbolide, and limonoids, Quercetin and ß-sitosterol, ascorbic acid, n-hexacosanol and amino acid, 7desacetyl-7-benzoylazadiradione, 7-desacetyl-7-benzoylgedunin, 17hydroxyazadiradione, and nimbiol, gedunin and azadirachtin.
13	*B. vulgaris*	Hepatitis, Measles, infantile epilepsy,fever,	Chloroform, saponins, tannins, alkaloids, flavonoids,
14	*B. nitida*	Enteritis,gastrointestinal problems	Saponins,flavonoid glycosides, tannins
15	*B. sapida*	Anaemia, itching, yellow fever	Fruit: Saponin, saponin glycoside, tannin, balsam, cardiac glycoside and volatile oil.
16	*B. ferruginea*	fevers, headaches, stiffness, rheumatic pains, diabetes, pediatric illness	quercetin, galangin, naringenin, Lupeol, β-amyrin, β-sitosterol, flavonoids, bridelilactone and bridelilactoside,
17	*C.bonduc*	Malaria, measles,cough	Isoflavonoid bonducellin,ceasalpins,bondenolide
18	*C. barteri*	Gonorrhea, tonic, laxative, dizziness, anxiety	Alkaloids, beninine, amataine,
19	*C. procera*	Asthma, malaria, rheumatism, measles,	Terpenoids, flavonoids, saponins, steroids and cardiac glycosides.
20	*C.brassii*	Root;toothache,fever,stomach complaints,cough. Leave;vegetable.	Reducing sugar, flavonoids, steroids, tannins, alkaloids, resins, amino acids, proteins and anthraquinones.
21	*C. papaya*	Jaundice, malaria, hypertension, digestive conditions, diuretic, stomachic, and antiseptic	Vitamin A, B and C, alkaloids carpaine, isocarpaine, and dihydrocarpaine I and II. Fixed oils, carbohydrates, glycosides, carpasemine, and benzene senevol. Pentalcohol, xylitol, and saponins.
22	*C. pentandra*	scabies, diarrhoea, coughs, treatment of bronchial congestion, asthma,	Tannin in leaves and stems; fats in stem; calcium oxalate in leaves and stems; peroxidase in leaves and stems. Seeds: oil; water; ash; crude fiber; albuminoids; carbohydrates. Palmitic acid.
23	*C. argentea*	Astringent, haemostatic, ophthalmic, dysentery and diarrhea.	Betalains, nicotinic acid, celogenamideA, celogentin A-D, celogentin-H, celogentin-J and celogentin-K, moroidin.
24	*C. leptostachya*	Dysentery, skin diseases,	Alkaloids, carbohydrates, flavonoids,

		anthelmintic, arthritis. Eye treatment.	steroids, tannins and trepenoids.
25	*C. zenkeri*	Cough,	Alkaloids,flavonoids, tannis, saponins, cyanogenic glycosides.
26	*C. ambrosioides*	sauces, condiments, spices, flavourings,	Ascaridole, isiascaridole, p-cymene, terpenene and limonene.
27	*C. odorata*	Cough, malaria, smallpox, yellow fever	Bitter sesquiterpene lactones, vernolepin, vernodalin, vernomygdin, and steroid glucosides, flavone salvingenin, the triterpene alcohol lupeol, and β-amyrin.
28	*C. albidum*	Bark:Malaria, sleeping sickness, fellow fever. Leave: as emollients, treatment of skin eruptions, diarrhea, and stomachache. Fruit: prevent nausea.	Leaves and stems: β-amyrin acetate, gentisic acid, and alkaloids. Latex: isoprene, polyisoprene. Fruits: ascorbic acid.
29	*C. capitatum*	Headaches, epilepsy, typhoid, cancer, jaundice, hypertension.	alkaloid, tannins, saponins, steroids, flavonoids, triterpenes, anthraquinon, phenolic compound.
30	*C. micranthum*	Diabetes, obesity, typhoid and high cholesterol.	Catechins, glycosides, choline, organic acids, tannins, and resin.
31	*C. sumatrensis*	Antipyretic, asthma, tuberculosis	Tannin, phenol, sterol, saponin, flavonoid and alkaloid.
32	*C. olitorius*	They are used in the treatment of diuretic, febrifuge and tonic, chronic cystitis, gonorrhoea and dysuria, restore appetite and strength	Protein, glycosides, saponims, steroids, alkaloids. Vitamins A, C and E.
33	*C. rubens*	Stomachic, liver complaints and cold, measles, chicken pox, breast cancer.	Tannins, coumarins, combined anthracane derivatives, C-heterosides, flavonoids, mucilage, reducing compounds and steroids. Alkaloide anthrocyanins, quinine derivatives, saponins, triterpenoids, cyanogenic derivatives.
34	*C. klaineana*	Coughs, antheimintics, antipyretic, purgative	Tannins, saponins, phlobatannins, flavonoids, terpenoids, steroids, alkaloids, carbohydrate, and glycosides.
35	*C. citrates*	Fevers, jaundice, diuretic, diaphoretic, stomachic, carminative, tonic, antirheumatic, and antidiarrheal.	Volatile oil (terpene aldehyde), geraniol, nerol, furfural, citronellal, methyleptenone, and myrcene, also triterpenes cymbopogone and cymbopogonol.
36	*D. stramonium*	Cough and chest complaints, to severe cases of insect bites and stings, also on inflammations to allay the pain, as an inhalant for the treatment of asthma.	Tropane alkaloids hyoscyamine, atropine, and scopolamine. The total alkaloid yield has been estimated to be young leaves contain mainly scopolamine, whereas hyoscyamine is the major constituent of the mature leaves. Alkaloids, the plant contains other minor tropane derivatives, as well as chlorogenic acid and lectins. The seeds contain up to.

37	*D. benthamianus*	Malaria, typhoid fever	Flavonoids and phenolic compounds, Tannins, steroid, saponins and alkaloids.
38	*E. chloranta*	Malaria,convulsion and jaundice	Saponins,tannins,antrquinones,cardiac glycosides,terpense,alkaloids
39	*E. hirta*	Asthma, cough, acute enteritis, dysentery, conjunctivitis.	Stem: Taxerol, friedelin, β-sitosterol, myricyl alcohol, ellagic acid, and hentriacontane. Latex: I-inositol, pyrogallic, and catechuic tannins and an alkaloid xanthorhamnine.
40	*F. exasperate*	Hypertension, ulcer, lipid-lowering, analgestic, anti-inflammatory and antipyretic activity.	Anthgraguinones, flavonoids, reducing sugar, saponins, steroids, tannins and terpenoids
41	*F. elastica*	Cure arrow poison, treat whooping cough, asthma, blennorhea, painful menstruation, and fungi infection.	Anthocyanins, butacyanin, flavonoids, steroids and tannins
42	*G. kola*	Purgative, gonorrhea, colds, cough, aphrodisiac, dysentery,diabetes, liver disorders.	Biflavonoids, xanthones, benzophenones, chromanols garcinoic acid and garcinal and their derivatives, tocotrienol.
43	*G. barbadense*	Fever, high blood pressure, constipation, dysentery, vomiting, ulcer	Alkaloid, flavonoid, phenols, cyanogenic glycosides, saponins, steroids, terpenoids.
44	*H. madagascariensis*	Stomach ache, malaria, jaundice,sore throats, head ache, diorrhoea, gonorrhoea	Glycosides, saponins, steroids, tannins, alkaloids
45	*H. indicum*	Treatment of yaws, ulcer, poisonous bites, and skin eruptions.	Alkaloids include europine, heliotrine, lasiocarpine, and 5′-acetyleuropine, as well as 7-angelylheliotrine, 9-angelolretronecine, and it's N-oxide.
46	*I.abonensis*	Obesity, dysentery, diabetes, yellow fever, scabies, skin, liver and gastrointestinal diseases, increases male fertility.	Seeds: fats (lauric acid, myristic acid, palmitic acid, stearic acid, and oleic acid), protein, carbohydrate, thiamin, riboflavin, and niacin. Pulp: zingiberene and α-curcumene, ethyl and methyl esters of cinnamic acid, and dodecanal and decanol.
47	*J. curcas*	Fevers, convulsions, guinea worm sore, urinary complaints, toothache, gonorrhea.	Xylose, galactose, rhamnose, and galacturonic acid, and a toxalbumin, curcin. Glycerides of stearic, palmitic, myristic, oleanolic, and curcanoleic acid.
48	*J. gossypifolia*	Pile cure, purgative, dysentery,stomach ache, skin diseases.	Flavonoids, saponin, resin, tannins, triterpenes, phenol, glycositedes,steroids, alkaloids and quinines
49	*J. multifida*	Cure for coated mouth, purgative, anthelmintic and abortifacient , ascites, gout, paralysis, skin diseases. Rheumatic conditions, itch and parasitic skin diseases.	Flavonoids, alkaloids, saponins, steroids, tannins, coumarins and phenols.
50	*K. senegalensis*	Diabetes mellitus, paludism,	Khivorin, 7-ketokhivorin, 3-

		antihelmintic, anaemia, arthritis, jaundice, coated tongue, bitter tonic and a fever remedy, malaria.	deacetylkhivorin, 3-deacetyl-7-ketokhivorin, 7-ketogedunin, methyl anglensate, methyl-6-hydroxy anglensate, mexicanolide, 6-hydroxymexicanolide, 7-deacetyl-7-oxo-gedunin, 6-deoxyswietenolide esters, and khayasin.
51	*L. inermis*	Strong antimicrobial, antibiotic	Leave: 2-hydroxy-1, 4-naphthoquinone
52	*L. cupanioides*	Typhoid Fever, jaundice, cough,maleria	alkaloids , saponin, tannin, phenol, and anthraquinone
53	*M.oppositifolius*	As Tonic (malt leaf), diarrhea, dysentery,diabetic, headache, malaria,	Flavonoids, saponins, tannins, cardenolides (cardiac glycosides), anthocyanins and possibly also alkaloids and anthraquinones
54	*M.sativa*	Boils, cancer, scurvy, diseases of the urinary and digestive systems, menstrual disorder, and anemia.	saponins, flavonoids, phytoestrogens, coumarins, alkaloids, amino acids, phytosterols, vitamins, and terpenes
55	*M. excels*	An ointment for ringworm, scabies, herpes, and other parasitic skin diseases, dysentery.	Fruit: terpenes, flavonoids, chalcones, and saponins. Bark: Five hydrolyzable tannins and cytotoxic phloroglucinol.
56	*M. charantia*	An abortifacient and carminative, headache, asthma, burn, bilious problems, cancer, colic, dysmenorrhea, colitis, coughs, catarrh, dysentery, diabetes, fever, halitosis, hepatitis, tonic, depurative, laxative, purgative	5-a-stigmasta-7,25-dien-3-betalol, 5-hydroxytryptamine, alkaloids, a-elaeostearic-acid ascorbigen, b-sitosterol-d-glucoside, charantin, citrulline, cryptoxanthin, elasterol, flavochrome, fluoride, galacturonic-acid, lanosterol, Lutein, lycopene, momordicin, momordicoside-F-1, momordicoside F-2, momordicoside-G, momordicoside-I, mutachrome, oxalate, oxalic-acid, pipecolic-acid, polypeptide-p, rubixanthin, stigmasta-5,25-dien-3-b-ol, sugars, zeaxanthin, speciophylline, stipulatine, uncarine
57	*M. lucida*	Malaria, fever, vomiting, diarrhea, dieresis, jaundice, hypertension, dysentery.	Tannins, methylanthraquinones, and heterosides.
58	*N. tabacum*	rheumatic swelling, skin diseases, painful piles, discutient, diuretic, emetic, expectorant, irritant, narcotic, sedative and sialagogue	Phenols, Terpenoids, saponins, steroids, Flavonoids, alkaloids, Glycosides, Tannin, reducing sugar
59	*O. gratissimum*	Colds, fevers, headaches, impotence, flatulence, diarrhea, dysentery, post-partum problems, and worms in children	tannins, alkaloids, flavonoids, terpenes, saponins, carbohydrates and cyanogenetic glycosides
60	*O. ficus*	diabetes, hypertension, hypercholesterolemic,	sterols/terpenes, polyphenols, flavonoids, tannins, anthraquinones, alkaloids and

		rheumatic pain, gastric mucosa diseases and asthma	saponins
61	*P. biglobosa*	Fever, diarrhoea, stomach problems, boils and burns, malaria	alkaloids, tannins, saponins, flavonoids, steroids, glycoside and sugars
62	*P. pellucid*	abdominal pain, abscesses, acne, boils, colic, fatigue, gout, headache, renal disorders, and rheumatic pain, breast cancer, impotence, measles, mental disorders, and smallpox	Flavonoids, phytosterols, arylpropanoids, substituted styrenes, and a dimeric
63	*P. nigrescens*	Menstral disorders, cardiac tonic,dysentery,blood tonic, helminthiasis,	flavonoids, tannins, alkaloids, steroid, triterpenoid, saponins, phenols, phytosterols, terpenoids, alkaloids, tropane alkaloids, isoquinoline alkaloids, carbohydrates, glycosides, reducing sugars, lipids, and acids.
64	*P. americana*	monorrhagia, hypertension, stomach ache, bronchitis, diarrhea, and diabetes	abscisic acid, alkaloids, cellulose, polygalacto urease, polyuronoids, cytochrome
65	*P. guineense*	Cough remedy, gonorrhea, bronchitis, syphilis, colds, and female infertility.	Roots: piperine, trichostachine, and lignans. Leaves: lignin dihydrocubebin. Fruits: phellandrene, pinene, and limonene. pyrrolidine amide wisanidine, pipreidine amides, dihydrowisanine, dihydropiperine, wisanine, and N-formyl piperine.
66	*P. guajava*	Diarrhea, fever, malaria	Fruits: vitamins (A and C), iron, calcium, and phosphorus. Leaves: caryophyllene, nerolidiol, β-bisabolene, and β-sitosterol and ursolic, oleanolic, crategolic, and guayavolic acids. Roots: Leukocyanidins, sterols, and gallic acid
67	*P. osun*	Diarrhea, dysentery, rheumatic	alkaloids, steroid ring, cardiac glycosides and reducing sugar.
68	*P. angolensis*	Coughs, chest complaints, malaria, anaemia, ascites, leprosy, sore in mouth, appetizer	Glycosides, alkaloids, saponin, steroids, tannins, flavonoids and terpenoids.
69	*S. acuta*	Children medicine, pile, spiritural cleaning, rheumatism, liver problems, kidney stones, nervous disorders,	Alkaloids, steroids, glycosides, amino acids, proteins, saponins, flavones, anthocyanins, phenolic compounds
70	*S. anceps*	Enhance immunity, lose weight, prevents cancer,enhance fertility	Alkaloids, Cardiac glycosides, Anthraquinones, Saponins, Tannins, Phlobatannins, hydrocyanin
71	*S. biafrae*	nutrient, tonic, cough, heart problem, small pox	saponins,tanins, phlobataninss, phenol, anthraquinones, flavonoids, glycoside, steroids, terpens, cardenolides, chalcones,quinones and terpenoids

72	*S. americanum*	Convulsion,tonic, malaria, treat worms, diuretic	The most important of these bioactive constituents of plants are alkaloids, tannins, flavonoids, phenolic
73	*S. macrocarpon*	Stomachic (hookworms), treat cardiac diseases, anaemia.	alkaloid, flavonoid, saponin and tannin
74	*S. scabrum*	Antiperiodic, antiphlogistic, diaphoretic, diuretic, emollient, febrifuge, narcotic, purgative and sedative	Anthocyanin, glucoalkaloid,
75	*S. sparganophora*	Convalescent vegetable, tonic, fevers, Children convulsion	Alkaloids, flavonoids, steroids, glycosides, polyphenols, saponins, tannins
76	*S.campanulata*	Malaria, wounds and burns	saponin, steroid, flavonoids, glycoside, alkaloids, phenol, tannin, terpenoids, phlobatanin and antraquinone
77	*S. mombin*	Stomach ache, biliousness, inflammation, diarrhea dysentery, diuretic febrifuge	Tannins, Saponins, Flavonoids, alkaloids and phenols.
78	*S. tragacantha*	Regulation of menstrual periods.	β-bisabolol, geranylacetone hexahydrofarnesylacetone, viridiflorol and 1,8-cineole
79	*T. triangulare*	As tonic, aid digestion, diarrhea, peptic ulcers, inflammations, dysentery, hepatic ailments, measles, polyuria, edema, diabetes, cancer, schistosomiasis, anemia and high blood pressure	flavonoids (kaempferol), alkaloids, polyphenols, tannins, saponins (steroidal saponins, saponin glycosides), steroids (glucopyranosyl steroids, campesterol, sitosterol, stigmasterol, scotenol), cardioglycosides, allantoin, malic acid, oleanolic acid, oleanolyc acid glycoside, phaeophytins, talichlorin A.
80	*T. occidentalis*	As tonic, nutrients	saponins, tannins, essential oils, flavonoids, alkaloids
81	*T.conophorum*	Stomach disorder, high blood pressure, masticatory, thrush, antihelminth	Oxalates, phytates, tannins, saponins, alkaloids, flavonoids and terpenoids
82	*T. tetraptera*	For arthritis and other inflammatory conditions, asthma, diabetes mellitus, hypertension, and epilepsy.	Root bark: saponins and tannins. Fruit: Oleanolic acid glycosides, scopoletin, and coumarin.
83	*T. orientalis*	Convulsion, jaundice, cough	Flavanoids, tannin and phenolic compounds
84	*V. amygdalina*	As a general tonic, fevers and diabetes. Venereal diseases and for diarrhea, Therapeutic purposes. Purgative enemas, diuretic mixtures, anthelmintic preparations, parasitic skin diseases.	Saponins, cardiac glycosides, flavonoids, and sesquiterpene lactones. The major constituents include the saponin vernonin, the sesquiterpenes vernoleptin and vernodalin, and the ubiquitous flavonoid kaempferol.
85	*V.album*	Delirium, hysteria, neuralgia, nervous debility, heart tonic nin typhoid fever, urinary disorders, to lower blood pressure	Mistletoe lectins I, II and III (glycoprotein); Viscotoxin (protein); galacturonan, arabinogalactan (polysaccharides), and alkaloids.

Table 3: Methods of utilization of the identified WEPs in Ijesa Region

S/N	WEPs	Methods of Utilization
1	*A.manihot*	The immature fruits and the leaves are eaten in various ways. Fruits, fresh or sliced and dried, are used for soups, also fried in oil.
2	*A. montanus*	Leaves are sometimes cooked with vegetables or a decoction of leaves
3	*A. conyzoides*	Squeeze the leaves with a pinch of common salt and extract the juice, put 2 to 3 drop of this juice in both the nostrils once only to cure epilepsy.
4	*A. laxiflora*	Boiled leaves water is taken to treat inflammatory and infectious diseases
5	*A. boonei*	Squeeze leave and drink extract.
6	*A. congensis*	Boiled and the concoction is taken for fever
7	*A. sessilis*	The leaves are boiled and ingested to treat hypertension.
8	*A. Viridis*	Blood tonic and aid digestion.
9	*A. occidentale*	Fruit may be eaten raw or protected in jam or sweetmeat, seeds are roasted and eaten, decoction of the astringent bark given for severe diarrhea and thrush. Leaf decoction gargled for sore throat.
10	*A. nobilis*	Soak stem bark in alcohol for about 2-3 days.
11	*A. altilis*	Fruits can be eaten raw, boiled, steamed and roasted at all stages of its development. Seeds are sometimes cooked also.
12	*A. indica*	Leave, stem bark, and root are used for the treatment of malaria in the form of an aqueous decoction. The selected part is usually reduced to small sizes, placed in a suitable container with water, and set aside to macerate for a period ranging from 1 day to several weeks.
13	*B. vulgaris*	Young shoots and/or leaves are boiled and the extracted water is drunk.
14	*B. nitida*	Leave and bark are boiled with water
15	*B. sapida*	Fruit - eaten raw when fully ripe
16	*B. ferruginea*	Stem-bark are used as chew-sticks
17	*C.bonduc*	Leave is boiled with water
18	*C. barteri*	An infusion of the leaves is used as a laxative for children and to treat dizziness, also an extract of the fruit is taken as a vermifuge.
19	*C. procera*	For asthma: Mix the flower powder and *Triphala churna* in 1:4 proportions. Take one spoonful of the mixture along with honey thrice a day for forty days.
20	*C.brassii*	Leaf crushed: apply sap to sores, snakebites. Cooked as vegetable, root sewed to treat toothache, boiled to treat cough.
21	*C. papaya*	The ripe fruit is edible. A weak decoction of the leaves is taken for malaria, and the mixture with lemongrass and guava leaves is used in the treatment of hypertension. Fever: sock the unripe with 'omidun' for about 3-days and drink water.
22	*C. pentandra*	Tender leaves, buds and fruit are eaten like okra (*Abelmoschus moschatus*). Seeds can be sprouted and eaten raw or cooked in soups. A decoction of the tender shoots is used as a contraceptive. Young leaves are warmed and mixed with palm oil to be eaten as a remedy for heart problems. A decoction of the stem bark is taken to treat stomach problems, diarrhoea, gonorrhoea, oedema, fever, asthma and rickets.
23	*C. argentea*	Leaves and young shoots are cooked as vegetables.
24	*C. leptostachya*	Leaves are cooked as vegetables.
25	*C. zenkeri*	Bark decoctions are drunk to treat cough, leave are also cooked as vegetables.
26	*C. ambrosioides*	Wash in water, cut into small pieces and boiled in 2 cups of water for 20-25 minutes, this decoction is given to patients for fever, stomach disorder.
27	*C. odorata*	A decoction of the leaf is valued as a cough remedy and as an ingredient with lemongrass and guava leaves for the treatment of malaria.

28	*C. albidum*	The leaf decoction is administered for diarrhea and for stomach ache, The fruit pulp is taken by pregnant women to prevent nausea.
29	*C. capitatum*	Decoction of leave.
30	*C. micranthum*	Decoction of root for the treatment of guinea worm infestation. Also used as general tonic or morning hot beverage as a substitute for tea. Leave cooked with omidun/omi ogi and drink when cold for typhoid.
31	*C. sumatrensis*	Leaves are eaten raw or cooked.
32	*C. olitorius*	Cooked and eaten as vegetable
33	*C. rubens*	Cooked and eaten as vegetable
34	*C. klaineana*	A decoction of the leaves.
35	*C. citrates*	Squeeze plant except root and drink extract
36	*D. stramonium*	The leaf extract is an ingredient in remedies for cough and chest com-plaints. The crushed leaves or seeds are mixed with palm oil and applied to severe cases of insect
37	*D. benthamianus*	A decoction of stem barks or soaked for days, twigs are used as chewing sticks.
38	*E. chloranta*	An aqueous decoction of the plant is used for the treatment of acute enteritis and dysentery. The latex is instilled into the eye for the treatment of conjunctivitis. Liquid extract when squeezed for the treatment of coughs and asthma.
39	*E. hirta*	An aqueous decoction of the plant is used for the treatment of acute enteritis and dysentery. The treatment of coughs and asthma in the form of a liquid extract or tincture.
40	*F. exasperate*	The seeds are chewed, the peeled stem and twigs are cut into small pieces and soaked into a bottle of local gin, which is allowed to "mature" over a couple of days for drinking as an aphrodisiac.
41	*F. elastica*	Leave are cooked and eaten as vegetables, so also the bark are soaked in alcohol.
42	*G. kola*	The stem bark is used as a purgative, and the powdered bark is used for the treatment of malignant tumors. The sap is used for parasitic skin diseases. The latex (gum) is used internally for gonorrhea treatment and applied externally to fresh wounds. roots yield the favorite bitter chew sticks, The seeds are chewed as an aphrodisiac and the dried nuts for dysentery
43	*G. barbadense*	Leaves are squeezed with 7 up drink or alcohol then extract is drunk to treat fever
44	*H. madagascariensis*	The roots are either boiled or pounded and soaked in water and the extract drunk 2–3 times a day for the treatment of yaws. The leaf juice is administered orally as a vermifuge.
45	*H. indicum*	The seeds are used as soup thickeners. Edible oil is extracted from the seeds which is also used in cooking. Fruit is juicy and sweet, is eaten fresh like mango. Sometimes fermented to yield an alcoholic beverage.
46	*I.abonensis*	A mixture of the leaf decoction and lime juice is used for fever, convulsion and as an anthelmintic. The ash from the burnt leaf is also applied to guinea worm sore, believed to be able to draw out the worm, so also roasted seeds are mixed with pepper and shea butter for the treatment of guinea worm infestation.
47	*J. curcas*	Squeeze with water and drink extract.
48	*J. gossypifolia*	Bark steeped in a water or decoction of the bark.
49	*J. multifida*	Sap applied on tongue
50	*K. senegalensis*	The leaves and roots are believed to have properties that stimulate

		menstrual discharges and are also anthelmintic.
51	*L. inermis*	The leaves and roots are believed to have properties that stimulate menstrual discharges and are also anthelmintic. The root is employed in also in the treatment of hysteria and general malaise.
52	*L. cupanioides*	Whole herb is for the treatment of dysentery and as a vermifuge. Stem is chewed to fibrous brush. The fresh leaves are crushed and applied to fresh cuts to stop bleeding. The leaf juice has been used as nasal drops for headache.
53	*M.oppositifolius*	The whole herb is used for the treatment of dysentery and as a vermifuge. The stem is chewed to fibrous brush and used as chew sticks for teeth cleaning. The fresh leaves are crushed and applied to fresh cuts to stop bleeding.
54	*M.sativa*	Leaves decoction are used for the treatment of diabetes
55	*M. excels*	Extracts of the fruit and leaf (ingested orally) to be safe during pregnancy. Leaf is squeeze and drink liquid extract.
56	*M. charantia*	Squeeze leave and drink liquid extract / sock stem bark in alcohol. The leaves are used in the preparation of fever teas. A weak decoction of the stem bark is administered for the treatment of severe jaundice.
57	*M. lucida*	Squeeze leave with 7 up soft drink and drink the extract, The leaves are used in the preparation of fever teas. A weak decoction of the stem bark is administered for the treatment of severe jaundice.
58	*N. tabacum*	Leaves are squeezed after little burn, the extract is given to children for the treatment of fever
59	*O. gratissimum*	Cooked as vegetable, good for stomachic problems, also squeezed and extract are used for the treatment of pile.
60	*O. ficus*	Fruits are edible.
61	*P.biglobosa*	The locust bean is used in as a fermented food condiment for seasoning sauces and soups.
62	*P. pellucid*	Leaves are squeezed and placed on inflame skin also extract are given to treat tumors
63	*P. nigrescens*	Leaf decoction is taken as an enema to treat serious kidney problems, severe constipation to induce abortion.
64	*P. americana*	Used as spice to flavor soup. The weak decoction of the leaves and fresh fruits is used as a cough remedy. The seeds are stomachic and carminative and are indicated especially for gripping stomachaches. Incorporated in preparations for the treatment of infectious diseases. Leave extracts are applied to wounds.
65	*P. guineense*	The black berries are used as spice to flavor soup. The leaves are used to regulate the menstrual cycle and as an ingredient in remedies for female infertility. The weak decoction of the leaves and fresh fruits is used as a cough remedy.
66	*P. guajava*	The fruits are edible, and the juice is used as a refreshing drink. Its leaves are used as an ingredient in the preparation of fever teas.
67	*P. osun*	The seeds are aromatic and are used as a soup condiment. The seed fat is applied together with the reddish latex on skin diseases. The bark is pounded and drunk with palm wine for loss of appetite. The twigs are sucked to cure sores in the mouth. The root infusion is used with extracts of *Cassia occidentalis* and *guinea* grains as an anthelmintic.
68	*P. angolensis*	The seeds are aromatic and are used as a soup condiment, the bark is pounded and drunk with palm wine for loss of appetite. The twigs are sucked to cure sores in the mouth.
69	*S. acuta*	After proper wash, boil with water then drink.
70	*S. anceps*	Leaves and young stems are cooked as vegetable.
71	*S. biafrae*	Cooked as vegetable.

72	*S. americanum*	Leaves are cooked as vegetable. Leaves are also squeezed and extract applied on wound or cut. Fruits are also soaked in water and the mixture is given to chicken to drink to treat worm in children.
73	*S. macrocarpon*	Leaves are cooked as vegetables.
74	*S. scabrum*	Young shoots and leaves are blanched, boiled or stir-fried, cooked with other vegetables or added to soups.
75	*S. sparganophora*	Leaves are cooked as vegetables.
76	*S.campanulata*	Bark is chewed or may also be boiled in water, used in bathing newly born babies to heal body rashes.
77	*S. mombin*	Ripe fruits are nutritious and edible.
78	*S. tragacantha*	Cooked as vegetable or squeezed and drink extracts or usually used in wrapping pap.
79	*T. triangulare*	Leaves: Blood purifier and it aids digestion. Roots: cure for ulcer, rinse well and cook with water, then drink.
80	*T. occidentalis*	Used to flavor soups taken as general tonics and stimulants. A decoction of the roots as a bath solution for fevers and malaria. A decoction of the roots is used in jaundice. The fruits are also added as an ingredient to anticonvulsant remedies. Squeeze and drink water extract with milk as tonic
81	*T.conophorum*	Fruits are edible. Leaves are used as an ingredient in the preparation of fever teas. The leaves are also used as part of the potherb in steam treatment of malaria. A weak infusion of the leaves and tender branches is dispensed for diarrhea and as a tonic in psychiatry. Seed: cure snake bite.
82	*T. tetraptera*	The infusion of the fruits is used in as a bath solution for fevers and malaria. The stem bark extracts have been used, among other things, for gonorrhea and viral diseases and as a tonic. A decoction of the roots is also used as a bath solution for fevers and malaria. A decoction of the roots is used in jaundice.
83	*T. orientalis*	Soak stem bark with water or squeeze leave and drink extract.
84	*V. amygdalina*	An aqueous decoction of the leaves has been used for the treatment of fevers and diabetes. The dried leaves are chewed for the same purpose and used by pregnant women to check nausea. The peeled stem is used for cleaning the teeth, and the bark is administered for venereal diseases and for diarrhea. The plant is added in very minute quantities in several remedies, but it is not clear whether it is used to impart a bitter taste to the medication or is included for therapeutic purposes. The leaves are ingredients in purgative enemas, diuretic mixtures, anthelmintic preparations, and topical lotions for parasitic skin diseases.
85	*V. album*	Leaves are dried and used in making tea.

Table 4: Cultivation status of the identified WEPs

Status	**WEPs**
Cultivated	*A.montanus, A.boonei , A.sessilis, A.viridis, B. nitida, A. occidentale, B. sapida, C. argentea, C. olitorius, I.gabonensis, J. curcas, P. guajava, E. chloranta, V. amygdalina, T. triangulare, J. gossypifolia, L. cupanioides, C.brassii, C. procera ,S.campanulata, C. sumatrensis, V.album, S. macrocarpon, S. scabrum, G. barbadense, J. multifisda, N. tabacum,O. gratissimum, P. biglobosa, P. conophora, S. anceps, S. americanum, S. mombin, T. occidentalis* % of the identified species = 40%

Non cultivated	*A.conyzoides, A.nobilis, A. congensis, A. altilis, A.manihot, B. vulgaris, A. indica, A. laxiflora, B. ferruginea, C. barteri, M. excelsa ,M. lucida, C. papaya, C. pentandra, C. zenkeri, C. leptostachya, G. kola, C.odorata, C. rubens, C. micranthum, C. citratus, C. capitatum, D.stramonium, E. hirta, H. indicum, H. madagascariensis, K. senegalensis, C. ambrosioides, L. inermis, P. guineense, P. angolensis, T. tetraptera, M. charantia, C. klaineana, D. benthamianus, C.bonduc, C.albidum, A.manihot, F. exasperata, S. biafrae, M. oppositifolius, M. sativa, O. ficus, P. pellucida,P. nigrescens, P. americana, P. osun, S. acuta, S. sparganophora, S. tragacantha, T. orientalis* % of the identified species = 60%

Table 5: Checklist of the identified WEPs with economic value in Ijesa Region

Status	**WEPs**
Economic value	*A.boonei , A. Viridis, A. occidentale, A. nobilis, A. altilis, A. indica, A. manihot, B. ferruginea , C. procera, C. papaya, C. pentandra, C. argentea, C. leptostachya, C. zenkeri, C.albidum, C.olitorius, C. rubens, C.klaineana, C. barteri ,C. citratus, C. sumatrensis, E. chloranta , E. hirta, F.elastica, G.kola ,G. barbadense, C. bonduc, H.madagascariensis , I. gabonensis, L. cupanioides, L. inermis, M. oppositifolius, M. lucida, N.tabacum, P. americana, P. guineense, P. osun, P. angolensis, S. biafrae, S. americanum, S. macrocarpon, S. mombin, S. campanulata, T. triangulare, T. occidentalis, T. tetraptera, V. amygdalina, M. sativa, K. senegalensis, P. biglobosa, P. conophora, V.album* % of the identified species = 61%
No economic value	*A.montanus , A. conyzoides, A. laxiflora, A.congensis, A. sessilis, B. vulgaris, B. nitida, B.sapida, C.ambrosioides, C.odorata, C. capitatum, C.micranthum, D. benthamianus, F. exasperate, H. indicum, J. curcas, J. gossypifolia, J.multifida, M. excels, M.*charantia*, O. gratissimum, O. ficus, P. pellucida, P. nigrescens, P. guajava, S. acuta, S. anceps , S. scabrum, S. sparganophora, S. tragacantha, T. orientalis, D. stramonium, C. brassii* % of the identified species = 39%

DISCUSSION

The study revealed that diverse wild edible species abound in the study area. Ijesa region is located in the rainforest vegetation of western Nigeria. The vegetation is rich in flora species. Such vegetation, according to Addis *et al.,* (2005) permitted the growing of a variety of wild food plants**.** In this study, 85 WEPs were identified in the study area. Thus, the occurrence of WEPs in the region is a form of insurance to food security. Getahun (1973) stressed the importance of WEPs in times of famine and other hardships. Study by Bharucha and Pretty (2010) asserted that wild plants and animals constituted a significant proportion of the global food basket.

Recently Petropoulos *et al*. (2018) opined that consumers now demonstrate preferences for diversified diets, most especially the WEPs as they served dual purposes of diet complements also as healthy and functional foods for targeted conditions. This tends to increase the demand for these species. Respondents in this study were versed on the ethno-medicinal importance of the identified WEPs. This observation aligned with the assertion of Mahapatra, and Panda (2012) as well as Kayode and Akinluyi (2016) that local communities have rich traditional knowledge related to wise use of WEPs. The secondary information used in this study indicated that WEPs were nutrient rich plants. Sundriyal and Sundriyal (2001, 2004) asserted that the crude fat and crude fibre content in WEPs were higher when compared to other commercial fruits and their macro-elements were also within the tolerable limit. Similarly, Bharucha and Pretty (2010) reported that biochemical analysis of some frequently harvested plant parts shows that WEPs are good source of natural protein, fibre, carbohydrates, minerals and vitamins which are essential for balancing dietary deficiency.

Results from this study revealed that the methods of utilization of the identified WEPs were simple. Sundriyal and Sundriyal (2004) and Seal (2011) reported that most of the WEPs' plant parts are consumed in raw form and does not require sophisticated processing system. The results obtained in this study also revealed that most of the identified WEPs were not cultivated in the study area. Thus respondents sourced them from the wild. Tsering *et al*. (2017) opined that wildling collections made the WEPs vulnerable to free accessibility and availability. This hinders their market potentials and creates considerable pressure on the available individuals.

Over 60% of the identified WEPs were presently of immense economic values in the study area. Thus the domestication of these nutrient rich plants and their commercialization have been suggested by Sundriyal and Sundriyal (2004), Bharucha and Pretty (2010) and Seal (2011) to have the potentials to improve the poor economic condition and food insecurity of the rural people. Tsering *et al.* (2017) asserted that awareness campaign on the commercial significance of such valuable botanical resources is likely to change the current demand and supply trends of WEPs in the local and regional markets. Previous suggestion by Kayode and Ogunleye (2008) that botanical gardens should be set up at every senatorial zone in the country should be implemented. Most of the identified WEPs could be cultivated in these gardens.

In conclusion, WEPs provide greater benefits to vulnerable populations being low-input, low cost option for increasing nutrition and decreasing the need to spend limited cash resources on food and medicine (Shumsky *et al.,* 2014). They served dual purposes of diet complements also as healthy and functional foods for targeted conditions. This tends to increase the demand for them (Petropoulos *et al*. 2018).

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