

Research Article

Paddy Weeds as a Complementary and Alternative Medicine for Health and Illness

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Abstract

The thirst for search of weeds as sources of herbal medicine is on high peak due to low cost, high expensive cost of modern medicine, poverty invading the population and worst the haphazard side effect of modern medicine on health. Seventy two (72) species of weed were distributed among sixteen (16) families and fifty (50) genera, forty seven native and twenty five exotic species were inventoried (Table 1) Random vegetation surveys were used to conduct the study in 2020. Plants observed were photographed, geo-referenced collected and organized to be herbarium specimen. Plants identification were done using checklist, weed manuals and standard key and later set for by means of Angiosperm Phylogeny Group (APG) classification system. Component features in the study were; scientific and family names, common English names and Hausa names, native/exotic species and medicinal values, the information on the medicinal values on species part used in herbal medicine were obtained through literature and oral interview with various sources. The study investigates the medicinal values of paddy weeds in Usur. The result is presented in a tabular form showing the parts used, the roots, leaves, stems, flowers, bark and whole plant for curing different diseases and illness such as wound, typhoid, ulcer, pile, syphilis, and cancer etc., the parts are prepared or applied in the body or consumed as food or as a drinks. Weeds such as *Ageratum conyzoides* (L) cure gonorrhea; *Indigofera hirsuta* (L) treat epilepsy; *Cynodon dactylon* removes toxins and *Amaranthus spinosus* (L) treats kidney diseases. Majority of weeds belongs to the important families their distribution shows Poaceae, Asteraceae, Cyperaceae, Malvaceae, Fabaceae, Amaranthaceae, Lamiaceae and Rubiaceae, Cleomaceae, Commelinaceae, Euphorbiaceae and Solanaceae, Araceae, Onagraceae, Portulacaceae, and Sphenocleaceae respectively.

Keywords

Antiviral, Flora, Herbal, Infertility, Medicinal, Rice, Species, Traditional

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1. Introduction

Health and illness is the process which involves the absence of disease (physical or mental weakness) or impairment in human body [89]. Similarly the use of weeds as herbal medicine in treatment of disease and other ailments cannot be overemphasized, the extract from herbs were used in many forms such as tea, pills, soup, food and powder to treat chronic and acute diseases including cardiovascular disease, prostrate, typhoid and malaria, mental disorder, depression, inflammation and to boost immune system. Also, World Health Organization (WHO) [1] reported that herbal traditional medicine is the total sum of whole knowledge and practices whether explainable or not which are used in prevention, diagnosis, and elimination of physically, mentally, socially, and spiritually imbalance, which have confidence on practical experiences and observation from generation to generation. Surabhi *et al.* [2] reported that about 25% of medications administered to patients globally were manufactured using plant materials. Consequently, the demand for herbal medicinal plants is high in both developed and developing countries as people perception of how safe, side effect free, efficient, inexpensive and non-narcotic of natural medicines [2]. As the demand for weed for medicinal uses increases, therefore, weeds may continue to remain the economical plant alternative to trees for medicine preparation [3]. The value of weeds received low attention as sources of traditional medicine, this brings the fact that tropical forest is patronized as the main sources of traditional medicine due to its strength of biodiversity [3], however, local people looking herbal remedies for various ailments which are either too expensive or ineffectively catered for by orthodox medicine usually seek resources from the community paddy field or reserves areas for sourcing parts or products of medicinal plant to cure disease and ailments [3]. Abiodun and Tunji [3] opined that medicinally plants continue to remain the ultimate sources of medicine to cure diseases affecting mankind. Devi *et al.* [4] reported WHO estimates about 80% of people on earth will make use of herbal medicine in some capacity for medical treatments, this is because the herbal medicine are safe, no side effects, inexpensive and are available. Nowadays herbal medicines are attractive and more popular around the world [5]. In Africa, traditional healing system are flourishing and these may continue to strive newly plant species including invasive and native species into their pharmacopoeias, also there is evidence to support the hypothesis that weeds have high bioactive chemicals that are promise for drugs discovery [6, 7]. Moreover, weeds as undesirable plants which are grown on soil with other crops drained plant nutrient, water, light and space for their growth which eventually result low yields, in addition most of these weeds are normally used by local people in the community for therapy [8]. Dhanan [9] itemized the ethnomedicinal weed properties from paddy fields, traditional herbal drugs are very effective and less expensive

in curing of diseases. WHO [10] reported that herbal drugs are extremely valued due to their potentials characteristics such as less possibilities of adverse effects, easy access and cost effective. The preparation of ayurveda and siddha as herbal traditional medicine for curing disease is composed of about 90% the whole plants or some part of the plants such as seeds, fruits, and flower, leaves, Stem, root, and rhizome, equally, secondary metabolites like gum, resin and latex have been used as a drug [11, 12]. Plants actually are significant importance for decades to man and irreplaceable in the life of any living organism on earth. Evidence has shown that man has always used plants to cure various ailments and diseases [13]. For example *Eucalyptus* species, *Azadirachta indica*, *Stereospermum kunthianum*, *Mangifera indica* and *Cinchona officinale* (from which quinine is obtained) are variously used in treatment of malaria [14]. Nowadays, formulations of pharmaceutical medicine from plants are still extensively used in synthetic drugs industry [15]. The healing properties of plants by traditional medicinal practitioner is based on the presence of phytochemicals found naturally in plants and these chemicals vary within plant species [16], chemicals obtained from plants are used to control and cure diseases, but plants have become important topics of study with respect to control of disease agents or vectors, because the over dependence on chemical substances has been found to be deleterious to man's health and environment [17].

2. Materials and Methods

2.1. Description of Study Area

Gashu'a is one of the largest and most developed towns in Yobe State in the northeastern Nigeria. Since 1976, it has been headquarters of the Bade Local Government. It is located at 12°52'18"N longitude and 10°58'47"E latitude with an elevation of 335 meter above sea level (masl) (Figure 1). The experiment was conducted in Usur paddy field, six (6) kilometers from Gashu'a town. Bade has an area of 772 Km² with a population of about 139,804 [18, 20]. Islam is the widely practiced religion, important festivals includes fishing festival in Gogaram (Myeyam-gamgam), rivers and tributaries which include the Yobe river, Hadejia and the Jama'are rivers. Economic crops such as millet, rice, beans, sorghum, corn and groundnut grown in fairly large quantities, the place is rich in potash and sizeable population engages in trade, cattle and sheep rearing and selling [20].

2.1.1. The Vegetation Type

Bello *et al.* [20] reported that vegetation of study area is sparse vegetation, the majority of the vegetation type in the study area is Sudan Savannah with scattered Acacia trees, also an area of Sahel Savannah are found consisting of sandy soils

and thorn trees located far North [19, 20] Plants species includes short trees varieties with about 5-10m tall e.g. *Anogeissus leiocarpa*, *Acacia seyal*, *Balanites aegyptica*, *Faidherbia albida* and grasses *Cenchrus biflorus*, *Heteropogon contortus* [20, 19].

2.1.2. The Climate Type

Climate of the study area is characterized with high temperature and seasonal rainfall. The minimum and maximum temperature range from 10°-20 °C in the month of December-January, and 34°-40 °C in March-May respectively similarly the area experience maximum annual rainfall 500-1000mm and minimum rainfall around 300-500mm per

annum and is unimodal and last mostly from June to September, while the dry season starts from October to May [20-22].

2.1.3. The Soil Type

According to Alhassan *et al.* [23] reported that the soil type of Bade is sandy loamy, high in bulk density, low porosity, weak in structure and very low in organic content. The physical properties of the soil are; Sand 619.43g Kg⁻¹, Silt 321.83g Kg⁻¹, Clay 58.73 Kg⁻¹, texture content SL, bulk density 1.64 Mg m⁻³ and Porosity 38.33%, mean weight diameter 0.78mm and soil organic matter 1.48g Kg⁻¹, the soil of the area is lixisols [20, 23].

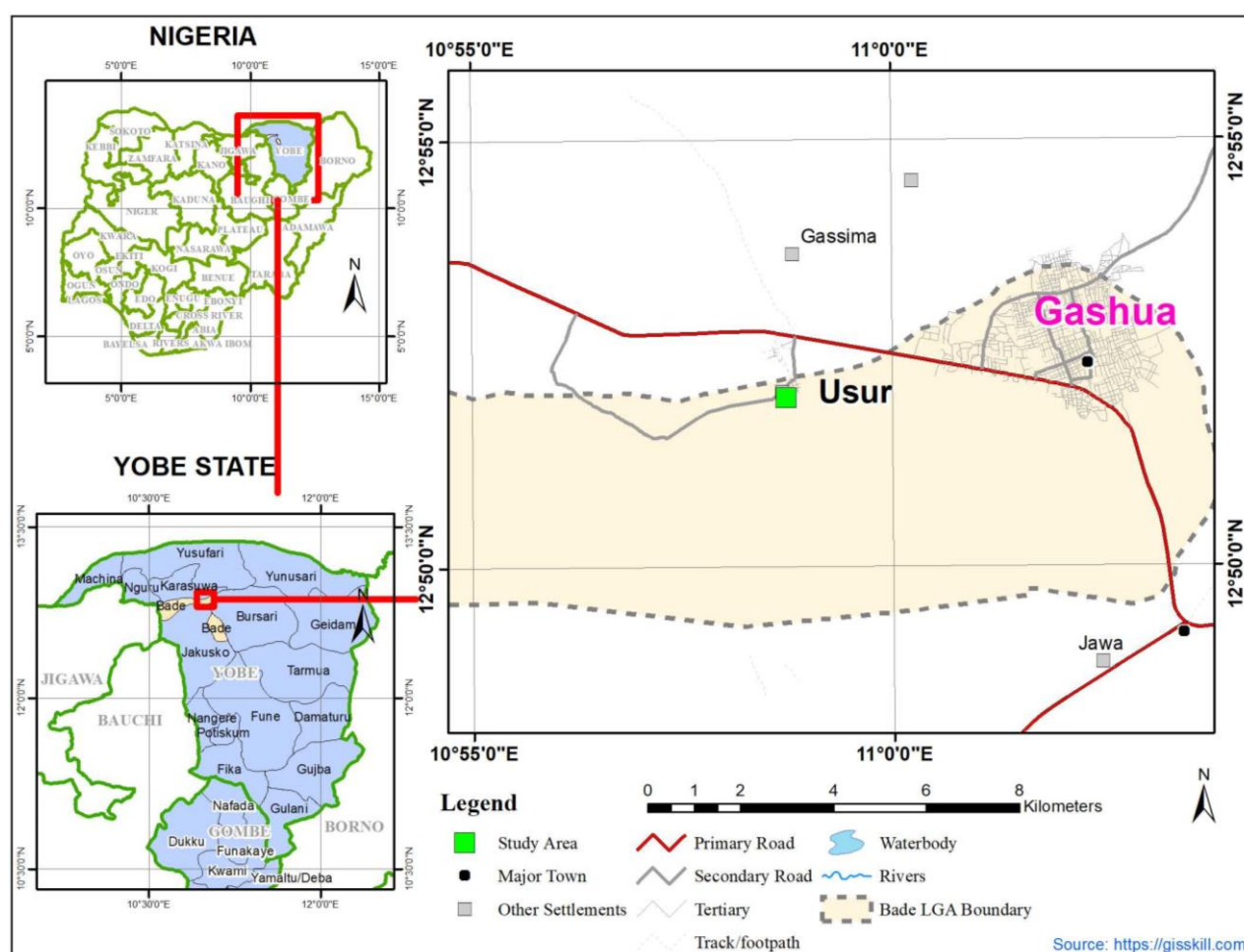


Figure 1. Map Showing study site.

2.2. Instrument and Materials Used for Data Collection

Bello *et al.* [20] ascertained that the best instruments to locate geo points in vegetation survey is Garmin eTrex 10 worldwide handheld geo-position system (GPS) with navigator model number 010-00970-00 for taking the position of

land, other instruments include plant press, newspapers, 100m tape, magnifying glass A4 paper, pencil, hand trowel and mapping sticks and camera.

2.3. Method Used for Data Collection

The method used for data collection for the research was random vegetation survey [20, 24, 25]. Quadrant 1m x 1m

was used within the study site according to the methods of [26]. Ten (10) hectares of rice farm were sampled. Specimens were collected from June-December, 2020. Each hectare was divided into 25 by 25m plot making five sampling site within hectare, weeds identification was carried out according to [27] descriptive and quantitative methods were used to analyzed data.

2.4. Interview with Local Traditional Healers

Interview was conducted through verbal conversations with local traditional healers (trado-medical) and the farmers in the community with those that had practical knowledge and experience of plants in medicine with the guide of informants in 2020.

2.5. Identification of Specimen

Weed species identification in paddy field was carry out

using external morphological characteristics such as fruits, flowers, leaves, and stem also checklist, weed flora and manuals help in identification [28, 29]. Weed species collected were compared with herbarium specimen at Gombe State University and voucher numbers were issued. The identified specimens were represented alphabetically base on their scientific names, families, genera, common names, native/exotic and medicinal uses.

2.6. Data Analysis

The identified weed species were organized using classification established in the Angiosperm Phylogeny Group (APG), the classifications of specimen were based on orders and families of flowering plants and African Plant Data Base [30, 31]. All identified fresh and plant pressed specimens were used to conduct an oral interview with traditional medicine vendors and local community to acquaint us with their medicinal uses.

3. Results

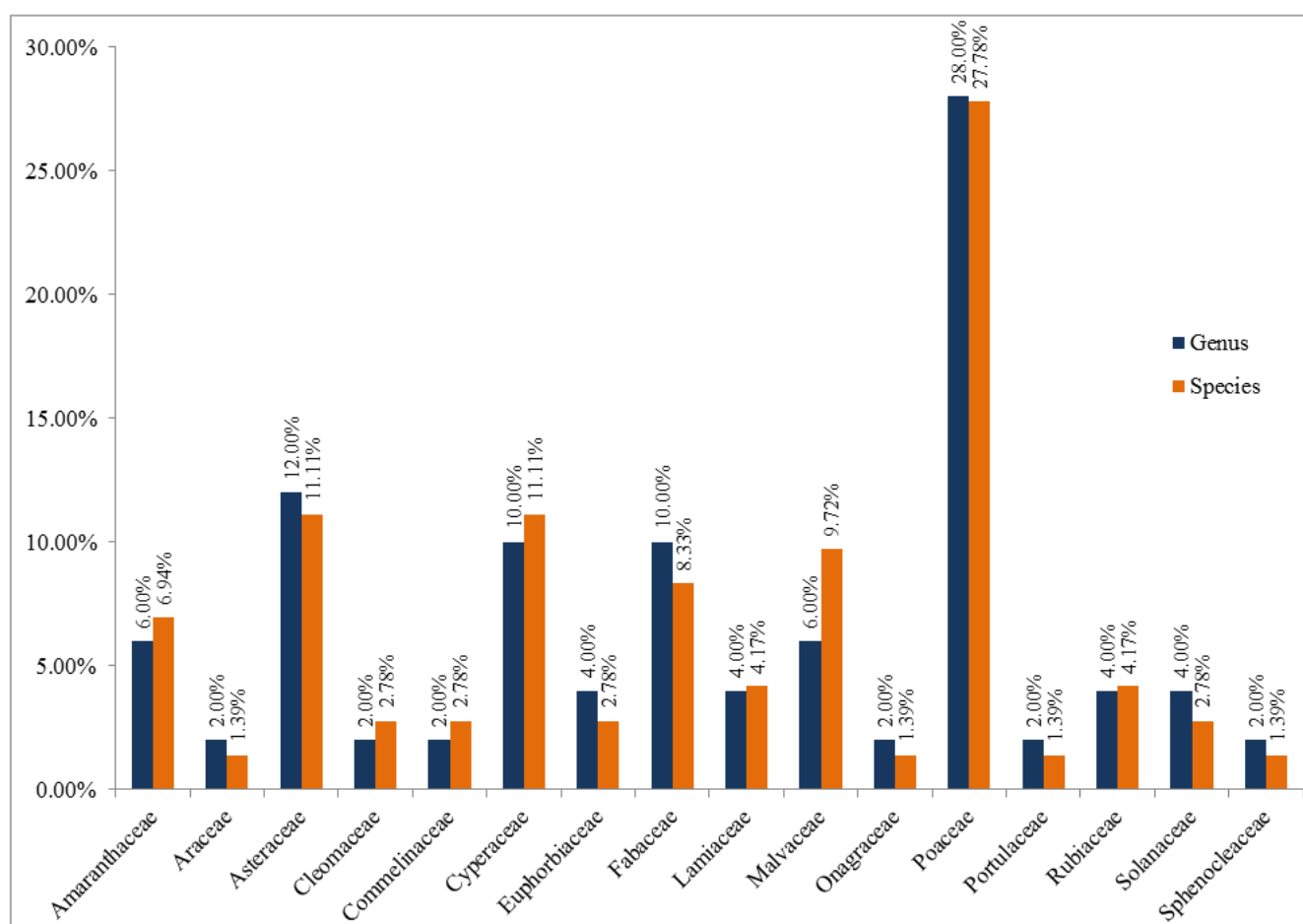


Figure 2. Distributions of identified paddy weeds families based on their Genus and Species.

Table 1. Showing Weed Species of paddy identified and the medicinal uses in Usur Bade Local Government Area, Yobe State, Nigeria.

S/N	Family	Genus	Species/ (Native/Exotic)	Common Names	Hausa Names	Parts use	Medicinal Uses of weeds
1	Amaranthaceae (Broad-Leaves)	<i>Alternanthera</i>	<i>Alternanthera ficoidea</i> (L.) P.Beauv. (Exotic)	Joseph coat	Chiyawan zomo	WP	Diuretic, antiviral, tonic, laxative, cure dysuria, hepatitis medicinal oil as kaja mouth wash [oral interview], [32].
2		<i>Alternanthera</i>	<i>Alternanthera sessilis</i> (Linn.) DC (Exotic)	Sessile joy	Mai kai dubuu	L., WP	Asthma, lung infection, liver disease, snake antidote, asthma, antiseptic, hemorrhage, pile, leprosy, dysentery, fever, night blindness [3, 8, 9, 11, 33].
3		<i>Amaranthus</i>	<i>Amaranthus graecizans</i> (L.) (Native)	Spreading pig weed	Namijin gaasayaa, Rukubu	WP	Inflammatory, emollient leaf treat scorpion stings, snake bites, edema, ulcer, diarrhoea, swelling of mouth and throat [34].
4		<i>Amaranthus</i>	<i>Amaranthus spinosus</i> (Linn.) (Exotic)	Spiny pig weed	Namijin gaasayaa;	L., R., S, WP.	Jaundice, kidney diseases, anti-r/microbial malaria, eczema, skin/ear-trouble, arthritis, worms [3, 8, 29].
5		<i>Gomphrena</i>	<i>Gomphrena celosoides</i> Mart. (Exotic)	Prostrate globe Amaranth	Goga masi	WP	Treat Infertility, liver disease is antifungal and anti-bacteria [35], [Oral interview]
6	Araceae (Broad-Leaves)	<i>Peltandra</i>	<i>Peltandra virginica</i> (L.) Schott (Exotic)	Arrow-arum	Duuman rafi Gwaandaii	R., St., S.	Stabilize sediment and toxic in the body, it also cure kidney failure [oral interview]
7	Asteraceae (Broad-Leaves)	<i>Ageratum</i>	<i>Ageratum conyzoides</i> Linn (Exotic)	Chick weed	Bambani	L St., Fl. WP.	Inflammation, wound, burns, kidney disease, fever, antipyretic, Gonorrhoea, ulcer, diarrhoea, Vaginal cleansing [3, 29, 36].
8		<i>Blainvillea</i>	<i>Blainvillea gayana</i> cass (Exotic)	Blainvillea			Malaria, headache [oral interview]
9		<i>Chrysanthemum</i>	<i>Chrysanthemum indicum</i> Linn. (Exotic)	African wild daisy	Rariyar kasa	L., Fl. WP.	Plant is antiphlogistic, blood tonic, fever, jaundice, heart trouble, depurative febrifuge, detoxifying, cure migraine, antibacterial, skin furuncle & hypertension [37].
10		<i>Eclipta</i>	<i>Eclipta alba</i> (L.) Hassk. (Exotic)	False daisy	Rimin sauro	R., L., WP.	Cures eye diseases; treat hair problems, it cures Intestinal bleeding, diarrhoea dental diseases, leprosy, worm, purgative and anaemia [11].
11		<i>Eclipta</i>	<i>Eclipta prostrata</i> (L.) L (Exotic)	False daisy	Rimin sauro	L.	& catarrh, jaundice, convulsion, elephantiasis, [29, 38].
12		<i>Lactuca</i>	<i>Lactuca virosa</i> L. (Exotic)	Wild lettuce	Nonokwarai	WP	Infertility, yaws, arthritis, skin disease sedative, analgesic [oral interview]
13		<i>Vernonia</i>	<i>Vernonia ambigua</i> Kotschy&peyr (Native)	Iron weed	Taba-Taba or Tattaba	R, St., L	Anti-inflammatory, infertility, antileishmanial, antimicrobial schistosomiasis anti-plasmodia anticancer viral and venereal diseases [36, 39].
14		<i>Vernonia</i>	<i>Vernonia perrottetii</i> Sch. Bip. Ex. Walp (Native)	Iron weed	Burzu	L.	Anti-inflammatory, antileishmanial, antimicrobial schistosomiasis anti-plasmodia Anticancer [39].
15	Cleomaceae	<i>Cleome</i>	<i>Cleome gynan-</i>	African cab-	Gaasayaa	WP	Cures fevers, pile, headache, rheumatism,

S/N	Family	Genus	Species/ (Native/Exotic)	Common Names	Hausa Names	Parts use	Medicinal Uses of weeds
	(Broad-leave s)		<i>dra</i> Linn. (Native)	bage			& scorpion bite [13, 39], [oral interview].
16		<i>Cleome</i>	<i>Cleome viscosa</i> Linn. (Native)	Spider flower	Di-yar-unguwa gasiyaa	L, S.	Treat wounds and ulcers, cure ear disease, liver, pimples, inflammation [3, 11].
17	Commelinaceae (Broad-leave s)	<i>Commelina</i>	<i>Commelina benghalensis</i> (L.) (Native)	Benghal day-flower	Balaasa, Balasana; Bulabula;	WP	Prevent blood bleeding, cures fever, rabies, leprosy, ophthalmic, epilepsy, diuretic, snake bites, skin disease, nervous system, Sore throat, burns [11, 29].
18		<i>Commelina</i>	<i>Commelina diffusa</i> Burm. F (Native)	Spreading day flower	Balaasa, Balaasaya	WP	Yellow fever, eyewash, itching, oedema, gonorrhoea, diabetic, menstrual pain [29, 38, 40].
19	Cyperaceae (Sedges)	<i>Cyperus</i> .	<i>Cyperus esculentus</i> Linn. (Native)	Yellow nut-sedge	Ayaa (Monier <i>et. al</i> 2016)	WP, L.	Aphrodisiac, diuretic, indigestion contraceptive, stimulant, tonic, flatulence, diarrhoea, dysentery, menstrual discharge [29, 38].
20		<i>Cyperus</i>	<i>Cyperus iria</i> Linn. (Native)	Rice field flatsedge	Aya-ayaa	WP	Astringent, febrifuge, stimulant, tonic, stomachic amenorrhoea, rheumatism, menstruation [oral interview].
21		<i>Cyperus</i>	<i>Cyperus rotundus</i> Linn. (Native)	Nut grass	Ayaa-ayaa; Jiji; gwaigwaya	R, tuber WP	Dysentery, epilepsy, fever, diabetes, bowel disorder, pyresis inflammation, diarrhoea, cholera, antibacterial, rheumatoid, [8, 4, 42].
22		<i>Fimbristylis</i>	<i>Fimbristylis dichotoma</i> (L.) Vahl (Native)	Forked fimbry	Geemun beeraa; Ri-idin tuujii	L, Rh., R.	Anti-inflammatory, antidiarrheal, dysentery, antioxidant, aphrodisiac [43], [oral interview].
23		<i>Kyllinga</i>	<i>Kyllinga erecta</i> Schumach. (Native)	Spike sedge	Ayaa-ayaa, Turare	Rh., S, R, WP	Analgesic, retain placenta, malaria, whooping cough, Aromatic, skin disease, diuretic [35].
24		<i>Kyllinga</i>	<i>Kyllinga squamulata</i> Thonn. ex Vahl (Native)	Kyllinga nemoralis	Ayaa-ayaa, Turare	R, St., Rh.	Analgesic, antimalarial, Roots as fumigant, whooping cough [29], [oral interview]
25		<i>Rhychospora</i>	<i>Rhychospora corymbosa</i> (L.) Britton. (Native)	Golden beak sedge	Kudunduriya	L., St., WP	Abdominal pain, colic [29] Crushed decoction were used to treat sickle cell [oral interview], [44].
26		<i>Schoenoplectus</i>	<i>Schoenoplectus senegalensis</i> (Steud.) (Native)	Bull rush	Gudun bijimi	St, L	Use to stop bleeding, treat snake bite and treat abscesses [oral interview]
27	Euphorbiaceae (Broad-Leaves)	<i>Euphorbia</i>	<i>Euphorbia hirta</i> Linn. (Exotic)	Asthma plant	Nonon kurchiya	Milky juice, L, WP	Asthma, cough, eye & lung infection, & venereal disease. Antibiotic, purgative dysentery, diarrhoea, stomach-ache [3, 11, 29, 38]
28		<i>Phallantus</i>	<i>Phallantus amarus</i> Schum & Thonn exotic	Gale of the wind	Geron-tsunts ayee	WP	Jaundice, insomnia, antimicrobials, fevers, urinary & skin disease, worms [29, 38].
29	Fabaceae: Papilionoideae (Broad-Leaves)	<i>Aeschynomene</i>	<i>Aeschynomene indica</i> Linn. (Native)	Budda pea	Fidilin kanaawa	WP	Wound healing, birth control, and used to treat urinary tract infection, hepatitis [oral interview]

S/N	Family	Genus	Species/ (Na- tive/Exotic)	Common Names	Hausa Names	Parts use	Medicinal Uses of weeds
e)							
30	Fabaceae: Caesalpin- iodeae	<i>Chamaecrista</i>	<i>Chamaecrista</i> <i>mimosoides</i> (L.) Greene (Native)	Japaneese tea	Bakiskis, Balsama, Balasa, B.	L, R.	Pain-killers, ear/eye treatments, pulmonary troubles, laxatives, dysentery, lactation stimulants, antidotes, venomous stings, epilepsy, convulsions [oral interview]
31	Fabaceae: Papili- onoideae	<i>Crotalaria</i> (E)	<i>Crotalaria retusa</i> Linn. (Exotic)	Devil bean or Rattle weed	Birana	WP	Cure scabies, fevers, help in food digestion, cure dysentery, flatulence, liver, treat worms cure cancer purgative [29], [oral interview].
32	Fabaceae: Papili- onoideae	<i>Indigofera</i> (N)	<i>Indigofera hir- suta</i> (L.) (Native)	Hairy indigo	Aniyar ma- komiya	WP	Cough, sedative, epilepsy and liver disease also convulsion in infants, poison, kidney disease and spleen enlargement and cerebral disorder [29].
33	Fabaceae: Caesalpin- iodeae	<i>Senna</i>	<i>Senna obtusifolia</i> (L.) (Exotic)	Sickle pod	Ubulo, Tafasa	L, S, R.	Laxative, skin infections, sores, ulcers, insect bites. Anthelmintic, vomiting and stomach-ache [45].
34	Fabaceae: Caesalpin- iodeae	<i>Senna</i>	<i>Senna occiden- talis</i> (L.) (Exotic)	Coffee senna	Tafasaa, Majanfari, Rai-dore	L, St., R, S, WP	Mental disorder, analgesic, rheumatism, elephantiasis, burns, fever, oedema worms, hypertension, neuralgia, backache, stomach ache, dysentery [29].
35	Lamiaceae (Broad-leave s)	<i>Leucas</i>	<i>Leucas martini- censis</i> (Jacq.) Ait. f. (Native)	Wild tea	Daidoyar gona, kanbarawo	L, R.	Snake bite antidote, epilepsy [38], [oral interview]
36		<i>Leucas</i>	<i>Leucas cephalo- tes</i> (Roth) Spreng. (Exotic)	Guma	Dandoyar gona, sara- kuwar sauro	Fl, L, WP	Ayurvedic herb, cure liver disorder, jaundice, asthma, cough, cold, allergic, snake bite and cancer [oral interview], [46].
37		<i>Ocimum</i>	<i>Ocimum gratis- simum</i> Linn. (Native)	African basil	Daidoya, Daidoya ta gida	WP	Lumbago, stomach-ache conjunctivitis, wounds, antiseptic, rheumatic pains, fever antimicrobial, anthelmintic [29].
38	Malvaceae (Broad-leave s)	<i>Corchorus</i>	<i>Corchorus aes- tuans</i> (L.) (Na- tive)	Mallow jute	Laalo	WP	Headache, seed as tonic, carminative and febrifuge, pneumonia [47, 48].
39		<i>Corchorus</i>	<i>Corchorus olito- rius</i> (L.) (Native)	Jews mallow	Laalo	WP	Fevers, liver, tumors, cancer, pile, skin, digestive disorder, febrifuge, blood purifier, gonorrhoea, malnutrition [11, 29].
40		<i>Corchorus</i>	<i>Corchorus tri- dens</i> (L.) (Na- tive)	Jute mallow	Laalo	WP	Antioxidant, therapeutic to ameliorate stress [oral interview]
41		<i>Sida</i>	<i>Sida acuta</i> Burm f. (Native)	Wire weed	Garmani kaka namijin hankufa	L St, R, Shoot,	Kidney & blood infection, malaria, liver disease, bites, worms, ulcer, pile, urinary, debility, nervous disease, astringent, anti-pyretic, stomachache [29].
41		<i>Sida</i>	<i>Sida cordifolia</i> (L.) (Native)	Flannel weed	Farar hankufa, kardafi	L, R, St., WP	Diarrhoea, micturition, leucorrhoea, asthma, gonorrhoea, worms, fracture [8, 11].
42		<i>Sida</i>	<i>Sida rhombifolia</i> (L.) (Native)	Arrow leaf sida	Faskara saiwo	L, R, St. F, WP	Relief swelling, headache, roots treat rheumatism, cold, kidney and liver disorders diarrhoea [oral interview], [8, 49].
44		<i>Waltheria</i>	<i>Waltheria indica</i>	Sleepy	Hankofa	L, S,	Analgesic, anti-inflammatory, cancer anti-

S/N	Family	Genus	Species/ (Native/Exotic)	Common Names	Hausa Names	Parts use	Medicinal Uses of weeds
			L.. (Exotic)	Mornings		WP	viral, cough, asthma, toothache, dysentery [oral interview].
45	Onagraceae (Broad-Leaves)	<i>Ludwigia</i>	<i>Ludwigia hys-sopifolia</i> (G. Don) Excell (Exotic)	Seed box	Lallen bal-bela	R, L	Leucorrhoea, jaundice, flatulence, spitting of blood, dysentery diarrhoea, syphilis, enteritis, syphilis [50-52].
46	Poaceae (Grass)	<i>Brachiaria</i>	<i>Brachiaria fal-cifera</i> (Trin.) Stapf (Exotic)	Signal grass	Garaji, Makarin fako	L	It cure headache and improved soil fertility [oral interview].
47		<i>Brachiaria</i>	<i>Brachiaria lata</i> (Schumach) C. E, Hubb. (Native)	Signal grass	Guraji Aluwar kwadi;	S	Seed are use food in Nigeria; indicator of soil fertility [oral interview].
48		<i>Cenchrus</i>	<i>Cenchrus biflorus</i> Roxb. (Native)	Hedgehog grass	Karangiya	YSh.	Anti-asthmatic, roots is ingredient of aphrodisiac, fruit are diuretic and pectoral, antioxidant, anticancer, anti-tuberculosis, antifungal [oral interview].
49		<i>Chloris</i>	<i>Chloris pilosa</i> Schumach. (Native)	Windmill grass	Kafar fakara, kafar gauraka	WP	Treat rheumatism, juice serves as antibacterial and antimicrobial treat skin disorder, cure diabetes [oral interview], [53].
50		<i>Cynodon</i>	<i>Cynodon dactylon</i> (Linn.) pers. (Native)	Bahamas grass (Balogun, 2015)	Kirikirii, Taja-maza (Roger, 2007)	Rh, WP	Nose bleeds, Fainting, removal of toxic from Skin, sprains, bone fracture, food poison. Diuretic, laxative, demulcent, cardiac tonic, dropsy, inflammation of urethra. Anti-arthritis, dysentery [8, 11, 29, 53].
51		<i>Dactyloctenium</i>	<i>Dactyloctenium aegyptium</i> (L.) P. Beauv. (Native)	Egyptian Crow foot grass	Gude-gude,	WP	Whole plant is use in decoction to remedy lumbago, leave mixed with cajanus cajan accelerate childbirth remedy of dysentery [oral interview].
52		<i>Digitaria</i>	<i>Digitaria horizontalis</i> Wild (Native)	Crab grass	Karanin dawaki	WP	Treat and cured diabetes and typhoid also is good antibiotic medication [oral interview]
53		<i>Echinochloa</i>	<i>Echinochloa colona</i> Linn. Link (Native)	Jungle rice	Sabe	R, L, WP	Cure Spleen and haemorrhage problem and is good in healing of wounds, and antimicrobial [54].
54		<i>Echinochloa</i>	<i>Echinochloa crusgali</i> (L.) P. Beauv (Exotic)	Barnyard grass	Sabe	WP	Cure carbuncles, haemorrhages, sores, spleens trouble and cancer [55].
55		<i>Eleusine</i>	<i>Eleusine indica</i> (L.) Gaertn (Native)	Goose grass	Tuuji	R, L.	Diuretic, anti-oxidant, anti-dysenteric, anti-arthritis, diarrhoea, menstruation, ringworm [29].
56		<i>Eragrostis</i>	<i>Eragrostis ciliaris</i> (L) (Native)	Love grass	Tsintsiyaa, Komayya	L, F, S, WP	Promote healing in burns and wounds, Treat stomach pain, and whitlows [Oral interview]
57		<i>Eragrostis</i>	<i>Eragrostis tenella</i> (Linn.) (Native)	Japanese love grass	Tsintsiyaa, Kamayya.	Fl.	Rheumatic pain, antioxidant, grains nutritious during famine conception [35], [oral interview].
58		<i>Eragrostis</i>	<i>Eragrostis tremula</i> (Native)	Annual love grass	Burburwa, Hansta-hansa, Komayya	WP, L.	Medicinal plant in memory enhancement [56].

S/N	Family	Genus	Species/ (Native/Exotic)	Common Names	Hausa Names	Parts use	Medicinal Uses of weeds
59		<i>Heteropogon</i>	<i>Heteropogon contortus</i> (L.) (Native)	Spear grass	Silka, Tsika	WP	Antibacterial, Zulu of south Africa use extract to treat wounds toothache Blood relax for horses [oral interview], [57].
60		<i>Paspalum</i>	<i>Paspalum scrobiculatum</i> (Linn) (Native)	Kodo millet	Tumbin jaki	WP.	Cure pile, menstrual disorder [oral interview], [35].
61		<i>Pennisetum</i>	<i>Pennisetum pedicellatum</i> (Native)	Fountain grass Desho grass,	Daura, kaafii-riimii, Hura	L, R	Cure mumps and wounds, and stop bleeding of gums [oral interview], [35].
62		<i>Pennisetum</i>	<i>Pennisetum polystachion</i> (Exotic)	Foxtail, Feather Mission grass	Hura, kaafii-riimii (Roger, 2007)	R, L	Cure earache, conjunctivitis and sores it also heal wounds [29].
63		<i>Polypogon</i>	<i>Polypogon monspeliensis</i> (L.) (Exotic)	Annual beard grass	Gamba	WP	Health palpitation, eclipses [58], [oral interview]
64		<i>Oryza</i>	<i>Oryza barthii</i> A. Chev (Native)	African wild rice	Shinkafar – tafki, Lallaki	WP	Anticancer [20], [Oral interview].
65		<i>Oryza</i>	<i>Oryza longistaminata</i> A chev. & Roehr. (Native)	Wild rice	Shinkafar kwadi	WP	Anticancer [20], [Oral interview].
66	Portulacaceae (Broad-Leaves)	<i>Portulaca</i>	<i>Portulaca oleracea</i> Linn. (Native)	Duck weed	Baa-baa-jibjii; Halsen saniya;	WP, L, S	Earache, syphilis, boils, sedative, abscesses, Jaundice, diabetes, Urinary disorder, diarrhoea, dysentery, gum bleeding [4, 8, 29].
67	Rubiaceae (Broad-Leaves)	<i>Oldenlandia</i>	<i>Oldenlandia corymbosa</i> Linn. (Native)	Diamond flower	Raatsa-hanji (Roger et. al. 2007)	WP	Anthelmintic, antirheumatic, nervous depression, cancer, stomach-ache, fever, viral infection appendicitis [59, 60].
68		<i>Oldenlandia</i>	<i>Oldenlandia herbacea</i> Linn. Roxb. (Native)	Diamond flower	Raawayaa Raatsa-hanji	WP	Cure febrifuge, ulcer, rheumatic fever, swelling, elephantiasis, cancer, asthma and bronchitis [59, 60].
69		<i>Spermocoe</i>	<i>Spermocoe stachydea</i> (DC.) Hutch. & Dalz (Native)	False button weed	Alkamar tururuwa	L	Kidneys, diuretics, menstrual cycle, venereal diseases, gallstones abortifacients, haemorrhoids, conjunctivitis [61].
70	Solanaceae (Broad-Leaves)	<i>Physalis</i>	<i>Physalis angulata</i> Linn. (Exotic)	Goose berry	Lababuje, Toma-tirinkaji	WP	Fever, asthma, vomiting, diarrhoea, sleeping sickness, rheumatism, worm, whitlows, ophthalmic, small pox, skin aches, gonorrhoea, fracture, menstrual [3, 29, 62].
71		<i>Solanum</i>	<i>Solanum nigrum</i> (L.) (Exotic)	Black night shade	Gautan kudi	WP, L, F	Indigestion, piles and treatment of cancer, asthma [oral interview], [8, 63].
72	Sphenocleaceae (Broad-Leaves)	<i>Sphenoclea</i>	<i>Sphenoclea zeylanica</i> Gaertn (Native)	Goose weed	Yadiya	L, Fl., St.	Leaves used in poultice against stings of venomous animals, cure ulcer antimicrobial [oral interview], [64].

Key: N-Native, E-Exotic Species, Rh-Rhizome, YSh-Young shoot R-Roots, St. Stems, L-Leaves, Fl.-Flowers, S-Seeds, WP-Whole Plant.

The results obtained from the study showed seventy two (72) weed species belongs to sixteen (16) families and fifty (50) genera were recognized out of which forty seven were native and twenty five were exotic species (Figures 1 and 2). Traditional medicinal weeds parts used as medicine by traditional healers includes, roots, stems, leaves and fruits, and flowers have been used to be added in our daily diet and drinks such as teas, Ayurveda, salad and soup as herbal therapies as a source for medications. Similarly, weed leaves, root and stem are mostly used for treatment of diseases followed by whole plant parts such as rhizome, seed, flower, latex and fruit. Weeds are plant growing where is not wanted, sometime this weeds turns out to be a source of food or source of medicine and this herbs which were used as medicines are considered as weeds by agriculturist. The methods used to prepared herbal therapy were classify as follows part paste on the body; Juice; powder; fresh leaves for soup and decoction and also smoke were also used for spiritual healing, example epilepsy, also external applications of herbal medicine were used for treatment of skin diseases, snake bites and wounds while internal consumption were used on treatment of various diseases such as ulcer, syphilis, gonorrhea, rheumatic pain, dysentery, fever and typhoid.

3.1. Amaranthaceae spp

Alternanthera sessilis as a weed is a perennial herb that belongs to Amaranthaceae family. Dhanan and Elayanaj [9] and [33] reported the used of *A sessilis* for curing leprosy and people suffering from fever and Night blindness diseases. *Amaranthus viridis* is an annual weed which have several medicinal properties, it treat and cured skin eruption, fever, indigestion, ear diseases, and worm infestation and abdominal disorder [65, 66]. Specie *Amaranthus spinosus*, has alkaloid used in treatment of ulcerated mouth, ulcers, and sores throat and eczema [4, 8].

3.2. Asteraceae spp.

Researchers have reported the uses of Asteraceae spp. as medicine that used to treat skin inflammation, urinary tract infections, rheumatic pain, diarrhea, malaria and dysentery, [67, 68], Asteraceae are also used as herbal traditional remedy to treat different human illnesses, like rhinitis, nasal sinusitis, rheumatism, headaches, stomach ulcers, bacterial and fungal infections [69]. *Eclipta alba*, belongs to Asteraceae family are good for treatment of liver diseases, cough and asthma.

3.3. Cleomaceae spp.

Cleome viscosa under Cleomaceae family the seeds extracts were used to treat bacterial strains such as *Klebsella pneumonia*, *Proteus vulgaris*, and *bacillus cereus*, and antifungal activity against *Aspergillus niger* [70], *Rhychospora corymbosa* (L.) Britton, the crushed leaves and stem were

used to treat sickle cell diseases [44].

3.4. Commelinaceae spp.

Bello *et al.* [20] reported that *Commelina diffusa* Burm. f., in Commelinaceae family are used to treat gonorrhea and yellow fever, also an anti-diabetic agent [40].

3.5. Cyperaceae spp.

Cyprus rotundus (Cyperaceae) their rhizome are good that has astringent property which are good in treatment of skin disease and good as analgesic, aromatic, also good as anti-bacterial properties in Ayurvedic medicine.

C. rotundus is good in herbal traditional remedy which is frequently used as an analgesic and to treat gastrointestinal issues and diarrhea. *C rotundus* is a plant with many advantages around the globe when utilized it cured stomach problems, epilepsy, wounds, boils, and blisters [8, 42]. When roots of *Cyprus rotundus* are cooked with an equivalent amount of mint (*Minthapiperata*) are good in treating cholera disease.

3.6. Euphorbia spp.

The herb *Euphorbia hirta* is a weed with great advantages its stem and leaves is used to treat breathing problems, dengue fever and digestive issues, others are severe diarrhea, and cuts and wounds [9, 71]. *Euphorbia hirta* has analgesic, antipyretic, and anti-inflammatory properties, in India's traditional medical system it is frequently used to treat diabetes [4]. *Phyllanthus niruri* were used in herbal medicine to treat ailments such as urinary stones, ulcer, dysentery, swelling of the body and diseases that affect the genital organs example urinary tract infections like gonorrhea and it treat and cured cold and gastrointestinal problems [72, 73].

3.7. Fabaceae spp.

Senna obtusifolia and *Senna occidentalis* belong to Fabaceae family were reportedly used for treatment of rheumatism, mental disorder, malaria and typhoid also are good in treatment of stomachache and ulcer [20], Fabaceae family had species used as herbal medicines for management of many ailments and diseases [74].

3.8. Lamiaceae spp.

Bello *et al.* [20] reported *Leucas martinicensis* (Jacq.) Ait. f. specie belongs to lamiaceae family and were used to treat Snake bite antidote, and epilepsy, also Lamiaceae are good in terms of herbal medicine because they has antifungal, and have antibacterial action, traditionally were used to cure scorpion bites [4]. Also Shawky *et al.* [52] reported *Ludwigia* spp. has several health benefits and biological activities,

Ludwigia were used as anti-inflammatory, anti-diabetic, and antimicrobial properties.

3.9. Malvaceae spp.

Corchorus olitorius L. (Malvaceae) weed with antioxidant properties and gives protection against toxins [4], its seeds are good in curing ulcer and pile [75, 65], seed of *C. olitorius* L. when grind and pour on pap, soup or hot water help to alleviate piles symptoms, Stomach disorders, Ulcers, Cough, Jaundice and Aphrodisiac. *Corchorus olitorius* L. is a weed of economic importance whose leaves are rich in minerals and amino acids eaten by people as soup in middle east, parts of asia and Africa, the leaves were used for treatment of typhoid and malaria and antitumor [2].

Sida acuta stem, leaf and roots have been use as food and medicine, Teheghebe *et al.* [76] reported on their studies the benefit of *C. acuta* by indigenous people to manage health problems such as heart diseases, cough, asthma, tuberculosis and respiratory diseases, bile and liver, ulcers and abdominal pain, headache are all control and cure by *Sida acuta* while *sida rhombifolia* treat rheumatism. [8].

Waltheria indica Linn (Malvaceae) is a widespread plant in West Africa. It is frequently used to treat inflammation and asthma in Burkina Faso. This review aims to summarize the findings in the pharmacology [77].

3.10. Onagraceae

Onagraceae is an important aquatic plant-including genus and characterized by its myriad traditional uses as treatment of hormonal imbalances, urinary complaints, promoting prostate health, and antimicrobial potential [52].

3.11. Poaceae spp.

Cynodon dactylon perennial grass known as Bermuda grass under Poaceae family efficiently used in treatment of detoxification in various regions of the world, *C. dactylon* when thoroughly immerse in liquid for a day and drink early morning, it aid in the removal of toxins from the body, and also treats Scabies, dysentery and eczema [8, 53]. Soak liquid of *Chloris Pilosa* when drink it serve as antibacterial and antimicrobial to treat skin disorder and cure diabetes.

3.12. Portulacaceae spp.

Portulaca oleracea weed specie under Portulacaceae family is an invasive plant species, clinically is reportedly popular for the treatment of dysentery, acute gastroenteritis, diabetes and diarrhea [4, 8].

3.13. Rubiaceae spp.

Oldenlandia diffusa belongs to Rubiaceae family were used as anticancer and anti-inflammatory capabilities attributed to

its varying constituents [59]. *Oldenlandia. corymbosa* possesses antioxidant properties alongside *O. umbellata* and *O. diffusa* [59]. Ba'aga *et al.* [62] reported *Physalis angulata* belongs to family of Solanaceae an annual or perennial herb its extracts of leaves and roots revealed inhibited anti-microbial activities against *Bacillus* species, *Styphyllococcus aureus*, and *Streptococcus* species it also used in treatment of Plasmodium parasites disease. Similarly *Solanum nigrum* linn treat broad variety of infectious diseases that harm humans is good in curing of bronchial asthma, cancer, sore throats, toothaches, dermatitis, and eczema [4, 8, 63].

4. Discussion

Studies have confirmed the effectiveness and efficiency of traditional herbal medicine in society in different part of the world in the scientific literatures, According to study conducted by Geldenhuys, [78], Oudhia, [79] and Pudhan and Panda [80] garden weeds in South Africa and weeds of rice in Chhattisgarh, Eastern India in their studies on ethnobotanical exploration find out the medicinal values of some common species of weeds present in crop fields like rice, and vegetables and other localities of Koraput, India. In their study, total of thirty three (33) species of weeds belonging to thirty two (32) genera and twenty (20) families were documented for used in treatment of about 36 illnesses and disease for healing including headache, toothache and eye inflammation The use of weeds in traditional medicine cannot be overemphasized, According to Bello *et al.* [20] on their study reported weeds such as *Ageratum conyzoides*, *Portulaca oleracea*, *Sida acuta*, *Euphorbia hirta*, *Cleome viscosa*, *Solanum nigrum*, *Commelina benghalensis*, *Eleusine indica*, *Paspalum scrobiculatum*, *Vernonia ambigua*, *Cassia occidentalis*, *Waltheria rhombifolia*, *Physalis angulata*, *Amaranthus ficioides*, *Cenchrus biflorus*, *Amaranthus spinosus*, *Corchorus olitorius*, *Oldenlandia spp. aestuans*, *tridens*, *Portulaca oleracea*, *Chloris pilosa*, *Ludwigia hyssopifolia* were used to treat and cure different ailments and diseases. Furthermore, traditional pharmacopoeias are continuously growing and adapting, hence the incorporation of alien weed species into traditional systems of healing is significant [81].

Investigation during a verbal communication between members of the traditional herbal medicine sellers and members of the community and also farmers of the study area reveals beneficial aspect of weeds and their uses for treatment and cure of disease and ailments, *Aternanthera sessilis* and *Euphorbia hirta* were used to treat and cure asthma, crush milky juice of *Euphorbia hirta* serve as iodine to cure fresh cut. *Sida acuta*, *Cassia occidentalis* and *Ageratum conyzoides* were used to cure kidney disease [20]; *Cassia occidentalis*, *Portulaca oleracea* were used to cure diabetes; weeds such as *Alternanthera sessilis*, *Corchrus olitorius*, *Sida acuta* and *Eclipta prostate* were used to cure liver disease; and also *Physalis angulata*, *Paspalum scobiculaum*, *Cyperus esculentus*, and *Cynodon dactylon* were used to cure mental disorder [20], while *Commelina benghalensis*, *Eclipta*

alba, and *Cassia obtusifolia*, and *Cassia occidentalis*, and *Alternanthera sessilis* were used to cure leprosy; others include *Corchorus olitorius*, and *Cleome viscosa*, and *Commelina benghalensis*, and *Alternanthera sessilis* were used to treat fever others include *Sida cordifolia*, *Phallantus amarus* were used to cure diarrhea; weed like *Euphorbia hirta*, *Ageratum conyzoides* were used to treat cut and wound, *Commelina benghalensis*, and *Leucas martinicensis*, and *Alternanthera sessilis* were used to treat snake bite while *Phallantus amarus* treat and cure diarrhea. The result is consistent with the works of Abiodun *et al.* [3] and Bello *et al.* [20] on their study of medicinal weed diversity and ethno-medicinal weeds in Odigbo, Nigeria and Weed species composition in paddy field in Usur, Nigeria the use of *Alternanthera sessilis* weed specie used to treat and cure asthma; and *Sida acuta*, and *Cassia occidentalis* used to treat cured kidney diseases and diabetes; while *Physalis angularata* treat menstrual disorders; *Cassia obtusifolia* and *occidentalis* used to treat and cure leprosy. Also the study is consistent with the works of Abd El-Ghani [82] on his study of traditional plants of Nigeria an overview; where he mentioned the used of *Ageratum conyzoides* used to treat and cured ulcer, *Euphorbia hirta* treat and cure asthma and *Eclipta prostrata* treat and cure liver diseases. The study is consistent with the works of Radha and Manokari [11] on their study of checklist of medicinally important weeds growing in the horticulture fields of Palayamkottai, Tirunelveli distict, Tamil Nadu, India where they reported the used of *Euphorbia hirta* cured asthma; *Portulaca oleracea* cured diabetes; while *Alternanthera sessilis*, and *Commelina benghalensis*, and *Eclipta alba* weed plants cured leprosy; weeds like *Corchorus olitorius*, *Althernanthera sessilis*, and *Cleome viscosa* and *Commelina benghalensis* treat and cures fever; *Sida cordifolia* cured diarrhea. The research result is consistent with the works of Panda *et al.* [83] reported on their study of an annotated checklist of weed flora in Odisha, India the uses of various weeds as medicine were mentioned example *Phallantus amarus* were used to cured diarrhea. The result findings also found that, the juice of *Chloris Pilosa* serves as antibacterial and antimicrobial to treat skin disorder and also cure diabetes. Ekwealor, [7] affirmed that certain wild edible weeds were used as medicine because of their assumed health benefits, however, *Commelina diffusa* is an important for remedy for the treatment of diabetics, the study is consistent with study of Vu *et al.* [40] on the study of antidiabetic effect of compounds from *Commelina diffusa* Rev. Bras. Farmacogn, the result finding also notice *Solanum nigrum* from Rubiaceae family are found to cure cancer, this findings is consistent with the findings of Mandal, *et al.* [63] on their study of analysis of medicinal properties of plant, Journal of pharmaceutical negative results, found *Solanum nigrum* cure cancer.

In the same way, the use of weeds as food and medicine for treatment of cancer, pile and ulcer were previously discussed and reported by other authors in different part of the world such as Palestine, China and Thailand [84-87]. The result obtained shows some of the weeds were used as medicine, fodder, food and other purposes, (Table 1). Weeds used as food includes *Amaranthus spinosus*, *Portulaca oleraceae*,

Cassia obtusifolia, *Corchorus aestuans*, *Corchorus olitorius*, *Corchorus tridens*, *Alternanthera sessilis*, and *Chrysanthemum indicum*, even though some community members are not aware of the uses of some weeds as sources of food. Panda *et al.* [83] reported *Amaranthus sessilis*, *spinosus*, *Portulaca oleracea* plants were used as sources of food, other types of weed like *Alternanthera spp*, *Brachiaria falcifera*, *Brachiaria lata*, *Eragrostis ciliaris*, *Echinochloa crusgali*, *Chloris pilosa*, and *Digitaria horizontalis*, *Dactyloctenium aegyptium*, *Cenchrus biflorus*, *Pennisetum pediculatum*, *Pennisetum polystachion*, and *Paspalum scrobiculatm* were used as forage and fodder for animals [20], weeds as sources of nutrition for animals was also reported by Mohammed *et al.* [88] on their study of Herbaceous species diversity in Kanawa forest reserves, Gombe State, Nigeria *Chloris pilosa*, *Digitaria horizontalis*, *Eragrostis ciliaris*, and *Pennisetum pediculatum* as forage or fodder for animals. Panda *et al.* [83] also reported the use of *crusgali*, *Alternanthera spp.* as fodder for animals. *Rhychospora corymbosa* (L.) Britton, the crushed leaves and stem were used to treat sickle cell diseases this is consistent with the work of Soro *et al.* [44] on their study of the effect of *Rhychospora corymbosa* and *Olox subscorpiodea* two plants used in the management of Korhogo sickle cell disease.

In the study area weeds like *Aeschynomene indica*, *Eragrotis ciliaris* and *Eragrotis tenella*, also *pennisetum polystachion*, and *Heteropogon contortus*, *Corchrus aestuans* and *tridens* were used for house hold purposes, others weed like *Eragrotis tremula* were used for rituals. The World Health Organization (WHO) estimates that about 80% of people on earth will make use and utilized herbal medicine for medical treatment [4].

A research study carried by Devi, *et al.* [4] reported that about 80% of the world's population have relies on weed and other similar plants for food and medicine, since they are well-known for curing a different of maladies. Also, about 90% of the herbal ingredients used in medicinal traditional systems like Ayurveda and Siddha and this include all plant parts like stem, bark, root, root bark, rhizome, leaf, flower, fruit, and seeds, are either complete plants or parts of them. Secondary metabolites including resin, gum, and latex have also been used as drugs to treat and cured diseases [12].

5. Conclusion

Traditional medicinal plants stems, leaves and fruits have been used to be added in our daily diet and drinks such us teas, Ayurveda, salad and soup as herbal therapies as a source for medications. Weed as an unwanted plant growing where it is not desired, sometime weed can be of a great importance as source of food and medicine. Weeds has some beneficial properties, and these can be extremely important ways for community income and for new pharmaceuticals and medicine for indigenous people in the community and also relish the nutritional role and health benefits, many of these weed produce substances called bioactive that are keenly used in

medicine, and these bioactive chemicals such as coumarins, anthraquinones, flavonoids, anthocyanins are useful in treatment of some disease and ailments like diabetes, ulcer and cough, gonorrhea and syphilis, weeds can be used as herbal medication such as *Aternanthera sessilis* and *Euphorbia hirta* were used to treat and cured asthma, crush milky juice of *Euphorbia hirta* serve as iodine to cure fresh cut. While *Sida acuta*, *Ageratum conyzoides* and *Cassia occidentalis* were used to cure kidney diseases. Weed plant such as *Solanum nigrum* is an excellent therapy for curing cancer and *Portulaca oleracea* is use to cure syphilis. Therefore, the effect of the herbal remedies can never be overemphasized as the used the whole plant. The herbalist uses the whole plant or parts of plant or combination of some plants to cure disease and ailment, the chemicals in the plant gave better effect (called synergy) than a single active ingredient in modern medicine. Consequently, published information on medicinal weed of paddy field of Usur as at now is not available. Therefore it is vital to carry out floristic survey on paddy fields where the paddy weeds flora is not well documented.

Novelty

The novelty of the study is unique.

I would like to undertake that the original article manuscript has not been published accepted for publication, or under editorial review for publication elsewhere.

The research will help government and research centers to keep record of the diversity and distribution of all weeds and identify them whether native or exotic and its value to community to use as medicinal herbs.

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Conflicts of Interest

The authors declare no conflicts of interest.

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