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**RESEARCH ARTICLE**

**SURVEY OF WEED PLANT SPECIES USED FOR MEDICINAL PURPOSES IN FOUR SELECTED LOCAL GOVERNMENT AREAS OF OYO STATE**

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**ABSTRACT**

Survey was undertaken in four selected Local Government Area in Oyo state Nigeria in June 2010 to investigate weed plant species used for medicinal purposes. More than 70 different weed plant species were encountered in the study area, out of which 34 were found useful for medicinal purposes. *Ageratum conyzoides* Linn., *Bryophyllum pinnatum* (Lam.) Oken, *Occimum gratissimum* L, *Tridax Procumbens* Linn, *Chromolaena odorata* (L) R.M. King & Robinson, *Tithonia diversifolia* (Hemsl.) A. and *Morinda lucida* Linn. were found to be the most frequently used of the weeds for medicinal purposes by 75% of the respondents. Nine of the 34 medicinal weeds (i.e 26.47%) were used in the study area for curing malaria, while 11.76% were used in curing body rashes. Convulsion and epilepsy were usually treated with 8.82% of the weeds, while 52.95% were used in curing either one or all of the above mentioned ailments. The findings also revealed that the majority (65%) of the weeds were present in all the zones. Most (65%) of the weeds are used in single herb form (by squeezing the fresh leaves to obtain the plant extract for drinking), while 20% of them were used in form of concoction ( i.e mixed with other ingredients). About 10 % were boiled as decoction to drink (Agbo) and 5% of them could be chewed or used as ointment to rub the affected part(s) of the body for fast relief.

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**INTRODUCTION**

A weed is any plant growing in the wrong place. However, with a small shift in perspective, the definition can be changed to a plant whose virtues have not been discovered. In agricultural production, weeds reduce the quality of harvested agricultural products. Weeds interfere with harvest operations and increase cost of harvesting. Weeds may poison animals, the cost of weed control is high, and weeds serve as alternative hosts for many plant diseases and animal pests. (Akobundu, 1980a). But of recent however, the need for cure for common diseases were thrown up the significant of weed species in health management. More so, weeds could be Edible e.g. *Sonchus arvensis* L. Medicinal, e.g Balsam pear L., *Phytolacca Americana* (pokeweed) L, Attractive to wildlife e.g Joe-Pye weed (E.E Lamont.) Indicates, the soil fertility status e.g nettles (*Urtica dioica* L.) good soil fertility, horsetail (*Equisetum arvensis* L.) suggests poor soils. Provision of pollen for honeybees and other pollinators. (Muhammed *et al.*, 2005). Okunlola, (2007). Note that Phyrethrins as a product of Phyrethrum flowers, rotenoids, and alkaloids—have been

used to an extent in the United States as sources of insecticides. Allelochemicals have been actively used as herbicides, Inhibition of plant growth and production of phytotoxic symptoms by certain plants and their residues are well established phenomena of herbicide potentials. (Rice, 1984). Socio-cultural uses of some weed plant species. E.g *Newbouldia leavis* used for installation of traditional rulers and chiefs and for divination. Cosmetics e.g Aleo vera. Traditional wines eg. *Raphia palm* (Aran ope), *Anacardium occidentale* (casewh). Family planning, several plant species are used by native doctors to prevent egg fertilization in the womb; this may be temporary or permanent depending on the preparation. There are also several herbal preparations which enhance the proper development of fetus, and ensure safe Delivery of the baby (Adebisi, 1999). Some weed plants, (serving as spices) functions like antibiotics, blood cleansing and indigestion eg *Combretum spp*, *Ocimum americanum*, *Parkia biglobosa*. Musical instrument production eg “Gudugudu”, “Bata”, “Koso”, “Akuro”, “Igbin”, (Adebisi, 1999). Plants (shrubs, herbs barks, berries, flower, and roots) have been used for magical, ritual and religious purposes E.g *Dracaenia fragrans*, *Illicium verum*. Kenneth, (1998) and Lispke, (1994) described medicinal plants as plants or plant products used by human beings in the protection, suppression,

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prevention or treatment of illness. Such plants contain biologically active chemical substances such as coumarins, volatile oils, alkaloids etc. The current trend in health management where emphasis is increasingly on a shift from orthodox medicine due to residual effects and other attendant problem to plant products is also a boost to natural medicine. Although, herbal medicines tend to look primitive and unscientific in comparison with modern medicine, the truth however, is that the use of plants to heal or combat illness is as old as mankind. For instance, plants remain the basis of the development of modern drugs. Such as:

- Aspirin is a chemical copy of the active analgesic chemical in the bark of willow trees.
- Some cough drops are based on some members of the mint plant family
- Many ache-easing products are based on camphor-an evergreen tree in the laurel family and on Eucalyptus-an evergreen tree in the myrtle family.
- Until the advent of synthetic antimalarials, quinine, isolated from the bark of various cinchona tree species, constituted the most effective agents for the treatment of malaria.
- Ephedrine which is extracted from the Chinese herb Ma Huang is used to ease the difficulty breathing of Asthma sufferers.
- Reserpine, an alkaloid obtained from the roots of *Rauwolfia* species depresses mental activity and for so long was used in psychiatric treatment.
- Digitalis is an extract of Chinese Mao ti Huang which the English people call foxglove. This drug is used to enable the heart to pump more blood.

This study was designed to identify weed species with medicinal purposes, investigate their dosage and the spread of the identified plants species.

## MATERIALS AND METHODS

### Study Area

Four Local Government areas were purposively selected for the study, the local government area were, Lagelu in Ibadan/Ibarapa zone, Saki west in Saki zone, Afijio in Oyo zone, Surulere in Ogbomoso zone, all in Oyo State Nigeria

### Sampling procedure

A multistage sampling technique was adopted. The 1<sup>st</sup> stage involved selection of all zones in Oyo State and these are Ibadan/Ibarapa, Saki, Oyo and Ogbomoso. 2<sup>nd</sup> stage involved random selection of one block from each zone. 3<sup>rd</sup> stage:- Random selection of 50% of the cells from each block to make a total number of 15 cells; 3 cells from Lagelu, 4 cells from Saki west, 4 cells from Afijio and 4 cells from Surulere. 4<sup>th</sup> stage:- Random selection of four (4) villages each from cell. 5<sup>th</sup> stage:- Selection of two (2) houses from each village. 6<sup>th</sup> stage:- Selection of (2) farmers from each house to make a total respondents of two hundred and forty (240) farmers from all the key zones of the state.

### Method of data collection

Information on the plant species was gathered using structured interview schedule. Local plant names, useful plant parts,

methods of preparation, dosage, and duration of treatment were recorded. Information on the duration of practice of respondents, source of knowledge, the extent of patronage and level of success in curing the ailment were also recorded. The major limitation was the fact that most of the farmers interviewed were non-literate, hence proper records on the usage of these weed/plant species for medicinal purposes were not kept. They relied on memory recall for the required information.

### Method of data analysis

Descriptive statistics, such as frequencies, percentages and means were used to describe the socio-economic variables of the respondents. The selected socioeconomic variables included age; marital status, religions, level of education, years of experience, and family size of the respondents.

## RESULT AND DISCUSSION

The socio-economic characteristic of respondents (Table 1) indicated that majority representing 35.5% falls into 31-41 age bracket, 76 out of 240 representing 31.7% lies between 42-52, 13.5% between the age of 53-63. 12.1% fall between 20-30 and while 7.5 falling between 64-74 years of age respectively. It can be deduced from the table 2 that 218(90.8%) of the respondents have married and out of 240 respondents 17 were Single with 7.1%.

**Table 1. Percentage frequency distribution of the age of respondents**

Age	Frequency	Percent
20-30	29	12.1
31-41	85	35.5
42-52	76	31.7
53-63	32	13.5
64-74	18	7.5
Total	240	100

**Table 2. Percentage Frequency Distribution of the Marital Status of the Respondents**

Status	Frequency	Valid percent
Married	218	90.8
Single	17	7.1
No	5	2.1
Total	240	100

Table 3: explain that the medicinal usefulness of the identified weed species was acclaimed by the majority of the respondents. Except for *Solanum dasypodium*, the medicinal value of all the identified weeds enjoyed at least 54 popularity among the 240 respondents. *Bryophyllum pinnatum*, *Peperomia*, *Amaranthus spinosus*, *Sida acuta*, *Chromolaena* and *Talinum* were the most of these weed species with popularity ranging from 82%- 97.9%. only 24% of the population known the medicinal value of *Solanum dasypodium*. Aside *Morinda lucida* and *Euphorbia heterophylla* with 57.5% and 54.2% popularity with respect to medicinal value, all other weed species identified for medicinal usefulness were known to be more than 60% of the respondents. Table 5 show the list of weed species used in controlling diseases in the study area, growth habit, parts used and local name. About 27 diseases and disorders were

**Table 3: Identified medicinal weeds plant in the study area**

Name of weeds	Responses			
	Yes	No	No Responses	Total
<i>Acanthospermum hispidum</i>	186(77.5)	38(15.8)	16(6.7)	240(100)
<i>Adenopus breviflorus</i>	164(68.3)	69(28.8)	7(2.9)	240(100)
<i>Ageratum conyzoides</i>	176(73.3)	59(24.6)	5(2.1)	240(100)
<i>Alchornea laxiflora</i>	172(71.7)	48(20.0)	20(8.3)	240(100)
<i>Alternanthera pungens</i>	189(78.8)	34(14.2)	17(7.1)	240(100)
<i>Amaranthus spinosus</i>	211(87.9)	29(12.1)	-	240(100)
<i>Bryophyllum pinnatum</i>	235(97.9)	3(1.3)	2(0.8)	240(100)
<i>Canna bidentata</i>	176(73.3)	59(24.6)	5(2.1)	240(100)
<i>Ricinus communis</i>	179(74.6)	60(25.0)	1(0.4)	240(100)
<i>Chromolaena odorata</i>	206(85.8)	30(12.5)	4(1.7)	240(100)
<i>Commelina difusa</i>	182(75.8)	44(18.3)	14(5.8)	240(100)
<i>Cymbopogon giganteus</i>	176(73.3)	48(20.0)	16(6.7)	240(100)
<i>Euphorbia heterophylla</i>	130(54.2)	99(41.3)	11(4.6)	240(100)
<i>Ficus exasperate</i>	168(70.0)	71(29.6)	1(0.4)	240(100)
<i>Helitropium indicum</i>	183(76.3)	55(22.9)	2(0.8)	240(100)
<i>Jatropha gossypifolia</i>	191(79.6)	46(19.2)	3(1.3)	240(100)
<i>Mitracarpus villosus</i>	173(72.1)	29(12.1)	38(15.8)	240(100)
<i>Morinda lucida</i>	138(57.5)	84(35.0)	18(7.5)	240(100)
<i>Newbouldia laevis</i>	149(62.1)	74(30.8)	17(7.1)	240(100)
<i>occimum gratissimum</i>	155(64.6)	48(20.0)	37(15.4)	240(100)
<i>Peperomia pellucida</i>	224(93.3)	8(3.3)	8(3.3)	240(100)
<i>Phyllanthus amarus</i>	118(78.3)	48(20.0)	4(1.7)	240(100)
<i>Physalis angulata</i>	184(76.7)	52(21.7)	4(1.7)	240(100)
<i>Rothmannia longiflora</i>	189(78.8)	49(20.4)	2(0.8)	240(100)
<i>Senna occidentalis</i>	192(80.0)	44(18.3)	4(1.7)	240(100)
<i>Sida acuta</i>	207(86.3)	24(10.0)	9(3.8)	240(100)
<i>Solanum dasypodium</i>	58(24.2)	182(75.8)	-	240(100)
<i>Talinum triangulare</i>	198(82.5)	19(7.9)	23(9.6)	240(100)
<i>Tithonia diversifolia</i>	172(71.7)	48(20.0)	20(8.3)	240(100)
<i>Tridax procumbens</i>	178(74.2)	59(24.6)	3(1.3)	240(100)

**Table 4. Major diseases treated with the weeds species**

Major Diseases	Weed species used
Malaria	<i>Ageratum conyzoides</i> , <i>Phyllanthus amarus</i> , <i>Cymbopogon giganteus</i> , <i>Alchornea laxiflora</i> , <i>Chromolaena odorata</i> , <i>Morinda lucida</i> , <i>Rothmannia longiflora</i> , <i>Tithonia diversifolia</i> , <i>Jatropha gossypifolia</i>
Wound	<i>Ageratum conyzoides</i> , <i>Bryophyllum pinnatum</i> , <i>Rothmannia longiflora</i> , <i>Jatropha gossypifolia</i>
Dysentery	<i>Basil occimum gratissimum</i> , <i>Euphorbia hirta</i> , <i>Parquetina nigrescens</i> , <i>Talinum triangulare</i> , <i>Commelina difusa</i>
Ulcer	<i>Ageratum conyzoides</i> , <i>Senna occidentalis</i>
Labour pain	<i>Sida acuta</i> ,
Low fertility	<i>Peperomia pellucida</i> ,
Hypertension	<i>Tridax procumbens</i> , <i>Talinum triangulare</i> , <i>Ficus exasperate</i>
Asthma	<i>Euphorbia hirta</i> , <i>Cassia Alata</i> , <i>Commelina difusa</i>
Cough	<i>Bryophyllum pinnatum</i> , <i>Euphorbia hirta</i> ,
Rheumatic	<i>Parquetina nigrescens</i> , <i>Cymbopogon giganteus</i> ,
Hemintocasis	<i>Parquetina nigrescens</i> ,
Nervous disorder	<i>Solanum dasypodium</i> ,
Gonorrhoea	<i>Cassia Alata</i> , <i>Ficus exasperate</i>
Typhoid	<i>Euphorbia heterophylla</i> ,
Skin problem	<i>Bryophyllum pinnatum</i> , <i>Senna alata</i> , <i>Physalis angulata</i> , <i>Morinda lucida</i> , <i>Adenopus breviflorus</i> , <i>Mitracarpus villosus</i>
Migraine	<i>Newbouldia laevis</i>
Anovulation	<i>Newbouldia laevis</i>
Diabetics	<i>Momordica charantia</i> , <i>Morinda lucida</i> ,
Convulsion	<i>Ageratum conyzoides</i> , <i>Momordica charantia</i> , <i>Jatropha gossypifolia</i>
Eye disorder	<i>Helitropium indicum</i> , <i>Jatropha gossypifolia</i>
Stomach ache	<i>Helitropium indicum</i>
Fibroids	<i>Jatropha gossypifolia</i>
Stroke	<i>Jatropha gossypifolia</i>
Menstrual disorder	<i>Ricinus communis</i> , <i>Canna bidentata</i>
Antidote against poisons	<i>Euphorbia hirta</i> , <i>Parquetina nigrescens</i> , <i>Amaranthus spinosus</i> ( pigweed),
Constipation	<i>Euphorbia hirta</i> , <i>Cassia Alata</i> , <i>Momordica charantia</i>
Pneumonia	<i>Euphorbia hirta</i> ,

**Table 5.** List of weed species used in controlling diseases in the study area, growth habit, parts used, local name

Scientific Name	Common name	Local/Native name	Habit	Parts Used
<i>Acanthospermum hispidum DC.</i>	Bristly starbur	Dangunro	Herb	Leaves
<i>Adenopus breviflorus Trevithick, W.E.</i>		Tangiri	Herb	Leaves
<i>Ageratum conyzoides Linn.</i>	Goatweed	Ajiewu/ rerinkomi	Herb	Leaves
<i>Alchornea laxiflora (Benth.) Pax &amp; K. Hoffm.</i>				
<i>Altermanera pungens H.B. &amp; K..</i>	Christmas bush	Ijan	Shrub	Leaves
<i>Amaranthus spinosus L.</i>	Khakiweed	Rerinreyin/ Dagunro	Herb	Leaves
<i>Bryophyllum pinnatum Lam. Oken.</i>	Thorny pigweed	Tete dangunro	Herb	Leaves
<i>Canna bidentata Linn.</i>	Resurrection plant, air plant	Odundun	Herb	Leaves
<i>Chromolaena odorata (L) R.M. King &amp; Robinson</i>		Ido	Herb	Leaves
<i>Commelina difusa J.K. Morton</i>	Siamweed	Akintola- taku	Herb	Leaves
<i>Cymbopogon giganteus (Hochst) Chiov</i>	Spreading dayflower	Gbagodo	Herb	Leaves
<i>Euphorbia heterophylla Linn.</i>	Lemon grass	Waapa	Herb	Leaves/Root
<i>Euphorbia hirta Linn.</i>	Spurge weed	Koko-eoro	Herb	Whole plant
<i>Ficus exasperate Vahl.</i>	Snakeweed, asthma plant	Emi-ile	Herb	Leaves
<i>Helitropium indicum Linn.</i>	Sandpaper Tree	Ipin	Tree	Leaves
<i>Jatropha curcas L.</i>	Cock's comb	Ogbe akuko	Herb	Leaves
<i>Mitracerpus villosus M. Scaber Zucc</i>		Lapalapa	Herb	Latex/root/leave
<i>Momordica charantia Linn.</i>	African cucumber	Irawole	Herb	Leaves
<i>Morinda lucida linn.</i>	Brimstone tree	Ejinrin wewe	Herb	Leaves
<i>Newbouldia laevis (P. Beauv.) Seemann ex Bureau.</i>		Oruwo	Tree	Leaves
<i>Occimum gratissimum L.</i>	Fertility plant	Akoko	Tree	Root/stem/bark
<i>Parquetina nigrescens</i>		Efinrin	Herb	Leaves
<i>Peperomia pellucida (L)H.B &amp; K</i>		Ogbo	Herb	Leaves
<i>Phyllanthus amarus Schumach. &amp; Thonn.</i>		Rinrin	Herb	Leaves
<i>Physalis angulata Linn.</i>	Wildcape	Eyin-olobe	Herb	Leaves
<i>Ricinus communis</i>	Castor oil plant	Koropo	Herb	Leaves
<i>Rothmannia longiflora Salisb.</i>		Laara	Shrub	Leaves
<i>Senna alata (Linn)</i>		Kerebuje	Herb	Leave
<i>Senna occidentalis (L) Link.</i>	Ringworm plant	Asunwon	Shrub	Leaves
<i>Sida acuta Burm. F.</i>	Coffee senna	Rere	Herb	Seed
<i>Solanum dasypyllyum Schumach &amp; Thonn.</i>	Broomweed	Losepotu	Herb	Whole plant
<i>Talinum fruticosum (Jacq) Willd.</i>	Prickly solanum, Turkey berry	Bobo-awodi	Herb	Seed/Leave
<i>Tithonia diversifolia (Hemsl) A.</i>	Water leaf	Gbure	Herb	Root
<i>Tridax procumbens Linn.</i>	Mexican sunflower	Agunmoniye	Herb	Leaves
		Igbalode/ muwagun	Herb	Leaves

claimed to have been cured using various weed species by farmers in the sample area (Table 4). These range from common diseases like malaria, wound, cough and skin problems to serious diseases like hypertension, fibroid, diabetics and stroke. The most common of the weeds used for their treatment presented in table 9 of the 34 plant species identified, 28 (82.4%) were herbs, 3 (09.0%) were trees while 3 (09%) were shrubs.

## DISCUSSION

Majority (67%) of the farmers interviewed were in their very active age (31-52 years) indicating that there is still the prospect of leaving more about the weeds in their respective domain. Also, since they represent the prospective group of the community it is very expected that the oral transfer of the knowledge from parent to children will continue thereby contributing to the enhancement of the continued use of the herbs. Dennis (2000) also reported that the discovery of novel drug from natural sources, particularly plants, has become a primary objective to conserve these global genetic resources

and the indigenous knowledge associated with their use in order to fully explore their potential plant products. The fact the majority of the respondents are aware of the medicinal values of the identify weed species is a welcome development for indigenous medicine, this supported the statement made by Igoli *et al.* (2002; 2003), that the documentation of this kind of information will be beneficial in general health care, ecological control, forest conservation research and provide lead to plants with useful medicinal properties. This also point to the fact that the identified weeds were will distributed across the sample area. Viewed against the background of increasing literacy, it may not be long before proper documentation required of the use of these herbs commences. Similarly, children brought up in their environment may in their future academic endeavours venture into researching into the medicinal usefulness of the weeds. The checklist of the diseases claimed to be curable using the local herbs revealed a lot of many dreaded and life challenging diseases. Sanjay Kr Uniyal, (2006) revealed that in Chhota Bhangal Western Himalayan, studies indicated that in absence of modern health facilities, people in the area depend on plant for medicinal

purpose also stressed that the plant were used for curing a total of 21 disease ranging from simple stomachache to highly complicated male and female disorders. As such, there is a hope for better life for people suffering from such diseases. A proper learning of the identified potent herbs is likely for bringing good health at cheaper rate closer to the sick. It is also confirmed that a good knowledge of this collection can be used to treat illnesses like diabetes, sleeplessness, hypertension caused by stress, fever, general weakness, irregular menstruation, stomach ulcers, headaches, obesity, etc such can be handled without doubts and reference to anyone, Sofowora, (1993a).

Furthermore, it is interesting to note that most of the identified weed species with very potent medicinal values are the very ones which farmers dread a lot due to their debilitating effects on farmers crops. Such weeds as *Chromolaena*, *Tithonia*, *Euphorbia*, *Argeratum* etc with very fast growth rate and ability to grow in virtually all soils here all been identified as potent life saver. Thus, these species could form a basis for the transformation of the health sector in Nigeria if properly researched. With the government interest in ventures that will maximally utilize local raw materials, investments in researchers on these weeds will surely save the country a lot of hard earned foreign currency. In recent time it has become a primary objective to conserve these global genetic resources and the indigenous knowledge associated with their use in order to fully explore their potential plant products (Dennis *et al.*, 2000).

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