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Botanical Survey of Poisonous Plants within the Federal Capital Territory, Abuja, Nigeria

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Abstract
A total of 125 respondents were interviewed through the use of structured questionnaire administered within five randomly selected local council areas in the FCT, through which demographic data and information on the poisonous plants, poisonous parts, poisonous effects, modes of poisoning, and antidotes was obtained. Forty two species of plants belonging to 34 genera in 19 families were identified. The most frequent families are; Leguminose, (27.2%), Euphorbiaceae, (12.8%); and Solanaceae, (9.6%), while the most frequently identified toxic plant species are Erythrophleum guineense, (15.2%), Sacciolepis africana, (14.4%), Erythrophleum africana, at (6.4%), Datura metel, (6.4%), and Ricinus communis, (5.6%). The result showed the profile of poisonous plants present in the FCT graze land. This data will help clinicians to make quick and rational diagnosis, and management of phytotoxicosis. This study is intended to create more awareness of these plants to the public so as to take caution while consuming them or use them as alternative medicine.
Keywords: Poisonous plants, Toxic, Livestock, FCT-Abuja

INTRODUCTION

A toxic plant may be defined as one which detrimentally affects the health of man or animal when eaten in such amount as would be taken normally or under special circumstances like restriction of choice or diet or extreme hunger (Ayub and Vadlamudi, 2000). However, through contact or ingestion it also hinders or destroys normal processes leading to distressing symptoms, pathology or mortality (Ayub and Vadlamudi, 2000). The toxins in plants do not have any apparent function in the plant except for defense mechanisms or survival in adaptations (Ayub and Vadlamudi, 2000). Poisonous plants may have medicinal properties which are secondary metabolites such as cardiac glycosides, alkaloids, proteins, and amino acids, thus exhibit both beneficial and adverse effects (Fred-Jaiyesimi and Ajibesin, 2012). Some of the plants used in folk medicine in treating human ailments and animal diseases are considered toxic and the therapeutic effects often occur at lower doses whereas overdose can induce poisoning (Botha and Penrith, 2008).

Clarke and Clarke (1977) reported phytotoxicicty as a major cause of loss in livestock industry since the days of early settlements. Phytotoxins affect animals in many ways although symptoms and lesion differ depending on the amount of the plant consumed. The common symptoms however include chronic illness, debilitation, decreased weight gain, abortion, abdominal discomfort, salivation, congenital defects, photosensitization and death (Clarke and Clarke 1977). Since most of the livestock in the state were kept under semi intensive or extensive systems of management making them susceptible to poisoning by toxic plants and with increasing human activities such as construction, farming, deforestation and other forms of environmental degradation which affect the fauna and the flora in the FCT, it becomes very important to assess the common poisonous plants found in the FCT. This study therefore was conducted to identify the toxic plants found in the FCT.

2.0 MATERIALS AND METHODS

2.1 STUDY DESIGN

This is a cross sectional prospective study.

2.2 STUDY POPULATION

Abuja the FCT has a population of 7,000 Cattle, 816,000 Goat, 480,000 Sheep (N.P.D.L record 1992).

2.3 STUDY AREA

2.3.1 Abuja, Nigeria's new capital city is located in the center of the country. The Federal Capital Territory has a land area of 8000 square kilometers which is two and half time the size of Lagos, the former capital of Nigeria (FCDA). It lies between latitude $8^0$25'N and $9^0$20'and Longitude $6^0$39'. The FCT is divided into six area councils: Abuja Municipal, Gwagwalada, Abaji, Kuje, Bwari, and Kwali (FCDA).

2.3.2 VEGETATION

The FCT falls within the Savannah zone vegetation of the West Africa Sub-region. Patches of rainforest however occur, in the Gwagwa plains especially in the gullied train to the south and the rugged south-eastern part of the

territory. Dominant vegetation of the territory is however divided into three savannah types; Park or Grossy savannah (53% of the territory), savannah woodland (12.8%) and Shrub savannah (12.9%) (Abumere, 1984; Elleh, 2001)

2.3.3 CLIMATE

The FCT has two main .seasons, rainy (April to October) and dry (November to march) (Abumere, 1984). FCT experience three weather condition annually this include a warm humid raining season and blistering dry season, in between the two there is a brief interlude of harmattan occasioned by the north east trade wind with the main features of dust haze intensified coldness and dryness. The rainy season begins from April and ends in October, when day time temperature reach 28^0C (82.4^0F) to 30^0C (86.0^0F) and night time lows over around 22^0C (71.6^0F) to 23^0C (73.4^0F). (World weather information services Abuja, 2012.)

2.4 SAMPLE SIZE AND METHODS

A total of 125 Questionnaire were administered in five out the six area councils that were randomly selected, viz; Gwagwalada, Kuje, Kwali, Abaji, and Abuja Municipal. 25 questionnaires were administered in each. 20 in various Fulani settlements (Ruga) that were located within three randomly selected sub regions while 5 questionnaires in the main town or villages.

2.5 DATA COLLECTION TOOLS AND MATERIALS

See appendix 1 for questionnaire administered to collect data. Other materials used include; a digital camera (for taking the photographs), motorcycle (for transportation) and a Hausa botanical dictionary (John, 1916).

2.6 PROCEDURE

This study was conducted over a period of 5weeks. The Fulani's were visited in their various settlements "Ruga". Since most of them can neither read nor write each of the questionnaires was filled by asking them the questions there in, and appropriate answers were ticked.

Attempt to administer the questionnaire through the Fulani chief who called for meeting failed.

2.7 PRECAUTIONS TAKEN

Thorough explanation of the aims of the study and reason why they should complement our efforts to solve their problems was taken. This is to get maximum corporation from them.

Little jokes were sometimes cracked so that they would not feel shy or scared.

Language barriers: A Hausa translator was always made available during the administration of the questionnaires. Sometimes, someone that understands fulfude (Fulani language) was used.

Some Fulani believe it is a secrete or special knowledge which should be paid for hence, some amount of money was paid.

2.8 LIMITATIONS OF THE STUDY

Some Fulani still failed to believe in the study while some were scared that it might be a plan to use the poisonous plant for malicious killing of their animals so they refused to be part of the project.

2.9 STATISTICAL ANALYSIS

The data collected were collated and analyzed using descriptive statistics, such as percentages and frequency (Gomez and Gomez, 1984).

3.1 RESULT

In this survey of poisonous plants within the FCT, 42 species of plants belonging to 34 genera in 19 families were identified. Among the listed plants, *Erythrophleum guineense, Sacciolepis africana*, *E. africana, Datura metel,* and *Ricinus communis* were the most frequent identified poisonous plant to the livestock in FCT. It was also found that, *E. guineense*, *Sacciolepis africana*, and *E. africana,* were reported in all the local area councils.

Eleven percent of the respondents were Hausa, (6.4%) Yoruba while (80%) were Fulani. (95.2%) of the respondents fall within the age of 31 and above, being Muslims, and married with the minimum of 21 years of experience, while at least (80%) of the respondents were male, being Fulani's with no educational background.

About seventy percent of the famers attributed the symptoms of toxicosis to be mainly digestive problems (like diarrhea, vomiting, dysentery, mouth foaming, and bloat), (20%) digestive and nervous signs, (8%) nervous signs (like salivation and lacrimation), and (1.6%) nervous and integumentary signs (like emaciation and accumulation of blood under the skin). (83.2%) of the poisonous plants identified were found in the range and farmlands while (16.8%) were found in the river bank and water points. The result also revealed that (69.6%) of the plants identified were shrubs while (30.4%) were tree plants. More so, (10.4%) of the respondents attributed the leaves as the poisonous part, (1.6%) to the seed while (88%) attributed it to the whole plants.

Figure 3.1 the age groups of the respondents (years)

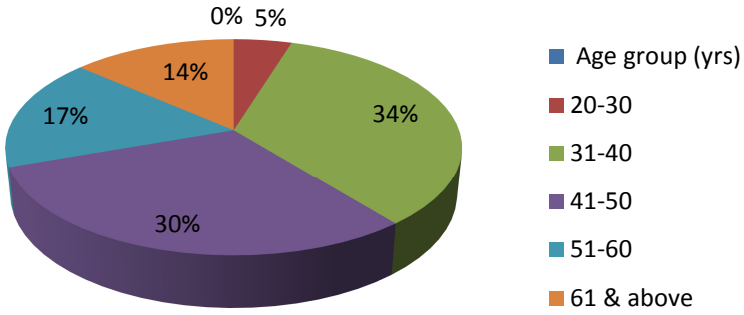
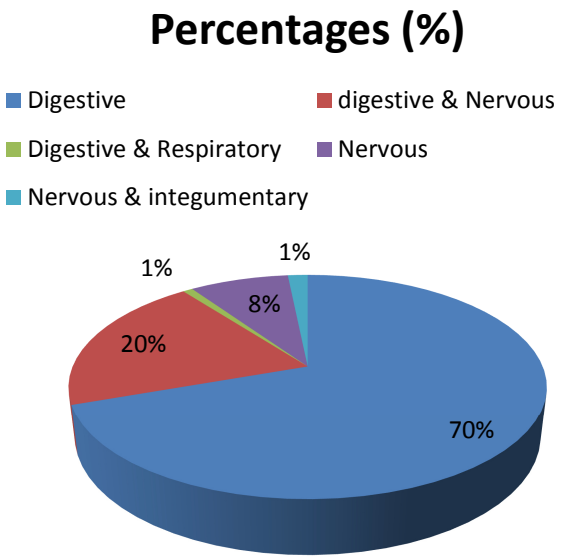


Figure 4.1 is a pie chart showing the proportion taking taken by different age groups of the respondents (years) with 31-40 years taking the largest share while 21-30 years being the lowest.

Figure 3.2 various symptoms associated with phytotoxicosis in FCT



As shown in the pie chart above, 69.9% of the famers attributed the symptoms of toxicosis to be mainly digestive problems (like diarrhea, vomiting, dysentery, mouth foaming, and bloat), 20% digestive and nervous signs, 8% nervous signs (like salivation and lacrimation), and 1.6% nervous and integumentary signs (like emaciation and accumulation of blood under the skin).

Table 3.1 shows the demographic data of all the respondents. 11.2% of the respondents were Hausa, 6.4% Yoruba while 80% were Fulani. 95.2% of the respondents fall within the age of 31 and above, being Muslims, and married with the minimum of 21 years of experience, while at least 80% of the respondents were male, being Fulani's with no educational background

TABLE 3.1 Demographic survey of respondent

Parameters		Percentage (%)
Sex	Female	11.2
	Male	88.8
Age group (years)	20-30	4.8
	31-40	34.4
	41-50	30.4
	51-60	16.8
	61 & above	13.6
Education background	Primary	4.0
	Secondary	5.6
	Tertiary	5.6
	None	84.8
Marital status	Married	92.8
	Single	7.2
	Divorce	-
Working experience (years)	1-5	-
	6-10	-
	11-15	-
	16-20	5.6
	21 & above	94.4
Religion	Christian	5.6
	Islam	94.4
	Others	-
Tribe	Hausa	11.2
	Yoruba	6.4
	Igbo	-
	Fulani	80.0
	Others	2.4

Table 3.2 shows the lists of all the poisonous plants commonly found in all the local governments selected in the FCT, Abuja. 42 species of plants were identified in all. The most frequently identified ones are; *E. guineense* (Gwaska), *Sacciolepis africana* (Gayeri), *E. africana* (samberu*), Datura metel* (Zaakami) and *Ricinus communis* (Zurma) at 15.2%, 14.4%, 6.4%, 6.4% and 5.6% respectively.

Table 3.2 List of most commonly poisonous plants found in the FCT, Abuja.

S/N	Botanical name	Family	Common name	Local name	Poisonous part	Frequency	Percentage (%)
1	*Ipomea asarifolia/I. repens*	Convolvlaceae	Ginger leaf morning glory	Duman raafii(H)	Whole plant	5	4
2	*Ipomea eriocarpa*	Convolvlaceae	-	Yambururu(H)	Whole plant	1	0.8
3	*Euphorbia sepium*	Euphorbiaceae	-	Aguwa(H)	Whole plant	1	0.8
4	*Cassia occidentalis*	Leguminose	Coffee sennah, foetid cassia	Raidore/ sangasanga(H)	Whole plant	4	3.2
5	*Cadaba farinosa*	Capparideae	Forsk	Tsawa/bayagi (H)	Whole plant	2	1.6
6	*Thevetia peruviana*	Apocynaceae	Yellow oleander, lucky nut, be still tree		Whole plant	3	2.4
7	*Balanites aegyptiaca*	Simambeae	-	Aduwa(H)	Whole plant	1	0.8
8	*Erythrophleum guineense*	Leguminose	Sass wood, Ordeal tree	Gwaska(H)	Whole plant	19	15.2
9	*Mannihot esculenta*	Euphorbiaceae	Tapioca, Manioc, Cassava	Kunnen rogo(H)	Leaf	3	2.4
10	*Zizyphus mucronata*	Rhamnaceae	Buffalo horn	Magariyar kura(H)	Whole plant	1	0.8
11	*Erythrophleum africana*	Leguminose	-	Samberu(H)	Whole plant	8	6.4
12	*Calotropis procera*	Apocynaceae	Dead sea, Sodom apple	Tumfafiya(H)	Whole plant	4	3.2
13	*Rhytachne congoensis*	Poaceae	-	Iiwa(H)	Leaf	2	1.6
14	*Ricinus communis*	Euphorbiaceae	Castor oil, Castor bean	Zurma(H)	Whole plant	7	5.6
15	*Sacciolepis africana*	Poaceae	Purple swamp grass	Gayeri(F)	Whole plant	18	14.4
16	*Sorghum vulgare*	Gramineae	-	Dawa/gyanuro (H)	Whole plant	1	0.8
17	*Leptadenia lancifolia*	Asclepiadeae	-	Yadiya(H)	Leaf	1	0.8
18			-	Harhandaho(F)	Leaf	1	0.8
19	*Datura metel*	Solanaceae	Jimson weed, Hairy thorn apple	Zaakami/ Baba n jimji(H)	Whole plant	8	6.4
20	*Cyathula prostrata*	Amaranthaceae	-	Dangere(H)	Whole plant	2	1.6
21	*Nymphaea lotus*	Nymphaeaceae	White water lily	Bādo(H)	Whole plant	2	1.6
22	*Nicotiana tabacum*	Solanaceae	-	Taba(H)	Leaf	2	1.6
23	*Andropogon guyanus*	Gramineae	Beard grass, blue stem grass	Gamba/keuro (H)	Whole plant	1	0.8
24	*Sorghum bicolar*	Gramineae	-	Bahuri/tugerere(H)	Whole plant	2	1.6
25			-	Sungoje(F)	Whole plant	1	0.8
26	*Momordica balsamina*	Cucurbitaceae	Balsam apple	Garafuni(H)	Whole plant	4	3.2
27	*Odina barteri*	Anacrdiaceae	Oliv	Diyan faru(H)	Seed	2	1.6
28	*Jatropha curcas*	Euphorbiaceae	Babadus nut, Physic nut	Cini da zugu(H)	Whole plant	2	1.6
29	*Zea mays*	Gramineae	-	Masara/burun dee(H)	Leaf	1	0.8
30	*Cassia tora*	Leguminose	-	Tafasa	Leaf	1	0.8
31	*Euphorbia unispina*	Euphorbiaceae	Candle plant	Tinya/tunya/ tumniya(H)	Whole plant	2	1.6
32	*Jatropha gossypiifolia*	Euphorbiaceae	Purging nut, physic plant	Cini da zugu(H)	Whole plant	1	0.8
33	*Prosopis africana*	Fabaceae/ mimosoideae	False locust	Kirya(H)	Whole plant	1	0.8
34	*Azadirachta indica*	Meliaceae	-	Dogo yaro(H)	Whole plant	1	0.8
35	*Lantana spp*	Verbanaceae	Bush berry, wild sage	Kimbar maharba(H)	Whole plant	2	1.6
36	*Vernonia amygdalina*	Compositae	Bitter leaf, Etidot, Ewuro (Y)	Shiwaka(H)	Whole plant	1	0.8
37	*Solanum americanum / S. nigrum*	Solanaceae	Night shade	Gautan kaaji(H)	Whole plant	2	1.6
38	*Argemone mexicana*	Papaveraceae	Yellow poppy, prickly poppy		Whole plant	1	0.8
39	*Cymbopogon ruprechtii*	Gramineae	-	Kyara(H)	Leaf	1	0.8
40	*Acacia albida*	Leguminose	-	Diyan gawo(H)	Whole plant	1	0.8
41	*Cetaurea calcitrapa*	Compositae	Pupple or red star thirstle	Danyi(H)	Leaf	1	0.8
42	*Arundo donax*	Gramineae	Spanish reed	Gabara(H)	Whole plant	1	0.8
						125	**100**

KEY: H (Hausa); F (Fulani); Y (Yoruba); I (Igbo); O (Others).

Table 3.3 shows the occurrence of all the poisonous plants in all the local governments selected. *E. guineense, E. africana* and *Sacciolepis africana* were being identified in all the local government area council while *Ipomea asarifolia, Cassia occidentalis, Thevetia peruviana, Mannihot esculenta, Calotropis procera, Ricinus communis* and *Datura metel* were identified in three different local government of the FCT.

Table 3.3 Comparism of poisonous plants in different local government area council, FCT.

S/N	Botanical name	Abaji	Municipal	Gwagwalada	Kuje	Kwali	Frequency
1	*Ipomea asarifolia/I. repens*	-	3	1	-	1	5
2	*Ipomea eriocarpa*	-	-	1	-	-	1
3	*Euphorbia sepium*	-	-	1	-	-	1
4	*Cassia occidentalis*	-	-	1	2	1	4
5	*Cadaba farinosa*	-	-	1	1	-	2
6	*Thevetia peruviana*	-	1	1	-	1	3
7	*Balanites aegyptiaca*	-	-	1	-	-	1
8	*Erythrophleum guineense*	3	3	3	6	4	19
9	*Mannihot esculenta*	-	1	1	1	-	3
10	*Zizyphus mucronata*	-	-	1	-	-	1
11	*Erythrophleum africana*	1	2	1	3	1	8
12	*Calotropis procera*	-	2	1	-	1	4
13	*Rhytachne congoensis*	-	-	-	1	1	2
14	*Ricinus communis*	3	2	-	2	-	7
15		5	3	4	4	2	18
16	*Sorghum vulgare*	-	-	-	1	-	1
17	*Leptadenia lancifolia*	-	-	-	1	-	1
18		-	-	-	1	-	1
19	*Datura metel*	3	2	-	-	3	8
20	*Cyathula prostrata*	1	-	-	-	1	2
21	*Nymphaea lotus*	-	-	1	-	1	2
22	*Nicotiana tabacum*	-	1	-	-	1	2

S/N	Botanical name	Abaji	Municipal	Gwagwalada	Kuje	Kwali	Frequency
23	*Andropogon guyanus*	-	-	-	-	1	1
24	*Sorghum bicolar*	1	-	-	-	1	2
25		-	-	1	-	-	1
26	*Momordica balsamina*	1	-	-	-	3	4
27	*Odina barteri*	-	-	-	1	1	2
28	*Jatropha curcas*	1	1	-	-	-	2
29	*Zea mays*	1	-	-	-	-	1
30	*Cassia tora*	1	-	-	-	-	1
31	*Euphorbia unispina*	1	1	-	-	-	2
32	*Jatropha gossypiifolia*	-	1	-	-	-	1
33	*Prosopis africana*	-	1	-	-	-	1
34	*Azadirachta indica*	-	1	-	-	-	1
35	*Lantana spp*	-	-	2	-	-	2
36	*Vernonia amygdalina*	-	-	-	-	1	1
37	*Solanum americanum / S. nigrum*	-	-	2	-	-	2
38	*Argemone mexicana*	-	-	1	-	-	1
39	*Cymbopogon ruprechtii*	-	-	-	1	-	1
40	*Acacia albida*	1	-	-	-	-	1
41	*Cetaurea calcitrapa*	1	-	-	-	-	1
42	*Arundo donax*	1	-	-	-	-	1
		25	25	25	25	25	125

4.2 DISCUSSION

In this survey for poisonous plants within the FCT, (88.8%) of the respondents were male while (11.2%) were female. This was because among the Fulanis, males were mainly responsible for animal husbandry which allows them to have more experience on plants. Also, their women hardly give time for conversation especially without their husbands consent. In this study, the respondents were aged between 20 – 60 years above which is similar to the report of Fred-Jaiyesimi and Ajibesin, (2012) in Ogun state, Nigeria in which the respondent were aged between 22-61 years, however, in this study, (95.2%) of the respondents fall within the age of 31 and above. Age thirty one and above is the peak of their productive years.

In this study (84.4%) of the respondents were without any formal education. This might be because nomadism is taken as their profession. This however different from the report by Fred-Jaiyesimi and Ajibesin, (2012) in which (21%) had tertiary education, (37.8%) secondary level of education and (40.3%) had primary education.

From this study, (94.4%) were having a minimum of 21 years' experience because the nomadic Fulanis attend to their animals from their young age. This is similar to the report by Fred-Jaiyesimi and Ajibesin, (2012) in which majority of the respondents claimed to have obtained knowledge on poisonous plants from their ancestors and by training. In this study (92.8%) of the respondents were married while (7.2%) were single, this might be because most Fulanis spend their lives with their animals without any formal education, and hence early marriage is common among them. In this study, (80%) of the respondents were Fulani, (11.2%) were Hausa while other tribes account for (8.8%).

Nineteen families of poisonous plants were identified in this study. This result differs from the report of Fred-Jaiyesimi and Ajibesin, (2012) in which forty three families of poisonous plants were identified; this might be due to differences in ecological zones between the FCT, Abuja and Ogun state. In this study, forty two species poisonous plants were identified. This is similar to the report of Agaie, *et al* (2007) in which forty one species of poisonous plants were reported in Sokoto state, but however different to the report of Fred-Jaiyesimi and Ajibesin, (2012) in which ninety two species of plants were identified. In this survey for poisonous plants *Erythrophleum guineense, Sacciolepis africana*, *E. africana, Datura metel,* and *Ricinus communis* were the most frequent plants identified while *E. guineense*, *Sacciolepis africana*, and *E. africana,* were reported in all the local governments. This is different to the report of Agaie, *et al* (2007) in which *Ipomea asarifolia* was reported in all the agricultural zones in Sokoto states

In this study, thirty four genera of poisonous plants were identified; the most frequently identified genera are *Erythrophleum, Sacciolepis*, and *Datura*. Symptoms believed to be associated with these plants include digestive problems (like diarrhea, vomiting, dysentery, mouth foaming, and bloat), nervous disorders (like salivation and lacrimation), and integumentary problems (like emaciation and accumulation of blood under the skin). While Fred-Jaiyesimi and Ajibesin, (2012) reported the poisonous effects of plants to include death, inflammation, coagulation of blood, blindness, salivation, diarrhea, gastrointestinal disorders, irritation, dermatitis, convulsion and abortifacient effects.

In this study, (83.2%) of the poisonous plants identified were found in the range and farmlands while (16.8%) were found in the river bank and water points. Agaie, *et al* (2007) documented that (95.4%) of the plants were found around the farm and range lands while (4.6%) were exclusively found around the river banks and water points. The result also revealed that (69.6%) of the plants identified were shrubs while (30.4%) were tree plants. This is also different from the report of Agaie, *et al* (2007) in which (84.2%) of the poisonous plants were shrubs while (15.8%) were tree plants. This may however, be due to the differences in the savannah zones between Federal Capital Territory and Sokoto state.

In this study, (10.4%) of the respondents attributed the leaves as the poisonous part, (1.6%) to the seed while (88%) attributed it to the whole plants. This is different from the report by Agaie, *et al* (2007) in which (70%) of the farmers attributed the poisonous part to be leaves and barks, and that of Fred-Jaiyesimi and Ajibesin, (2012) who reported the toxic parts to include; leaf (43.9%), roots (13.2%), fruits (6.6%), and other parts such as sap/latex (14.3%).

From this study, it was found that some toxic plants have thorns (for example *Balanites aegyptiaca, Zizyphus mucronata)* which might prevent the animals from eating them due to physical trauma along with the phytotoxins while others have foul or offensive odor (for example *Momordica balsamina,* and *Cassia occidentals)*. From this study, some plants were identified to be harmful only at certain stage of their life such as the adult stage of *Andropogon guyanus*, which cause choking, and it may cause injury to the throat of the animal due to hair fibers developed at adult stage while the young stage are good pasture for animals. It was also observed during the survey that any plant that grows in a herd yards after relocation within a period of one to two years are highly toxic to the livestock this might be due to accumulation of toxic substances.

Many of the poisonous plants identified in this study have been reported elsewhere in the world as in the case of *Lantana camara* and *Datura spp* in Swaziland (Ogwang, 1997). Schvartsman, (1992) also reported separate groups of poisonings with significant mortality and morbidity after women used *Thevetia peruviana* to

induce abortion in Brazil and Indian.The result from this study is similar to the studies on plant poisoning from other cultures in South Africa and Ethiopia in which *Lantana camara, Argemone spp, Jatropha curcas, Abrus precatorius, Ficus spp, Amaranthus spp, Euphorbia ingens, Manihot esculenta, Cannabis sativa, Kigelia africana, Calotropis procera, Ageratum conyzoides, Zehneria spp, Vernonia amygdalina, and Capsicum annum* were identified (Botha and Penrith, 2008; Naude, *et al*, 1996; and Getahun, 1976).

The result from this study is also similar to the previous studies in Nigeria, particularly in Borno, Kaduna, Lagos, Anambra, Zamfara and Sokoto states in which *Cassia occidentalis, Calotropis procera, Mannihot esculenta, Ipomea asarifolia, Sorghum bicolar,* and *Erythrophleum africana,* were identified (Akobundu and Agyakwa, 1987; Agaie *et al,* 2007). Similar to this result, Ogwang, (1997) also reported poisoning from food plants like *Zea mays, Sorghum bicolar, Cassia tora,* and food processing plants like *Calotropis procera,* in Swaziland while Fred-Jaiyesimi and Ajibesin, (2012) has also reported *Cyathula prostrata, Vernonia amygdalina, Jatropha curcas, Calotropis procera, Ricinus communis,* and *Argemone mexicana* in Ogun state, Nigeria.

In this study, *Erythrophleum africana* was identified poisonous. Arbonnier, (2004) similarly reported the plant to be found Africa, Senegal, Sudan, Central Africa, Kenya, Tanzania and southern Africa, while in Zambia the foliage is reportedly used as a fodder but sources from many countries reported this plant to be toxic and livestock are kept away from it *(*Burkill, 1995 & Gelfand,*et al*, 1985). Similar to the report by (Watt and Bayer-Brnadwyle 1962, Dalziel 1959, Griffin,*et al.*, 1971, Loder,*et al.*, 1974), *Erythrophleum guineense* was also identified to be extremely toxic to all live stock. In this survey, *Datura metel* was found to be poisonous and similarly, Preissel and Preissel, (2002) reported the plant to be classic "witches' weeds", along with deadly nightshade, henbane, and mandrake, it has a long history of use for causing delirious states and death and most parts of the plants contain toxic hallucinogens.

Sacciolepis africana belonging to the family Poacea, commonly called Purple swamp grass and is locally known as Gayeri (Fulani) had been identified poisonous in this study, accounting to 14.4% of the total poisonous plants identified. Though there is no literature identifying this plant to be poisonous, toxicity may be due to climatic factors, soil and water conditions of the area it grows or accumulation of toxic substances. The plant is mainly found along the river banks and water points. It was found to produce gastrointestinal disorders which result in death.

Sacciolepis africana is one of important weed species in the three most prevalent rice production ecosystems in Africa (upland, hydromorphic and lowland) (Rodenburg and Johnson 2009; Rodenburg *et al*, 2011) and according to Burkill, (1985) it is commonly called Pepel (**Guinea-bissau)**, Mano (Liberia), Babaci (**Nigeria** hausa) and Koranko (**Sierra leone).** Burkill, (1985) also reported the plant that: In Sierra Leone it is fed in the dry season along with *Acroceras spp.* to horses; it is a weed of rice-padis in the Sokoto River area of North-East Nigeria and Sudan; it is a weed of corn-fields in Ethiopia; the green spikelet produce lather when rubbed in water, and are thus used as soap in Malawi while the grain is collected in Northern Nigeria for consumption in time of dearth. *Sacciolepis africana* was also found in **Ossiomo River in Edo state and** exhibit only vegetative growth (Bamidele **and** Nyamali**, 2008)**

Sacciolepis africana has been used in a research work by Ewemoje and Sangodoyin, (2009) along with *Canna Indica, R. Phragmites australis* in the treatment of primary lagoon effluent (sewage) in the University of Ibadan, Nigeria. Oluseyi, *et al* (2011)

The application of fuzzy comprehensive assessment (FCA) to integrate environmental contaminants in Agbara industrial estate, Nigeria, by Foluso *et al,* (2011) to measure the extent of impact of industrial activities on the host community in which Samples of water, plants (*Pteridium aquilinum*, *Sacciolepis africana*, and *Panicum maximum*), soil, and sediments were collected within the estate showed that the vegetation growth and the sediment precipitation were responsible for the cleaning-up of the pollutants discharged downstream. Also, the FCA of the plants indicated high metal bioaccumulation and does not only showed the plants' phyto-remediation potential but also that the metals may pose threats to human health through the food web. Cr was identified as the major contaminant (34–252 μgL^{-1}) while, high phosphate contributed to large plant growth in the area.

More so, a research work by Ikenaka, *et al,* (2010) in the University of Zambia on Metal and metalloid levels and bio-accumulation characteristics in soil, sediment, land plants and hippopotami (*Hippopotamus amphibius* L) from the South Luangwa National Park, Zambia, showed that hippopotami liver accumulated significantly higher concentrations of Hg compared to soil, sediment and their food (plant species that hippopotami graze include; *Sacciolepis africana*, *Panicum repens*, *Echinochloa colonum*, *Burnatia enneandra*, *Trichoneura grandiglumis*), most likely due to a process of biomagnifications throughout a trophic chain. Moreover, hippopotami liver and land plants showed significantly higher Cd levels than those of soil. These results strongly suggest that hippopotami liver accumulate higher levels of these metals if surrounding environment is contaminated. Levels of Cr and Ni in hippopotami liver were higher compared to other toxic metals (Ikenaka, *et al,* 2010).

Sacciolepis interrupta which is indigenous to Russia has been listed among noxious weed list for Australian states and territories prepared by the Australian weeds committee on June 2012 version: 26b.00, hence forth, it might not be a surprise of *Sacciolepis africana*

4.1 CONCLUSSION

Although there are 42 species of poisonous plants identified in this study, this is due to the familiarity of the herder and their animals with the poisonous plants through prior association. The benefit of this valuable resource cannot be over emphasized in familiarizing ourselves with the types of poisonous plants present in this locality out of thousands of poisonous plants found in the world. The accurate knowledge of toxic plants in this locality will help clinician in quick and accurate diagnosis, and management of plant toxicosis in FCT, Abuja. Some of the identified plants are used for food by man this include *Zea mays, Sorghum bicolar, Cassia tora,* while *Calotropis procera* is used for processing cheese (Ogwang, 1997). This study therefore, creates more awareness on these plants to the public so as to take care while consuming them or use them as alternative medicine and to encourage further studies on them.

RECOMMENDATION

It is recommended that further research be conducted to investigate the toxic principles in these plants and confirm their toxic effects. The reporting systems of toxicosis of any kind in both animals and humans should be enhanced and facilitated by Government at all level and financial support should be readily available for interested researchers. Standard toxicology diagnostic laboratory for quick and confirmatory diagnosis of toxicosis is also needed.

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Appendix A

QUESTIONNAIRE

The researcher is a final year student of faculty of Veterinary Medicine University of Abuja. The aim of the research is to identify various plants that are poisonous to our livestock animals within the federal capital territory, Abuja.

SECTION A:

DEMOGRAPHIC DATA

1. Location: ……..
2. Sex: (a) Male [ ] (b) Female [ ]
3. Age (years): (a) 20-30 [ ] (b) 31-40 [ ] (c) 41-50 [ ] (d) 51-60 [ ] (e) 61&above [ ]
4. Educational background: (a) Primary [ ] (b) Secondary [ ] (c) Tertiary [ ] (d) None [ ]
5. Marital status: (a) Married [ ] (b) Single [ ] (c) Divorce [ ]
6. Working experience (years): (a) 1-5 [ ] (b) 6-10 [ ] (c) 11-15 [ ] (d) 16-20 [ ] (e)21&above [ ]
7. Religion: (a) Christianity [ ] (b) Islam [ ] (c) Others specify [ ]
8. Tribe: (a) Yoruba [ ] (b) Hausa [ ] (c) Igbo [ ] (d) Fulani [ ] (e) Others specify [ ]

SECTION B

IDENTIFICATION OF POISONOUS PLANTS WITHIN THE FEDDERAL CAPITAL TERRITORY.

1. Name of the plant: Hausa name ……
   Vernacular name ……..
   Botanical name ……
   Fulani name ……
   Others specify ……..
2. Description of the plant
   i. Types: (a) Annual [ ] (b) Biannual [ ] (c) Perennial [ ]
   ii. Status: (a) Herb [ ] (b) Shrub [ ] (c) Fern [ ] (d) Tree [ ]
   iii. Flowering types: (a) Flowering [ ] (b) Non-flowering [ ]
   iv. Color of the flower: ……
   v. Time of flowering: (a) Raining season [ ] (b) Dry season [ ] (c) don't know [ ]
   vi. Types of fruit: (a) Dry [ ] (b) Fleshy [ ]
   vii. Type of fruit: (a) Simple [ ] (b) Aggregate [ ] (c) Multiple [ ] (d) Accessory [ ]
   viii. Time of fruiting: (a) Raining season [ ] (b) Dry season [ ] (c) don't know [ ]
   ix. Size of the leave: (a) Very small [ ] (b) Small [ ] (c) Big [ ] (d) Very big [ ]
   x. Shape of the leave: (a) Elliptical [ ] (b) Rounded [ ] (c) Narrow/elongated [ ] (d) Others specify [ ]
   xi. Height of the plant (cm): (a) <50 [ ] (b) 51-100 [ ] (c) 101-150 [ ] (d) 151&above [ ]
   xii. Mode of reproduction: (a) Seed [ ] (b) Vegetative [ ] (c) both [ ] (d) don't know [ ]
   xiii. Habitat: (a) Range [ ] (b) River bank [ ] (c) Water point [ ] (d) Farmlands [ ]
3. Is the plant known to be poisonous? (a) Yes [ ] (b) No [ ] (c) don't know [ ]
4. What form of the plant is poisonous? (a) Dry [ ] (b) Fresh [ ] (c) don't know [ ]
5. What specie of animal is / are known to be susceptible? (a) Cattle [ ] (b) Sheep [ ] (c) Goat [ ] (d) All of the above [ ] (e) Others specify [ ]
6. Is the plant readily eaten by the animal? (a) Yes [ ] (b) No [ ] (c) when other forage is not available [ ] (d) don't know [ ]
7. What part of the plant is poisonous? (a) Leaf [ ] (b) Stem [ ] (c) Root [ ] (d) Seed [ ] (e) Flower [ ] (f) Bark [ ] (g) Whole plant [ ] (h) don't know [ ]
8. What period of the year is the plant toxic? (a) Early [ ] (b) Middle [ ] (c) Late [ ] (d) don't know [ ]
9. What sign(s) do you observe during poisoning? (a) Respiratory [ ] (b) Nervous [ ] (c) Digestive [ ] (d) Integumentary [ ] (e) Genitourinary [ ] (f) Others specify [ ]
10. How do you manage it? ……
11. Is there any improvement? (a) Yes [ ] (b) Not much [ ] (c) No [ ]
12. What is the local use(s) of the plant? .....
13. What part of the plant is used? (a) Leaf [ ] (b) Stem [ ] (c) Root [ ] (d) Seed [ ] (e) Flower [ ] (f) Bark [ ] (g) Whole plant [ ] (h) don't know [ ]
14. Any other relevant information?

……
……
……

Thank you.

Appendix B

Jatropha curcas

Cassia occidentalis

Balanites aegyptiaca

Cassia tora

Calotropis procera

Azadirachta indica

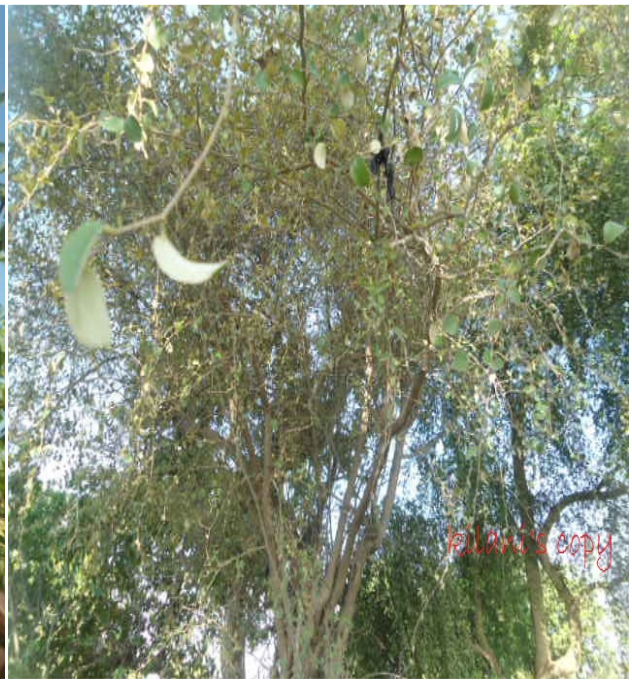
Nicotiana tabacum

Datura metel

Argemone mexicana

Thevetia peruviana

Lantana spp



Zizphus mucronata

Mannihot esculenta

Sacciolepis africana

Sorghum spp

Ricinus communis

Jatropha gossypiifolia

Leaves of Erythrophleum guineense

Leaves of Erythrophleum guineense And its leave branches

Euphorbia sepium

Odina barteri

Prosopis africana

Momordica balsamina

Andropogon guyanus

Ipomea asarifolia

Solanum americanum

Vernonia amygdalina

Fruits of Solanum americanum

Fruits of Datura metel

Fruit and Flower of Momordica balsamina

Cyathula prostrata

Flower of Calotropis procera

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