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The Pharmacological and nutritional activities of *Chromolaena.odorata* and *Tridax.procumbens* plant extract in wound healing

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Abstract
This study evaluated the Pharmacological, and nutritional activities of *Chromolaela odorata and Tridax procumbence* plant extract.A total of ninety seven (120), 8-weeks old male albino wistar rats (220g and 229g bw) were divided into different groups (control and treatment groups), 10g of pulverized plant extracts were homogenized in distilled water. The samples of the plant extract were soaked in ethanol and aqueous solvents. The percentage proximate composition of the moisture content, total ash, crude protein, total carbohydrate and crude fat were determined in all the plant extracts, and there was no significant different ($p<0.05$). Also the mineral compositions such as Calcium (Ca), Sodium(Na), Potassium(K), Phosphorus(P), Iron (Fe), Magnesium(Mg) and Zinc (Zn) of both the plant extracts were evaluated in (mg/kg). Moreso, the Vitamins B1(Thiamine), B2(Riboflavin), B3 (Niaci n), B6(Pyridoxine), C (Ascorbic acid), Biotin, Folic acid (Water Soluble) and Vit. A, D, E and K (Fat Soluble) in Mg/100g of *C odorata* and *T.procumbens* extract were analysed, ($P<0.05$). The effect of the plant extract on Liver enzymes were not altered significantly ($P>0.05$). Aspartate amino transferase(AST), Alanine amino tranferase (ALT), Alkaline Phosphatase (ALP), Acid Phosphatase (ACP), Lactate dehydrogenase (LDH) and Gamma-glutamyl Transferase (GGT) in comparison at (7-21 days). There was no significant reduction in haemoglobin (Hb), Packed cell volume (PCV), Mean cell volume (MCV), Mean cell haematocrit (MCH), White blood count (WBC), Lymphocyte (LYMP) and Neutrophile (NEUT) Compared with the control in all the plant extracts used. There was significant decrease ($P>0.05$) in Total cholesterol (TC), Triglyceride (TG), High density lipo protein (HDL) and Low density lipoprotein (LDL), except marginal increase in at 21days of treatment.

Keywords: Haemoglobin; *Chromolaena odorata; Tridax procumbens*; Optical and treatment

Introduction

Wound healing

Wound healing is the process of re-establishing the integrity of damaged skin. It is an orderly intricate process initiated by a damaged tissue itself, and it involves complex mechanisms which include: Hemostasis, inflammation, proliferation, and remodeling. Each of these mechanisms requires several biochemical substances to occur. Thromboxane A2 and plasminogen activator inhibitor Type 1 ensures hemostasis, and heme proteins trigger expression of adhesion molecules, leukocytic infiltration, and release of reactive oxygen species (ROS) also called toxic free radicals or oxidants. The oxidants are detrimental to wound contaminating microorganisms and to the skin tissue itself especially when in excess. Hemeoxygenase-1 elicit antioxidant effect and scavenge (mop-up) the toxic free radicals, while matrix metalloproteinase ensures remodeling of the extracellular matrix. The length of time it takes for wound healing to be optimum and complete is determined by factors such as availability of the needed biochemical substances, presence or absence of contaminating microorganism(s), and the toxic free radicals in the wound bed.

Plants have been the basis of traditional medicine system which has been used for thousands of years. Traditional medicine refers to health practices, approaches, knowledge and beliefs incorporating plant, animal and mineral based medicines, spiritual therapies, manual techniques and exercises, applied singularly or in combination to treat or to diagnose and prevent illness or maintain wellbeing (WHO, 2012). In developing countries where orthodox medicines are quite expensive, traditional medicine is widely practiced thus, screening for antimicrobial active compounds from plant is vital so as to ascertain genuine active plants and active compound. Ultimately, the antimicrobial and antioxidants have find their way into the arsenal of antimicrobial drugs prescribed by physicians (Cowan,and Steel 2003).

This study will be investigated for the Pharmacological and Nutritional activities of *Chromolaena odorata* and *Tridax procumbens* plant extracts in wound healing.

Materials and Method

A total of 120, 8-week-old male albino Wistar rats weighing between 220 and 229 g were obtained from the laboratory animal unit, Faculty of Veterinary Medicine, University of Nigeria, Nsukka. They were fed on commercial growers mash (Top feeds®) and water was provided *ad libitum*. These rats were acclimatized for 2 weeks in the animal house at the Department of Veterinary Surgery, University of Nigeria, Nsukka.

Plant Collection and Identification

Fresh *C. odorata and Tridax procumbens* leaf and stem bark were collected from Iyiowa Odekpe town in Ogbaru Local Government Area Anambra State, Nigeria, in the month of February, 2016 and was identified at the International Center for Ethnomedicine and Drug Development (InterCEDD), Nsukka, by a plant taxonomist.

Extraction of the plant

One kilogram (kg) each, of the *C. odorata and T.procumbens* leaves and stem bark was washed with clean tap water and rinsed with distilled water. After that ,they were sliced into smaller pieces; air dried with hot air oven (GL, England) at room temperature of 35 degree for 2 weeks and then pulverized using the laboratory grinding machine at the, Department of Food Science and Technology, Abia State University Uturu. The pulverized leaves and the stem bark were soaked in 70% ethanol and aqueous solution (hot water) respectively for 48 h with intermittent vigorous shaking. After 48 h, the mixtures was filtered using whatman no.1 filter paper and the extract concentration was produced using a rotary evaporator set at 40°C. The dried samples

were weighed and the percentage yield was calculated. The extracts was stored at 4°C in a refrigerator (Sofowara, 1993, Yogeshi *et. al*., 2012)

Ethanol Extract

Ten grammes (10g) of the leaf and stem bark were washed with clean tap water and rinsed with distilled water .They were blended into smaller pieces; air dried with hot air oven (GL, England) at room temperature for 2 weeks and then pulverized leaf were weighed using Satoric AG Gottingen Electronic Weighing balance. The weighed samples of *C.odorata* and *T.procumbens* leaf and stem bark was soaked in 100mls of ethanol (80%) in a conical flask. The mixture was swirled after 24h elaption with interval stirring. The mixture was filtered using Whatman no.1 filter paper into a clean beaker. The ethanol was recovered using a soxhlet apparatus and it was finally evaporated to dryness using a steam bath at 100^0C. Ethanol has dark brown colouration after extraction (Azoro, 2002)

Aqueous Extract

Ten grammes (10g) of the pulverized leaves and stem bark were weighed and macerated in 100ml of distilled water. The mixture was vigorously swirled. After the elaption of 24h with interval stirring, the mixture was filtered using Whatman No.1 filter paper into a clean beaker, and the filterate was concentrated to dryness by evaporation using the steam bath at 100^0C.The filterates has the dark green colouration

The dried samples was weighed and the percentage yield was calculated (Sofowara, 2008).

Proximate Analysis of the Plant Extracts

Proximate Analysis: The nutritional analysis comprises the moisture content, Ash content, Crude proteins, Carbohydrate content and Crude fat content were all investigated using a multi-digital analyzer machine (digital SSR 3200 England..

Mineral Compositions

Mineral content was determined by method of the Association of Official Analytical chemist (AOAC, 2010) using the flame system of the atomic absorption spectrophotometry (ASS), (Varian SpectrAA 220, USA). *C.odorata and Tridax procumbens* leaf and stem bark were ashed at 550^0C overnight and the ash was dissolved in concentrated nitric acid and filtered, diluted to 50ml with deionized water and the absorbance of the samples were read directly on the AAS. Working standard solutions of calcium (Ca), Potassium (K), Iron (Fe), Sodium (Na), Phosphorus (P) and magnesium (Mg) were prepared from stock standard solution (1000ppm), in 2N HNO_3 and absorbance was noted for standard solution of each element and samples using atomic absorption spectrophotometer (AAS). The wavelength used for various elements in the standard solution prepared from pure salt samples were as follows:

(Na =589nm, Ca =422.7nm, Zn = 213.9nm, Mg =285.2nm, K=766.5nm, Fe =284nm)

Graphs obtained by plotting the concentration of standard solution (ppm) against their absorption spectra (calibration cone) was used in correcting the concentrations of mineral element and expressed in mg/100ml of the solution wet ash.

Free radical scavenging activity plant extracts (in-vitro)

About 2.5ml of the various concentrations of the plant extract *C.odorata* and *T.procumbens* were mixed with 5ml of 0.1Mm DPPH solution, the tubes were shaked properly and incubated for 20mins. In the dark. The changes in the absorbance of the sample was measured at 517nm using a Spectrophotometer. The radical scavenging activity of the extract at different concentrations were determined and compared with that of butyl hydroxyl anisole which was used as the standard (Draper and Hardly 2007)

Enzymatic Antioxidant effect of the plant extracts

Wound specimen was taken from 3 animals groups, and was placed in 10% paraffin buffered solution(PBS) and was used for biochemical assays of Catalase (CAT),Super oxide dismutase (SOD) and Malondiahyde (MDA) respectively (Okore, 2004).

Lipid Peroxidation

About 1ml of 14% of Trichloroacetic acid was measured into a test tube, 1ml thiobarbituric acid (0.6%) was added with 50microliters of the tissue (blood) homogenate. The mixture were incubated at 80^0C for 30min and was centrifuged at 300 x g for 19min.Malondialdehyde(MDA) was measured at 535nm,and the level of lipid profile of the low density lipids (LDL), high density lipids(HDL), tricygeride and total cholesterol were calculated on different days of treatment using the molar extinction coefficient of malondialdehyde. Draper and Hardley, (2007).

Results

Table1: **Percentage proximate compositions of the plant extract**

	LEAF		STEMBARK	
Parameter (%)	C.O w/w(g)	DW(g)	T.P w/w(g)	DW(g)
Moisture	89.2 ± 0.02	-	87.7 ± 0.01	-
Total Ash	0.20 ± 0.00	4.30 ± 0.02	0.80 ± 0.02	4.20 ± 0.02
Crude Protein	4.80 ± 0.02	36.57 ± 0.02	6.35 ± 0.03	35.00 ± 0.07
Total Carbonhydrate	5.230 ± 0.01	51.30± 0.07	5.75 ± 0.01	60.02 ± 0.02
Crude Fat	0.61 ± 0.02	6.13 ± 0.03	0.40 ± 0.01	0.80± 0.02
TOTAL ENERGY (Kcal/100g)	37.62 ± 0.0	397.54 ± 5.20	39.56 ± 0.26	321.54 ± 5.21

Keys:
C.O *Chromolaela odorata*
T.P *Tridax procumbens*
WW Wet weight,DW=Dry weight

Table2: **Percentage proximate compositions of the plant extract**

	STEMBARK		LEAF	
Parameter (%)	C.O w/w(g)	DW(g)	T.P w/w(g)	DW(g)
Moisture	89.5 ± 0.02	-	88.7 ± 0.01	-
Total Ash	0.22 ± 0.00	4.30 ± 0.02	0.83 ± 0.02	4.60 ± 0.02
Crude Protein	4.90 ± 0.02	36.57 ± 0.02	6.35 ± 0.03	36.00 ± 0.07
Total Carbonhydrate	5.30 ± 0.01	53.30± 0.02	5.75 ± 0.01	62.02 ± 0.02
Crude Fat	0.63 ± 0.02	6.16 ± 0.03	0.40 ± 0.01	0.83± 0.02
TOTAL ENERGY (Kcal/100g)	37.62 ± 0.0	397.54 ± 5.20	39.56 ± 0.26	321.54 ± 5.21

Keys:
C.O *Chromolaela odorata*
T.P *Tridax procumbens*
WW Wet weight,DW=Dry weigh

Table3 Percentage mineral composition of the plant extracts *Chromolaela odorata* and *Tridax procumbens*

(Composition mg/kg)				
Minerals	Leaf C.O w/w	DW	Stembark T.P w/w	DW
Calcium (Ca)	20.09	20.96	1.96	10.56
Sodium (Na)	5.02	50.44	3.20	32.24
Potassium (K)	3.18	31.92	2.15	20.30
Phosphorus (P)	4.8	40.23	3.2	6.53
Iron (Fe)	5.0	52.30	4.2	10.21
Magnesium (Mg)	5.20	3.56	3.2	2.63
Zinc (Zn)	6.02	42.6	5.6	33.02

W/w = Weight-Weight, DW=Dry weight, CO=Chromolaela odorata, TP=Tridax procumbent

Table: 4. Percentage mineral composition of the plant extracts *Chromolaela odorata* and *Tridax procumbens*

(Composition mg/kg)				
Minerals	Stembark C.O w/w	DW	Leaf T.P w/w	DW
Calcium (Ca)	22.09	20.96	1.96	10.56
Sodium (Na)	4.03	52.44	3.20	32.24
Potassium (K)	3.29	30.92	3.15	22.30
Phosphorus (P)	4.5	40.5	5.5	6.71
Iron (Fe)	7.0	54.30	4.3	12.27
Magnesium (Mg)	5.43	4.56	3.2	2.64
Zinc (Zn)	6.04	43.6	6.6	37.12

Table 5. The vitamin composition of leaf extracts of the plants

VITAMIN ELEMENTS	*Chromolaela odorata*				*Tridax procumbens*			
	FRESH LEAF EXTRACT		DRY		FRESH STEMBARK EX		DRY	
	Amount mg/100g	%Dv	Mg/100g	%Dv	Mg/100g	%Dv	Mg/100	%Dv
	WATER SOLUBLE							
B_1(thiamine)	0.0053	0.33	0.0131	0.81	0.0053	0.35	0.0536	3.45
B_2 (riboflaving)	0.00822	4.66	0.2030	11.50	0.0448	2.65	0.4602	26.30
B_3 (niacin)	0.3945	1.97	0.9741	4.87	0.1241	0.64	1.2572	6.25
B_6 (pyridoxin)	0.0060	0.32	0.0148	0.78	0.0039	0.30	0.0385	2.02
C (ascorbic acid)	49.6490	55.18	122.59	136.20	10.620	12.80	106.7507	119.65
Biotin	0.0299	99.67	0.0738	240.0	0.0042	15.00	0.0426	140.00
Folic acid	0.0125	3.10	0.0309	6.50	0.0014	0.30	0.0135	3.50
	FAT SOLUBLE							
A	0.0104	1.32	0.0265	3.25	0.0051	0.64	0.0513	6.50
D	0.0000	0.00	0.00	0.00	0.0000	0.00	0.00	0.00
E	0.0161	0.05	0.0403	0.206	0.0019	0.01	0.0191	0.20
K	0.0436	55.20	0.1077	124.65	0.0058	7.35	0.0581	75.6

Table 6. The vitamin composition of stemback extracts of the plants

VITAMIN ELEMENTS	CHROMONELLA ODORATA				TRIDAX PROCUMBENS			
	FRESH STEMBARK		DRY		FRESH LEAF EXTRACT		DRY	
	Amount Mg/100g	%DV	Mg/100g	% Dv	Mg/100g	% Dv	Mg/100g	% Dv
	WATER SOLUBLE							
B_1 (Tannin)	0.025	0.32	0.020	0.92	0.0053	0.35	0.0620	3.35
B_2 (Riboflavin)	0.053	3.88	0.200	10.25	0.0448	2.65	0.462	24.40
B_3 (Niacin)	0.2565	1.26	0.9520	4.35	0.1241	0.64	1.2572	6.25
B_6 (Pyridoxin)	0.0058	0.31	0.0135	0.78	0.0039	0.30	0.0385	2.02
C (Ascobic) acid	49.6490	53.18	132.59	136.20	10.6200	12.80	106.7507	119.65
Biotin	0.0299	99.52	0.0738	240.0	0.0042	15.00	0.0426	140.00
Folic acid	0.0032	2.1	0.0309	6.50	0.0014	0.30	0.0135	3.50
	FAT SOLUBLE							
A	0.021	1.30	0.0265	3.25	0.0051	0.64	0.0513	6.50
D	0.0000	0.00	0.00	0.00	0.0000	0.00	0.00	0.00
E	0.0250	0.05	0.0403	0.206	0.0019	0.01	0.0191	0.20
K	0.0331	55.20	0.1077	124.65	0.0058	7.35	0.0581	75.60

Key:
DV = DAILY VALUE

Table 7. The antioxidant effect of *C. odorata* leaf extract in wound tissue of the albino rat after treatment

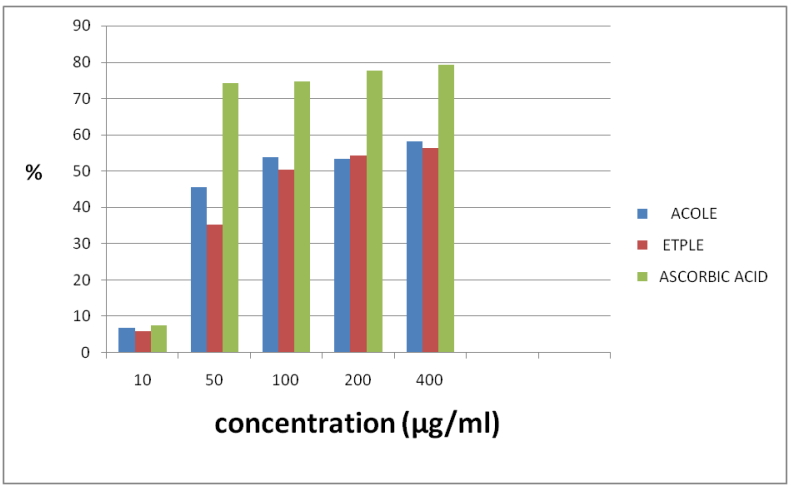
GROUPS	MDA(nmol/g)	SOD(nmol/g)	CAT(µ/mg)
A	16.30±1.22		
B	22.50 ± 1.02^{b}	6.2 ± 1.2^{b}	102.6±2.70
C	26.70 ± 2.06^{cc}	6.0±0.04	122.38 ± 3.00^{a}
D	**24.30 ± 2.02^{a}**	**3.5 ± 0.25^{a}**	**125.35 ± 3.00^{a}**

D= Control
VALUES WITH DIFFERENT SUPERSCRIPT SIGNIFICANT (P<0.05)
KEYS
MDA = Malondialdehyde
SOD = Superoxide
CAT = Catalase
A-D=Groups

Table 8. The antioxidant effect of *t. procumbens* stembark extract in wound tissue of the albino rat after treatment.

GROUPS	MDA(nmol/g)	SOD(nmol/g)	CAT(µ/mg)
A	18.25 ± 1.05^{a}	3.6 ± 0.42^{a}	136±2.30
B	26.35 ± 1.05^{b}	7.3±1.06	106 ± 2.61^{b}
C	25 ± 1.36^{c}	5.6 ± 0.25^{c}	7.3 ± 2.45^{c}
D	**22.5±1.76**	**2.7 ± 0.15^{a}**	**132.4±2.83**
D= Control			

Values with different superscript significant (P<0.05)
Keys
MDA = Malondialdehyde
SOD = Superoxide
CAT = Catalase
A-D=Groups



Discussion

Knowledge of the phytochemical constituent of plant is desirable not only for the discovery of therapeutic agent, but also because such information may be of value in disclosing new sources of economic materials. In addition, the knowledge of the chemical constituents of plant would further be invaluable in discovering the actual value of forklore medical remedy. Phytochemical identified from traditional medicinal plant are presenting an exciting opportunity for the development of new types of therapeutics. This has accelerated the global effort to harness and harvest those medicinal plant that bear substantial amount of potential phytochemicals showing multiple beneficial effects. (IwU1986, Tiwari and Rao 2002).

In the proximate composition of the leaf and stem bark extract of *C.odorata* and *T procumbens* observed a higher protein content than those reported for *A. hybridus*, *T. occidentalis*, *T. triangulare* (Oguntona, 1998) and *P. purpureum* (Okaraonye and Ikewuchi, 2009); although this is lower than the value earlier reported for the same plants by Apori *et al*. (2000). The total fat content of *C. odorata* is less than those found in *A. hybridus*, *T. occidentalis*, *T. triangulare* (Oguntona, 1998) and *P. purpureum* (Okaraonye and Ikewuchi, 2009). Its total carbohydrate content is greater than those of *A. hybridus*, *T. triangulare* (Oguntona, 1998) and *P. purpureum* (Okaraonye and Ikewuchi, 2009). Crude fat content recorded in this study is greater than those reported for *A. hybridus*, *T. occidentalis*, *T. triangulare* (Oguntona, 1998) and *P. purpureum* (Okaraonye and Ikewuchi, 2009). Some epidemiological evidences suggest that decreased fat consumption may contribute to a reduction in the incidence of certain diseases including colon cancer, **coronary heart disease**, diabetes, high **blood pressure**, obesity and various digestive disorders (Walker, 1978; FAO, 1990; Eriyamremu and Adamson, 1994; SACN, 2008). They increase fecal bulk and rate of intestinal transit and have prebiotic effects. We observed a lower ash content (0.22%) in C.odorata stem bark than was reported for *A. hybridus* and *T. occidentalis*, although greater than those reported for *T. triangulare*(Oguntona, 1998) and *P. purpureum* (Okaraonye and Ikewuchi, 2009). The total **metabolizable energy** (Kcal/100g) in *C. odorata and T.procumbens* are greater than those of *A. hybridus*, *T. triangulare* (Oguntona, 1998) and *P. purpureum* (Okaraonye and Ikewuchi, 2009). Table 1 and 2.

The mineral composition of *T. procumbens and C.odorata* leaves and stembark extract is shown in **Table 3** and **4**. The calcium of *C .odorata* content is less than that reported for *Boerhavia diffusa* and *Commelina nudiflora* (Ujowundu *et al.*, 2008). It contains less sodium than that reported for *B. diffusa* and *C. nudiflora* (Ujowundu *et al*., 2008).

Its potassium, zinc and iron content in both plants extract are more than those of *B. diffusa* and *C. nudiflora* (Ujowundu *et al*., 2008). The level of magnesium recorded here is less than those of *B. diffusa* and *C. nudiflora* (Ujowundu *et al*., 2008).Comparatively, C. odorata has the highest biotin content, while T. procumbens has the least. Their biotin content is comparable to that of groundnut [Elegbede, 1998]. A 100g serving of A. wilkesiana Can provide about 80.33-189.33% of the RDA, while those of C. odorata and T. procumbens are 99.67-246% and 14.00-142.00% respectively (Table 1).
Comparatively, C. odorata has the highest biotin content, while T. procumbens has the least. Their biotin content is comparable to that of groundnut [Elegbede, 1998]. A 100g serving of A. wilkesiana can provide about 80.33-189.33% of the RDA, while those of C. odorata and T. procumbens are 99.67-246% and 14.00-142.00% respectively Comparatively, *C. odorata* has the highest biotin content, while *T. procumbens* has the least. Their biotin content is comparable to that of groundnut [Elegbede, 1998]. A 100g serving of A. wilkesiana can provide about 80.33-189.33% of the RDA, while those of *C. odorata* and *T. procumbens* are 99.67-246% and 14.00-142.00% Comparatively, C. odorata has the highest biotin content, while T. procumbens has the least. Their biotin content is comparable to that of groundnut [Elegbede, 1998]. A 100g serving of A. wilkesiana can provide about 80.33-189.33% of the RDA, while those of C. odorata and T. procumbens are 99.67-246% and 14.00-142.00% respectively. Comparatively, C. odorata has the highest biotin content, while T. procumbens has the least. Their biotin content is comparable to that of groundnut [Elegbede, 1998]. A 100g serving of A. wilkesiana can provide about 80.33-189.33% of the RDA, while those of C. odorata and T. procumbens are 99.67-246% and 14.00-142.00% respectively (Table 1).
C. odorata has the highest folic acid in dry sample (6.50%) content, followed by T. *procumbens*. They all have lower folic acid content than groundnut [Elegbede, 2008]. The folic acid content of *C. odorata stembark extract and T. procumbens* are lower than that of cashew nut [Nutrition Data, 2008], while that of *C. odorata* is comparable to it. A 100g serving of *A. wilkesiana* can provide about 1.30-3.10% of the RDA, while those of *C. odorata and T. procumbens* are 3.10-7.70 and 0.30-3.40% respectively (**Table 5 and 6**). *C. odorata* has the highest content of vitamin A per 100g wet weight, *while T. procumbens* has the highest content per dry weight. *C. odorata* has the highest vitamin E content per 100g wet weight, while *T. procumbens* has the least. Their vitamin E content is lower than those of groundnut [Elegbede, 1998] and cashew nut [Nutrition Data, 2008]. It means that 100g of fresh/dry *T procumbens* and *C. odorata* can meet the recommended daily allowance (RDA) for vitamin E (8mcg) [FC&A, 1997], *C. odorata* has the highest vitamin K content, while *T procumbens* has the least. *C. odorata* has higher vitamin K content than cashew nut [Nutrition Data, 2008], and also T. *procumbens* is comparable. A 100g serving of *T.procumbens* can provide about 0.13-0.38% of the RDA, while those of *C. odorata* are 54.50-134.63% respectively (Table 12). Thus, 100g of dry *Chromolaena odorata* can meet the RDA for vitamin K (80mcg) [FC&A, 1997 The wound contraction of the ethanolic leaf and stem bark extract of *C .odorata* and *T procumbens* on wound healing shows that the concentration of the extract is directly proportional to the time of healing..Both the plant were able to close the wound at lower concentration ranging from 1%,0.5% and 0.25% respectively which indicate significant $P<0.05$ and is in agreement with the report of Akinpelu *et al.*,2004) in *Dacryoides edulis.****Fig.1.***
The wound contraction of C odorata and T procumbens extract shows that the concentration of the extract has more impact than the control, which is in agreement with the previous work of (Essien and Okoye, 2009) and it show significant different $P<0.05$**).**
The effect of the *C.odorata* ointment on rats shows that gentamycin ointment and 20%and 10% concentration of the C.odorata ointment gave a progressive result with increase in treatment days of 3,7,14 and 21 days .It suggest all the treatment had an effect on the wound. So many authors reported the same trend in *T triangulare* and *Alium sepa.*

The effects of the decreased in packed cell volume (PCV), (Hb), and (RBC) caused by aqueus crude extract of T.procumbens suggest that the aqueus has adverse effect on the erythron of wistar albino rat and may cause anaemia of normocytic normochromic disease. Also the decrease observed in the lymphocyte count caused by administration of the extract signifies lymphopaenia which immune-suppressive effect. (Akin *et al.*, 2007).

Conclusion

In this study,the plant extracts of *C. odorata* and *T. procumbens* contains some pharmacological and nutrients such as :Carbohydrate,ash content,moisture content,that may have relatively strong antioxidant and antibacterial properties,hence the need to exploit the potentials of this plant extract in this area of traditional medicine and pharmaceutical industries.The extracts also have some healing potentials when administered to the models without any toxic effect. Pharmacological evaluation of the extract on haematological parameters ,lipids profile , kidney and liver enzyme did not negatively affect the organs However, *C.odorata* and *T.procumbens* extracts have antidiabetic potentials.

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