

EFFECTS OF THREE INDEGENOUS PLANT EXTRACTS AGAINST HELMINTH IN ANIMAL DUNG (COW) AT ABBAITORIN ILARO SOUTH, OGUN STATE, NIGERIA.

Adewole Adekanmi and Abiaziem C. Vivan

Department of Science Lab. Technology

Federal Polytechnic, Ilaro.

email: adewolejak@gmail.com

ABSTRACT

Helminthes are parasitic infections that infect the intestine and the disease is especially prevalent in developing countries including Nigeria. Three indigenous Plants of *Caricapapya*, *Zingiber. officinale* and *Momordicacharantia* were evaluated for their potency to control helminthes in cattle. The extracts of the plants were analyzed for their Phytochemical contents: Alkaloids, Saponin, Terpenoids, Flavonoids and Cardiac glycoside were all present. Further results on the efficacy of the plants extracts shows that all the Plants had anti-helminthic properties at various concentrations of the extracts.

Keywords: *Caricapapya*, *Zingiber. officinale* and *Momordicacharantia*, helminthes.

INTRODUCTION

A parasite is a unit or multicellular animal or plant which either temporarily or permanently live in (endo) or on (ecto) the host. Helminthes are parasitic infections that infect the intestine and the disease is especially prevalent in developing countries in association with poor management practices and inadequate control measures

(Akhar, 2000). The most important predisposing factors of Helminthes infections are grazing habits, climate, nutritional deficiency, pasture management, immunological status, vector, presence of intermediate host, and the number of infective larvae and eggs in the environment (Radostitset *al.*, 1994). Helminths also commonly known as parasitic worms are large multicellular organisms, which when mature can generally be seen with the naked eye (Oyedeji 2016). The most important predisposing factors of helminth infections are grazing habits, climate, nutritional deficiency, pasture management, immunological status, vector, presence of intermediate host, and the number of infective larvae and eggs in the environment (Radostitset *al.*, 1994).

Helminthosis in ruminants is caused by different nematode worms such as *aemonchuscontortus*, *Trichostrongyluscolubriformis*, *Ostertagiacircumcincta*, *Oesophagostomum*, *Bunostomum* and *Cooperiaspp* (Soulsby, 1982).

One of the major constraints to the production of ruminants in Nigeria and other places is due to helminthes infections which has caused great economic losses.(Akerejola et al, 1979, Okun et al, 1980).Plants have been known to be good herbal remedies in the treatment of various ailments in man and domestic animals. This has long been recognized by local people and herdsmen from the earliest time who have made various attempts at control through the use of medicinal plants (Ibrahim et al, 1983). One of the reasons why attention has been shifted to local herbs in the treatment of cattle infections include; the ineffectiveness of available anthelmintic due to resistance. The worms are to survive treatment at a dose that they were previously sensitive to. Resistance to drugs has risen from under dosage, misuse and mass administration of a drug.

The three plants of *Caricapapya* , *Z.officinale* (*Stem extracts*)and *Momordicacharantia* (leave extract) have anti-infection potentials in both man and domestic animals therefore the research aim to seek to a new treatment of helminthes using plant extract which has been used by several communities traditionally to treat roundworms.

MATERIALS AND METHODS

Animal dung, plant extract, Petri dish, test tube, normal saline, ethanol, cotton wool, syringe, slide, cover slip, microscope.

Plant Collection

Fresh and healthy leaves of the medicinal plants were collected from Ilaro area, Ogun state, Nigeria. It was washed and air dried in the laboratory for 7days. The dried leaves was macerated, dry and ground into fine powder using waring blender , dry super-master, disinfected with 95% ethanol.

EXTRATION OF PLANTS MATERIALS:

The ground plants was separated by submerged in 10ml 95% contained in round bottom flasks, the flasks was stopped and left to stand for 24hrs. The extracts were then filtered into a beaker using what man filter. The filtrates was then concentrated to a pastry form by mildly heating in the beaker at 80^oc to evaporate the solvent. The pastry residue was dried to a constant weight at 65^oc in an oven before being started in the refrigerator at 5^oc (Tonk et al., 2006, Obi et al., 2012).

COLLECTION OF ANIMAL DUNG:

Faeces from abattoir (Ilaro) was collected in triplicates with clean 2l conical flasks and taken to the laboratory for analysis.

PRE-EXAMINATION OF FAECES SAMPLES:

The faecal samples were pre-examined for the presence of egg/ova and adult helminthes using standard methods of examination of faeces. Among those screened were *Strongyloides species*, *Trichuris species*, *Chabertia species*, *Ostergia species*, *Ascaris species*, *Chabertiaspecies*, and *Haemoncus species*.

In Vitro Treatment of Helminth Eggs with the Different Grades of Extract Concentration:

1g of this samples each was placed in a petri dishes and in each of this 10gram of extract that had already been diluted with 10ml of distilled water was added into the faecal samples. This was repeated for 15, 20, 25 and 30 gram of the extracts in different petri dishes of the extracts with 1gram of the faecal samples. The 6th Petri dish which served as the control was added 10ml ml of distilled water to the 1gram of the faecal samples.

This was allowed to stand on the laboratory bench undisturbed and viewed microscopically according to standard methods at 2hrs intervals. The control only consists of distilled water without the extracts. Following the treatment of the faeces with the plant extracts, rate of distortion/paralysis of ova/adult helminthes respectively was monitored for 12hrs.

RESULTS

Table 1: Phytochemical screening of the Plants

Parameter	C.papaya (seed extracts)	Z.officinale(Stem extracts)	<i>Momordicacharantia</i> (leave extract)
Alkaloids	++	++	++
Cardiac glycosides	++	++	++
Flavonoids	++	++	++
Saponins	++	++	++
Tannins	++	--	++
Terpenoids	--	++	--

++ Presents

-- Not Presents

Table 2: Motility of the parasite against different concentration of the extracts

Dosage	Pawpaw	Officinale	M.charantia
10	75	85	72
15	55	80	65
20	40	73	61
25	25	63	58

Motility = Initial count - count after addition of a concentration

Table 3: Mortality of the Parasite at different conc.

Concentration	Pawpaw	Officinale	M.charantia
10	10	2	5
15	25	10	15
20	50	13	22
25	70	17	27

Mortality = No of death/Total number of count * 100

DISCUSSION

The medicinal values of certain plants lie in some chemical substances that they are made up. The most important of these bioactive constituents of plants are flavonoids, tannins, alkaloids and foods plants sometimes added to foods (Kokowaro, 1996). This research shows that the extracts of all the plants contain alkaloid, glycoside, flavonoids, saponins and terpanoids. The antihelmintic properties of the extracts of the plants in this study indicate that they can be used as an agent in the control of helminthes. This observation is in agreement with that of Goto et al. (1990) who reported lethal effect of *Z. officinale*. Also Ostunfund et al.,(2003) had earlier reported a similar results that indicated the anti-helminthic properties of *Z.officinale* and the antimicrobial properties particularly against fungi and additionally against bacteria and protozoa .

The results obtained in the research shows that all the plants possess anti-helminthic properties which varies with different concentration. The results support previous studies suggesting that the plants may have potential as an anthelmintic against parasites. It has been suggested that anthelmintic efficacy of *Papaya* might be due to presence of proteolytic enzyme such as papain.

Reduction of worm load by the extracts of the three plants used in this is a positive and welcome development in combating the effects of helminthes in farm animals. The easy access to this plant and its availability might mean that the cost of medication would have been drastically reduced. While many of the traditionally used anthelmintic plants have been evaluated for their putative anthelmintic activity, several other such plants still need to be documented and their efficacy established under controlled experimentation.

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