Prevalence of *Taenia saginata* (cysticercosis) of cattle in Bali Local Government, Taraba state

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Abstract: Taenia saginata **is considered as the most widely distributed human tapeworm worldwide. The cases of *T. saginata* in humans is considered to be of clinically less important compared to *T. solium*, another food-borne parasite from the same genus, since it only causes taeniasis,. This research work is carried out to determine the prevalence of *Teania saginata* of cattle in Bali Local Government, Taraba state. 1000 feacal samples were collected and analyzed using simple percentage. Out of the 1000 samples collected, 713 (71.3%) were found infected with T *saginata*, whereas 281 (28.1%) were found negative in the whole study area. Out of the 300 sample collected from Bali town, 212 (70.7%) prevalence were found positive whereas 82 (27.33%) were found negative. A total number of 300 sample were collected from Garba Chede out of which 262 (87.3%) were positive and 38 (12.7%) were negative. This results presents that Garba Chede has the highest prevalence rate whereas Mai Hula has the lowest prevalence rate within the study area. The prevalence of *Taenia saginata* base on age of animals shows that the highest prevalence 619 (84%) was found in old animals whereas the lowest 381 (50.6) was found in young animals below four years. This study revealed that there is a high prevalence of Teania saginata in the study area. It is therefore recommended that strategic prevention of *Taenia saginata* such as quarterly deworming of cattle should be initiated to in the study area**

Keywords: **Teaniasis, cattle, Bali, Effects, sex, fecal, sample.**

I. INTRODUCTION

Taenia saginata has been listed by World Health Organization (WHO) and Food and Agriculture Organization of the United Nations (FAO) as one of the most widely distributed tapeworm for human worldwide, which causes more than 60 million disease infection of humans annually (FAO/WHO 2014). Bovine Cysticercosis affects bovine's species and is caused by the larval stage of the tape worm (Geysen *et al*. 2007). This is a disease of both humans and animal. Human beings are also infected with *Taenia saginata* when they feed on uncooked parasite from infected meat of a cattle. The cases of *T. saginata* in humans is considered be of clinically less important compared to *T. solium*, another food-borne parasite from the same genus, since it only causes taeniasis, and not cysticercosis like *T. solium* does (Dorny *et al*. 2009). This disease condition in human is as as a result of domestication of cattle around 10,000 years ago. The aim of this current study is to assess the prevalence of *Taenia saginata* (cysticercoses) in cattle population in the study area.

II. METHODOLOGY

Description of study area

This study was conducted in Bali local government Taraba state. Bali has a total land mass of 9,46km and population of 208,935 (2006, census). It has temperature ranging 32°c 34°c, annual rainfall of 1000-1200mm for seven month with mean monthly rainfall recorded about 22mm per month at peak (August and September). (Taraba dairy, 2006)

Sample collection and examination

A total of 1000 faecal samples consisting of samples from male and female white Fulani cattle was collected from Bali metropolis, Taraba state Nigeria in the month of April. Fresh faecal materials was collected directly from the rectum of the

animals using a pair of hand gloves. The samples was quickly taken to the biology laboratory Federal Polytechnic Bali. Each of the samples was clearly labelled with the animal's identification, sex and age.

In the direct faecal smear, watery stools was smear on a slide and view under the microscope while the formed stool was dissolved using distilled water, and then smear on a slide view under the microscope.

The eggs of the *Taenia sagina* was identified under microscope morphologically base on the description of Monica Cheesbrough. Data obtained was subjected to descriptive analysis using simple percentage.

III.   RESULTS AND DISCUSSION

RESULTS

This study used a total of 1000 indigenous breed (white Fulani) predominantly found within selected area in Bali. Out of the 1000 samples collected, 713 (71.3%) were found infected with T *saginata*, whereas 281 (28.1%) were found negative in the whole study area. Although, the study targets selected districts within Bali Local Government such as Bali Town, Garba Chede, Mai hula and Pangri. The results obtained in these studies areas are as follows: out of the 300 sample collected from Bali town, 212 (70.7%) prevalence were found positive whereas 82 (27.33%) were found negative. A total number of 300 sample were collected from Garba Chede out of which 262 (87.3%) were positive and 38 (12.7%) were negative. This results presents that Garba Chede has the highest prevalence rate whereas Mai Hula has the lowest prevalence rate within the study area.

Table 1: Prevalence of *Taenia saginata* based on Location within selected areas in Bali Local Government area.

Town	Total Sample collected	NO positive	NO Negative	% Positive	% Negative
Bali town	300	212	82	70.7	27.33
Garba Chede	300	262	38	87.3	12.7
Mai Hula	200	112	88	56	44
Pangri	200	127	73	63.5	36.5

Table 2 presents the prevalence of *Taenia saginata* base on age of animals. The highest prevalence 619 (84%) was found in old animals whereas the lowest 381 (50.6) was found in young animals below four years.

Table 2: Prevalence of *Taenia saginata* based on age of the animals

Age	Total Sample collected	NO positive	NO Negative	% Positive	% Negative
Adult> 4 yrs	619	520	99	84	16
Young< 4 yrs	381	193	188	50.6	49.4
TOTAL	1000	713	287	134.6	65.4

IV.   DISCUSSION

Teaniasis is a disease of economic important in animal husbandry. Based on the records obtained in this study, the highest prevalence (87.3%) obtained in Garba Chede was similar to the result obtained by Mekonnen and Geta (2014) and higher than the carpological results of Adane, *et al* (2019). On the other hand, the lowest prevalence rate (56%) was recorded in Mai Hula district. The difference in the prevalence rate could be attributed to different ecological, climate and managements in the study areas. The high prevalence of *Taenia sagina* in the study area could also be attributed to the lowland and flood prone areas which could favors the development of the parasite. Similarly, the selected study areas are dominated with migrated cattle and biggest cattle markets within the study area (Urquhart, *et al.,* 1996).

The result from this study proved that age has a significant effects on the prevalence of *Taenia saginata* which has also been proved by different authors. The work of Fufa, *et al.,* (2009) reported a similar finding with the current study. As shown from this study, the older cattle has high prevalence than the young cattle. This could be best explain by the facts that older animals get exposed as their *movement* in search of feed is not restricted as the younger once (Radostits, *et al.,* 2007). More, so, Radostits, *et al.,* (2007) revealed that older animals has high prevalence than the young once, this is because their immunity decreases as they get older.

V. CONCLUSION

Taenia saginata is a parasitic disease of economic important in bovine species which affects health and production of animals. It causes losses due to the lesions on the carcass which leads in to partial or total condemnation of meat unfit for human consumption. This study revealed that there is a high prevalence of *Teania saginata* in the study area. Similarly, climate, management, sex and age has been observed amongst the contributing factors of *Teania saginata* in the study area. Based on the result obtained in the study area, it is therefore recommended that strategic prevention of *Teania saginata* such as quarterly deworming of cattle should be initiated to in the study area as well as using other method of analysis *Teania saginata* such as the serology, molecular eye and knife to ascertain the prevalence in the study area.

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