The effects of animal sex as a predisposing factor of *Taenia saginata* (cysticercosis) of cattle in Bali Local Government, Taraba state

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Abstracts: **Taeniasis in bovine's species is caused by the larval stage of the tape worm. Human beings get infected with the parasite after eating uncooked meat from infected cattle. 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, and not cysticercosis like T. solium does. This research work is carried out to determine the effects of sex as a predisposing factor of *Teania saginata*. This study used a total of 1000 indigenous breed 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. 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 shows that Garba Chede has the highest prevalence rate whereas Mai Hula has the lowest prevalence rate within the study area. The results showed that lowest prevalence 552 (65.8%) was found in male animals and the highest prevalence 448 (78.1%) rate was found in female animals. This study revealed that there is a high prevalence of Teania saginata in the study area. It is therefore recommended that quarterly deworming of cattle should be initiated in the study area.**

Keywords: **Teaniasis, cattle, Bali, Effects, sex, feacal, 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 a result of domestication of cattle around 10,000 years ago. The aim of this current study is to assess the effects of sex as a predisposing factor 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. As shown in Fig 1, 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.

Fig 1: Prevalence of Taenia saginata based on Location within selected areas in Bali Local Government area.
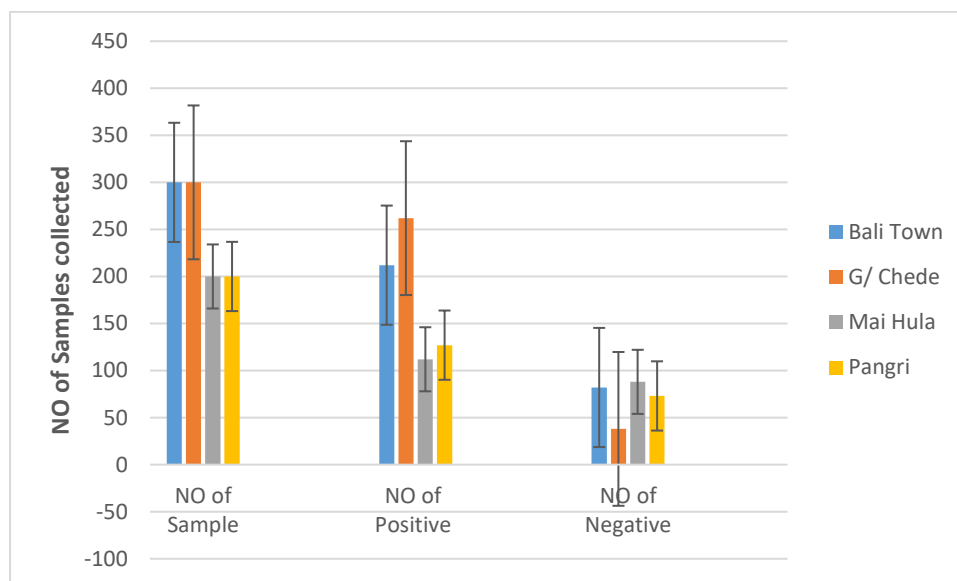
Table 1: Prevalence of Taenia saginata based on sex of the animals

Sex	Total Sample collected	NO positive	NO Negative	% Positive	% Negative
Female	448	350	98	78.1	21.9
Male	552	363	187	65.8	33.8
TOTAL	1000	713	285	143.9	55.7

Table 1 shows the prevalence of *Taenia saginata* base on sex of the animal. The record obtained from this study shows that lowest prevalence 552 (65.8%) was found in male animals and the highest prevalence 448 (78.1%) rate was found in female animals.

IV. DISCUSSION

Teania saginata is a disease of economic important in animal husbandary. 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 coprological 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 favours 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).

This study shows that the prevalence of *Taenia saginata* is affected by sex of animals. Although previous research studies shows that sex has no effects on the prevalence rate hence both sex are prone and have equal chance of getting infected with the parasite (Getachew et al., 2006 and Assefa et al, 2015). The high prevalence of Taenia saginata observed in female animals during the study could be attributed to lactating stress, malnourishment and other multifactorial conditions (Spithill, et al 1999). On the contrary, Khan et al (2009), male animals are more prone to *Taenia saginata* than the female animals.

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 lessions 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 sagina such as the serology, molecular eye and knife to ascertain the prevalence in the study area.

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