*Dedication*

¿:

*my mother ∧ My father*

*My brothers ∧ my sister* **s**

*My friend* **s**

**ACKNOWLEDGEMENT:**

Firstly I thank Allah for giving me the strength to complete this work, also my thanks and gratitude to professor :Mohamed Abdel Salam Abdulla , He took part in the supervision and guidance to me until the work was completed. for providing necessary facilities for the research work .and support in revising the text and giving valuable advices through different stage of this study. Do not forget to thank Elsadig Mohamed Ali Hasab Elrasol. And thanks extend to Dr. Osman Hamid *Animal Resources Research Corporation, department of parasitology, Soba*, , he was instrumental in helping me in the proper research and guideline. Special thanks to my friend Ds .Shaker Backlit Bukhara, he cooperation during the study. And help me in collected sample.

## Table of contents


| | Content | Page no |
|---|---|---|
| | Dedication…… | I |
| | Acknowledgments…… | V |
| | Abstract…… | VI |
| | Arabic abstract…… | IX |
| | Background…… | 1 |
| | Justification…… | 3 |
| | Objective of the study…… | 3 |
| 1 | Literature Review…… | 4 |
| 1.1. | Definition…… | 4 |
| 1.2. | Taxonomy…… | 5 |
| 1.3. | Epidemiology…… | 6 |
| 1.4. | Distribution…… | 6 |
| 1.5. | Transmission of Fasciolosis…… | 7 |
| 1.6. | Life cycle…… | 8 |
| 1.7. | Clinical Signs…… | 11 |
| 1.8 | Pathology and pathophysiology…… | 13 |
| 1.9 | Diagnosis of Bovine Fasciolosis…… | 16 |
| 1.10 | Identification of Fasciola spp…… | 18 |
| 1.10 | :Morphological identification…… | 18 |
| 1.10.2 | Cytogenetic identification …… | 18 |
| 1.10.3 | Molecular identification…… | 18 |

1.11 Control and prevention of bovine Fasciolosis..... 18
1.11.1 Chemical methods..... 18
1.11.2 .Biological control..... 21
1.11.3 Immunological control..... 21
1.11.4 Epidemiological Studies..... 21
2 Materials and Methods..... 34
2.1 Study area..... 34
2.2 Study design..... 34
2.3 Sampling methods..... 35
2.4 Sample size determination..... 35
2.5 Questionnaire execution..... 36
2.6 Ante-mortem Inspection..... 36
2.7 Post mortem examination..... 36
2.5 Carpological examination..... 37
3 Result
3.1 Age specific prevalence of bovine Fascioliosis..... 42
3.2 Sex specific prevalence of bovine Fascioliosis..... 42
3.3 Breed specific prevalence Breed of bovine Fascioliosis..... 42
3.4 Body condition specific prevalence of bovine 42

Fascioliosis.....
3.5 Source of animals of bovine 42
Fascioliosis.....
3.6 Grazing system specific prevalence of bovine 42
Fascioliosis.....
3.7 Vegetation specific prevalence of bovine 42
Fascioliosis.....
3.8 Drug use specific prevalence of bovine 43
Fascioliosis.....
3.9 Present snail specific prevalence of bovine
Fascioliosis.....
3.10 Manure disposable specific prevalence of bovine 43
Fascioliosis.....
3.11 Source of water specific prevalence of bovine 43
Fascioliosis.....
3.12 11 Source of water specific prevalence of bovine 43
Fascioliosis.....
3.13 Knowledge of disease specific 43
prevalence.....
4.1 Discussion..... 48
4.2 Conclusion..... 51
4.3 Recommendations..... 52
.
4.4 References..... 53

List of table.....

1 Prevalence of Fasciolosis in 375 cattle examined in Khartoum 39
State.....
2 Frequency distribution of 375 cattle examined for bovine Fasciolosis in Khartoum 41
State according to potential risk factors investigated .
3 Cross tabulation of bovine Fasciolosis diagnosed through post- mortem mortem 44
and fecal examination with potential risk factor in75 cattles 375 cattle slaughtered

at Khartoum State……..
4 Univariate analysis for the association between Fasciolosis 46
and potential risk factors in 375 cattle examined test: using the Chi-square test……..
5 Multivariate analysis for the association between Fasciolosis 47
examination and potential risk factors in 375 cattle examined in Khartoum state using logistic regression…….
List of figure
1 Distribution of *Fasciola* spp. in developing 7
countries……
2 Life cycle of 11
*Fasciola*……
3 Examination of liver showing adult Fasciola in bile duct…… 78

## Lest of table

Lest of figure

Figure Page no
Figure 1:Distribution of Fasciola spp. in developing countries 7
Figure2 :Life cycle of *Fasciola* 8
Figure 3:fasciola liver examination showing adult in bile duct 85
Figer 4:feacal examination at Suba 86

**Abstract:**

A cross-sectional epidemiological study was conducted from November 2015 to January 2015 to estimate the prevalence and investigate risk factors associated with the Fasciolosis due to the disease in cattle slaughtered at two abattoirs Ganaua and El Sahafa were selected from the localities of Khartoum State. Among the total of 375 cattle examined at post mortem and fecal examination by sedimentation ,32 animals were positive and prevalence of Fasciolosis was 8.5%.

Univariate analysis showed that there was statistically significant association between infection and age of animal($X^2$= 9.278) ( p- value 0.002). Association body condition of animal and disease ($X^2$=17.436) ( p – value = 0.000 ). Also The Chi-square test showed significant association between *Fasciola* infection and grazing system ( X=0.337 p-value=0.562)، vegetation statistically significant association with disease( X= 3.098 p-value=0.078)، using drug shows that there was statistically significant association with disease ($X^2$ 9.730) ( p-value = 0.002). present of snail statistically significant association with disease($X^2$=3.724) ( p-value = 0.002)، Manure disposal statistically significant association with disease($X^2$=3.044،p-value=0.081). However sex ,breed, source of animal , ,water body, and knowledge were not found significant association ( p- value $\leq$ 0.05).

. Multivariate analysis showed strength of association between risk factors ( age , Body condition and vegetation and disease ,showed statistically significant association ( p-value $\leq$ 0.05).

## ملخص البحث

أجريت دراسة مقطعية وبائية في الفترة ما بين من نوفمبر 2015 حتى يناير 2015

لتقدير معدل انتشار وعوامل الخطر المرتبطة بمرض الفاشيولا فى الأبقار المذبوحة في سلخانتي قناوة والصحافة تم اختيارها من محليات ولاية الخرطوم . من بين ما مجموعه 375 من الأبقار تم فحصها بعد الذبح في السلخانة وبواسطة تحليل البراز بطريقة الترسيب ، فوجد ان 32رأس من الأبقار مصابة بمرض

. الفاشيولا

. وأظهر الدراسة أن نسبة انتشار الفاشيولا 8.5% من خلال الفحص الروتيني للحوم وفحص البراز له علاقة معنوية تحت قيم معنوية اقل من او تساوى(25.0) هناك ارتباط ذات دلالة إحصائية بين العدوى وعمر الحيوان (مربع كاى= 9.278) (قيمة ف= 0.002) ، وارتباط بين الصحة الجسمية للحيوان والمرض (مربع كاى= 17.436) (- قيمة ف = 0.000)، كما أظهر اختبار مربع كآي علاقة ذات دلالة إحصائية بين المرض ونظام الري(مربع كاى=0.337))(وقيمه ف=0.562) وارتباط بين المرض ووجود الأعشاب ( مربع كاى=3.098) (قيمة ف=0.078 ) واستخدام االادوية (مربع كاى= 9.730) (وقيمة ف= 0.002)، ارتباط ذات دلالة إحصائية بين وجود القواقع و المرض (مربع كاى= = 3.724) (وقيمة ف= 0.0054)، ارتباط ذات دلالة إحصائية بين المرض والتخلص من الفضلات العضوية(مربع كاى= 3.044( ومع ذلك الجنس، والسلالة، مصدر الحيوانات ، مصادر المياه، ومعرفة المرض ليس لهم علاقة معنوية مع حدوث الفاشيولا تحت قيم معنوية اكبر من (.250). وأظهر التحليل متعدد المتغيرات قوة الارتباط بين عوامل الخطر (العمر، حالة الجسم والغطاء النباتي والمرض، تحت قيم معنوية اقل من او تساوى (قيمة P-<0.05).