BUSITEMA UNIVERSITY
Pursuing Excellence

P.O. Box 236, Tororo, Uganda
Gen: +256 - 45 444 8838
Fax: +256 - 45 4436517
Email: info@adm.busitema.ac.ug
www.busitema.ac.ug

PREVALENCE OF RUMEN AND RETICULUN FOREIGN BODIES AMONG CATTLE SLAUGHTERED IN MASAKA MUNICIPAL ABATTOIR

By

BULUNGU DISAN

BU/UG/2015/2095

Email:disanwb@gmail.com

A DISSERTATION SUBMITTED TO THE FACULTY OF AGRICULTURE AND ANIMAL SCIENCES, IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE AWARD OF THE DEGREE OF ANIMAL PRODUCTION AND MANAGEMENT OF BUSITEMA UNIVERSITY

AUG, 2018

DECLARATION

I, BULUNGU DISAN BU/UG/2015/2095 do hereby declare that this work is my original work and has not been submitted for any academic award in any University or Institution.

Signed .....

Bulungu Disan

Date.....07/08/2018.....

Supervisor's Approval

This is to certify that this dissertation presented by Bulungu Disan was written under my supervision and I recommend it for presentation to the Board of examiners in partial fulfillment of his requirements for the award of the degree of Animal production and Management of Busitema university.

Signed .....

Etiang Patrick

Date.....07/08/2018.....

DEDICATION

I wish to dedicate this dissertation to my lovely and caring mother, Namisango Martha, Mum Nakalanzi Julient, my brother Brich Kalanda, my ever-welcoming uncles and aunts and the entire class for their relentless efforts to my successful completion of the course.

ACKNOWLEDGEMENT

I thank the Almighty God who has given me the ability, strength and wisdom to accomplish this report. Am especially indebted to my beloved Mum Mrs Nakalanzi Juliet who supported me financially and for the love and motivation she showed me during the pursuit of this project. May the Almighty Lord God bless you abundantly.

I acknowledge the efforts of my supervisor Dr. Etiang Patrick under whose invaluable guidance I have managed to successfully accomplish this report.

Nobody has been more important to me in the pursuit of this project than the members of my family. I would like to thank my parents; whose love and guidance are with me in whatever I pursue.

I further extend my sincere appreciations to my friends and fellow students who have stood with me in encouragement, guidance and counsel throughout the process of research and writing the report. God bless you all.

TABLE OF CONTENTS

LIST OF ABBREVIATIONS

AM	Ante mortem
DVO	District Veterinary Officer
FBS	Foreign Body syndrome
GDP	Growth domestic product
IFB	Indigestible Foreign Bodies
IFOs	Indigestible foreign objects
PM	Postmortem
TP	Traumatic pericarditis
TRP	Traumatic reticuloperitonitis
UBOS	Uganda bureau of statistics
VFA	Volatile fatty acids

LIST OF TABLES AND FIGURES

ABSTRACT

A cross-sectional study was conducted from May 2018 to June, 2018 at Masaka Municipal Abattoir, with the objectives of assessing the prevalence of foreign bodies in rumen and reticulum, identifying types of foreign bodies and relationship between sex, age, and breed with prevalence of foreign materials. Both ante mortem and postmortem examinations were employed to examine the live animal and for the recovery of foreign bodies from rumen and reticulum after slaughter, respectively. Out of 320 cattle examined for the presence of indigestible foreign bodies, 46 (14.4%) animals were found positive for indigestible foreign bodies in their rumen or reticulum. Statistically insignificant difference ($P > 0.05$) in the prevalence of indigestible foreign material was observed between cross breed (26.6%) and local breed (13.7%). A significantly ($p<0.05$) high proportion of animals >5 years (24.4%) had Indigestible foreign bodies compared to animals <5 years (7.7%). Besides, significantly ($P < 0.05$) higher prevalence was observed between females (23.1%) and males (10.9%). As well as significantly higher prevalence was reported in Rumen (91.3%) than Reticulum (8.7%). The common types of foreign bodies detected were plastics 21 (45.7%), fruit seeds 9 (19.6%), clothes 7 (15.2%), Nails 3 (6.5%), Ropes 2 (4.3%), Wires 1 (2.2%) and stones 2 (4.3%). In conclusion, this study revealed ingestion of different types of indigestible foreign bodies by cattle in the study area which may significantly cause poor production and mortality in affected animals. The study also shows that plastics are the biggest culprits. Therefore, awareness for animal owners should be implemented to avoid the risk of foreign body ingestion by their animals and appropriate waste disposal practice should be implemented to reduce environmental pollution thereby enhancing livestock production and productivity.

CHAPTER ONE;

1.0 Introduction

Livestock production is a major component of the agriculture industry in Uganda contributing 5% of Gross Domestic Product and 18% of Agricultural Gross Domestic Product (Agriterra, 2012). The major livestock species kept include cattle, sheep, goats, pigs, rabbits and poultry. It is estimated that 4.5 million households (70.8%) rear at least one kind of livestock. However, livestock contribution is below the expected potential due to prevalent livestock diseases, poor management system and poor genetic performance (Agriterra, 2012).

Ingestion of foreign body in cattle is reported to be a condition of great economic importance and causes severe loss of production and high mortality rates (Bwatota *et al.*, 2018). Sheep and goats are highly selective feeders and ingest significantly less amount of foreign bodies as compared to cattle (Mohammed, 2012).

Foreign bodies ingested by cattle are divided into two main group; the first category, is foreign bodies of metallic origin and the second, is foreign bodies of non-metallic origin (Teshome *et al.*, 2017). Studies have shown that the non-penetrating foreign bodies commonly recovered in bovine stomachs are of non-metallic origin and the major penetrating foreign materials include metallic pieces (Mushonga *et al.*, 2015).

Environmental pollution is a growing problem for grazing animals due to absence of recycling industries, cleaning of environment cultures, and improper disposal of plastic bags (Akraiem & Abd Al-Galil, 2016). Reports from cattle reared with in urban and sub-urban environments indicated that impaction of the rumen resulted from the accumulation of foreign bodies such as plastic bags (Fasil, 2015).

The ingestion of foreign bodies is mainly related with nutritional defiencies and feeding management and causes various problems in different organs of the system mainly in reticulum and rumen (Teshome *et al.*, 2017). Industrialization and mechanization of agriculture have further increased the incidence of foreign bodies in these animals (Shandilya *et al.*, 2017).

REFERENCES

Abebe F, Nuru M (2011) Prevalence of indigestible foreign body ingestion in small ruminants slaughtered at Luna export abattoir, East Shoa, Ethiopia. Journal of Animal and Veterinary Advances 10: 1598-1602.

Abu-Seida and Oday S. Al-Abbad. (2016). Recent Advances in the Management of Foreign Body Syndrome in Cattle and Buffaloes: A Review. Pakistan Veterinary Journal, 8318.

Agriterra. (2012). Identification of livestock investment opportunities in Uganda, 126. Retrieved from www.agriterra.org

Akraiem, A., & A, A. A. A. S. (2016). Rumen impaction in cattle due to plastic materials, 23(1), 65–70.

Andrews, A., Blowley, R., Body, H. and Eddy, R. (2003). Bovine Medicine, disease and husbandry of cattle, 2nd ed. Oxford Blackwell Science, pp: 837-838.

Anwar, K., Khan, I., Aslam, A., Mujtaba, M., Din, A., Amin, Y., & Ali, Z. (2013). Prevalence of Indigestible Rumen and Reticulum Foreign Bodies in Achai Cattle at Different Regions of Khyber Pakhtunkhwa. Journal of Agricultural and Biological Science, 8(8), 580–586.

Asrat, M. (2017). Surgical management of ruminal impaction due to indigestible foreign bodies in cattle, 2(2), 26–27.

Bassa, K., & Tesfaye, W. (2017). Study on rumen and reticulium foreign bodies in cattle slauthered at Wolaita Sodo municipal Abattoir, Ethoipia, 4, 11–19. https://doi.org/10.22192/ijamr

Berrie, K., Tadesse, E., Mossie, B., & Anteneh, B. (2015). Study on Rumen and Reticulum Foreign Body in Slaughtered Cattle at Gondar Elfora Abattoir. World Journal of Biological and Medical Science, 2(4), 133–150.

Biruk Ushula Churko and Tesfalem Nana Elcho (2017). Churko et World Journal of Pharmaceutical and Life Sciences wjpls prevalence of rumen and reticulum foreign bodies in cattle sloughtered at hawassa municipal abattoir, 3(1), 521–534.

Bwatota, S. F., Makungu, M., & Nonga, H. E. (2018). Occurrences of Indigestible Foreign Bodies in Cattle Slaughtered at Morogoro Municipal Slaughterhouse, Tanzania.

Chanie, M., & Tesfaye, D. (2012). Clinico-Pathological Findings of Metalic and Non-Metallic Foreign Bodies in Dairy Cattle: A Review. Academic Journal of Animal Diseases, 1(3), 13–20. https://doi.org/10.5829/idosi.ajad.2012.1.3.7524

Fasil, N. (2015). Assessment of Sheep and Goat Foreign Bodies in Rumen and Reticulum in the Jigjiga Municipal Abattiar. Advances in Dairy Research. https://doi.org/10.4172/2329888X.1000157

Hailat, N., Nouh, S., Al, Darraji, A., Lafi, S., Al-Ani, F. & Al-Majali, A. (1996). Prevalence and pathology of foreign bodies (plastics) in Awassi sheep in Jordan. Small Ruminant Research, 24(1), 43–48. https://doi.org/10.1016/S0921-4488(96)00938-8

Hajighahramani, S., & Ghane, M. (2010). Traumatic Reticuloperitonitis in Cattle of Khorramabad (Center of Lorestan Provenience, West of Iran), 5(2), 135–139.

Hussain, T., Kumar, A., & Bansal, B. K. (2017). Retention time of magnets in reticulo-rumen of cattle and buffaloes for prophylaxis of foreign body syndrome, 5(6), 1464–1466.

Alemu, K & Ibrahim, N. (2018). prevalence of ruminal and reticular foreign bodies in cattle slaughtered at jimma municipal abattoir, south western ethiopia, (april).

Igbokwe, I., Rolo, M. and Egwu, G. (2003). Rumen impaction in sheep with indigestible foreign bodies in the semi- arid of Nigeria. Small Ruminant Research, 49: 141-146.

Kahn, C.M., 2005. The Merck veterinary manual, 9 ed., USA, Merck and CO., INC., pp: 186188.

International Livestock Research Institute, 1999, Making the livestock revolution work for poor, Annual Report, International Livestock Research Institute, Nairobi, Kenya.

M. Shandilya, G. Koli, S. Gharu, S. S. A. P. B. (2017). Removal of impacted aluminium wire from pharynx of cattle: a conservative treatment, 56, 99–100.

M, C, HAN, Saglayan, A,. Tanrısever, M,. Polat, E. (2017). Evaluation of the anterior stomach in term of foreign bodies in cattle. Fırat University, Faculty of Veterinary Medicine, Department of Surgery, Elazig, Turkey, 1(1), 32–38.

Mohammed, S. S. (2012). A Retrospective Study on The Prevalence of Foreign Body in Goat, Sheep and Cattle in Different Seasons in Khartoum State, 2001-2011, 9(6), 732–737. https://doi.org/10.5829/idosi.gv.2012.9.6.71101

Mushonga, B., Habarugira, G., Musabyemungu, A., Udahemuka, J. C., Jaja, F. I., & Pepe, D. (2015). Investigations of foreign bodies in the fore-stomach of cattle at Ngoma Slaughterhouse, Rwanda. Journal of the South African Veterinary Association. https://doi.org/10.4102/jsava.v86i1.1233

Negash, S., Sibhat, B., & Sheferaw, D. (2015). A postmortem study on indigestible foreign bodies in the rumen and reticulum of ruminants, eastern Ethiopia. Onderstepoort J Vet Res. https://doi.org/10.4102/ojvr.v82i1.881

Nongcula, V. V., Zhou, L., Nhundu, K., & Jaja, I. F. (2017). Association between the prevalence of indigestible foreign objects in the gastrointestinal tract of slaughtered cattle and body condition score. Animals, 7(11). https://doi.org/10.3390/ani7110080

Nugent, T., & Buckley, D. (2002). Using dentition to age cattle by, (122), 70–71.

Nugusu, S., Velappagounder, R., Unakal, C., & Nagappan, R,. (2013). Studies on Foreign Body Ingestion and their Related Complications in Ruminants Associated with Inappropriate Solid Waste Disposal in Gondar Town, 5(2), 67–74.

O.M. Radostits, C.C.Gay, K. W. Hinchcliff, P. D. C. (2007). Veterinary medicine a textbook of the diseases of cattle, horses, sheep, pigs and goats.

Omer, A. M. (2018). Ingestion foreign bodies in rumen and reticulum of shoats in hargeisa , Somalia: prevalence and the associated risk factors, 7(3), 67–71. https://doi.org/10.15406/jdvar.2018.07.00192

Otsyina, H.R., Nguhiu-Mwangi, J., Mogoa, E.G.M., Mbuthia, P.G. & Ogara, W. O. (2015). Prevalence of Indigestible Rumen Foreign Bodies in Sheep and Goats at Dagoretti and Kiserian Abattoirs, Kenya. International Journal of Veterinary Science, 4(2), 75–80.

Prasad, V. D., Kumar, P. R., Harikrishna, N. V. V, & Bhagyaraju, D. (2017). Traumatic reticulitis, reticulo-peritonitis and pericarditis (Foreign body syndrome) in bovines, 98– 102.

Ramprabu, R., Dhangralan.P and Prabhu Ban, S (2003) Irrrak.vet.rech. Alloc.58; 2-3. Ravi (2010) Intas Polyvet 11(2):194-195.

Ramswamy, M. A. and V. (2016). Study on Rumen and Reticulum Foreign Bodies in Cattle Slaughtered at Jimma Municipal Abattoir, South West Ethiopia, 6(6), 65–70. https://doi.org/10.5829/idosi.aejsr.2012.7.4.65140

Ravindra R.Y., A. L. P. and S. R. S. (2014). Review on Metallic and Non-Metallic Foreign Bodies a Threat To Livestock and Environment. International Journal of Food, Agriculture and Veterinary Sciences, 4(1), 6–14.

Roman Tiruneh, H. Y. (2010). Occurrence of rumen foreign bodies in sheep and goats slaughtered at the Addis Ababa Municipality Abattoir.

Salama, M., & Rizk, A. (2014). The use of inflammatory markers as a prognostic aid for traumatic reticuloperitonitis in water buffalo (Bubalus bubalis), 2014(5), 239–246.

Schipper, I.A., 2000. Lecture outline of Preventive Veterinary Medicine 6th ed., Surgeet Publishing, pp: 166-167.

Semieka, M. A. (2010). Radiography of Unusual foreign body in Ruminants, 3(10), 473–475.

Tesfaye, D., & Chanie, M. (2012). Study on Rumen and Reticulum Foreign Bodies in Cattle Slaughtered at Jimma Municipal Abattoir, South West Ethiopia. American-Eurasian Journal of Scientific Research, 7(4), 160–167. https://doi.org/10.5829/idosi.aejsr.2012.7.4.65140

Teshome, E., Abdela, N. and Hassan, A. (2017). Postmortem Study on Indigestible Foreign Bodies in Rumen and Reticulum of Ruminants Slaughtered at Asella Municipal Abattoir,. Journal of Veterinary Science and Technology, 8(3). https://doi.org/10.4262/21577579.1000436

Thrusfield, M. (2005). Veterinary epidemiology. 3rd ed. Burgh, U.K: Black well science LTD, Pp 182-189.

Uganda. Ministry of Public Service., & Uganda Bureau of Statistics. (2015). National service delivery survey 2015: report, xvii, 157.

Vanitha, V., Nambi, A. P., Gowri, B., & Kavitha, S. (2010). Rumen Impaction in Cattle with Indigestible Foreign Bodies in Chennai*. Tamilnadu Journal of Veterinary and Animal Sciences, 6(June), 138–140.

Zahra Rouabah, Madjid Tlidjane, Boubakeur Safsaf, M. M. and T. M. E. (2017). HematoBiochemical Profile in Cattle with Rumen Impaction, 18(4), 250–255. https://doi.org/10.5829/idosi.gv.2017.250.255