



# Department of Veterinary Pathology, Microbiology and Parasitology.

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University of Nairobi

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<http://www.vetpath.ac.ke>

## **Our Vision**

*To be a leading centre of excellence in research, training, diagnosis and consultancy in animal and zoonotic diseases; and environmental issues*

## **Our Mission**

*To contribute to improved animal health and productivity, human health, poverty alleviation and environmental sustainability by providing relevant education, basic and applied research, consultancy, outreach and diagnostic services*

## **Departmental quality policy statement**

*The Department Of Veterinary Pathology, Microbiology & Parasitology is committed to high quality training to produce competent, competitive and professional graduates. The Department is also committed to high quality scientific research, diagnostic, consultancy and extension services towards solutions in animal industry problems, food security and safety, for improved food security and safety, for improved food sufficiency, animal and human welfare.*

## **Department Activities in the strategic plan period (2013-2018)**

- 1. Governance, Leadership and Culture,*
- 2. Resources, Facilities and Infrastructure,*
- 3. Teaching and Learning,*
- 4. Research, Innovation and Technology,*
- 5. Competitiveness and Image of the University,*
- 6. Collaboration and Partnerships*

## **Strategic objectives will be pursued during the plan period:**

- 1. Efficient management of the department,*
- 2. Growth of the department's resource base and enhanced productivity,*
- 3. Production of quality and holistic graduates in diverse fields,*
- 4. Contribution to the development of society through creation, storage, application and dissemination of knowledge,*
- 5. Enhance the competitiveness and image of the department,*
- 6. Enhance value-adding partnerships and collaborations.*

## **Word from the Departmental Chairman Prof. P.K. Gathumbi**



In this second issue of the Departmental Newsletter, we are glad to present activities of the department in line with its vision and mission over the last half of the year.

The Department of Veterinary Pathology, Microbiology and Parasitology (VPMP) has contributed in implementation of its mandate through teaching, research, diagnostics and outreach in tandem with the agenda of the University of Nairobi. Some of the activities are aligned with teaching at both undergraduate and postgraduate level with the department graduating both PhD and MSc students last year. We have supported the livestock industry through research, diagnosis and outreach activities. The Department has been involved in environmental conservation through active participation in CAVS tree planting activities. Our linkages with local and international partners have remained strong through research and exchange of scholars. To enhance staff cohesion, the Department has an active Welfare Association that too meets members' social-economic needs. On the other hand, staff motivation and capacity have been enhanced through promotion of deserving cases and continued training. The Departmental infrastructure has been improved through acquisition of teaching aids and this will continue.

The department will continue to support the Faculty of Veterinary Medicine to produce competent and competitive graduates, and continue to undertake quality scientific research, diagnostics, consultancy and outreach services for national development

**Editorial team members: Prof. P.K. Gathumbi (Chairman), Dr. I. R. Mulei**

## **LINKAGES:**

The Department is affiliated to the following institutions

1. University of Ghana where Professor. P.G. Mbutia and P.N. Nyaga were visiting scholars between August 2012 to June 2013 and August 2013 to July 2014 respectively. Prof. Mbutia taught Veterinary Systemic Pathology while Prof. Nyaga taught Avian Pathology in the visiting tour at University of Ghana
2. Royal veterinary College London through a training grant held by Prof. Kanyari
3. Training grant under TRAHESA project coordinated locally by Prof. Mbutia in collaboration with Sokoine University of Agriculture, University of Zambia, University of Dar es Salaam's Institute of Marine Sciences and Norwegian University of Life Sciences.
4. Collaborative links with NARS institution through different grants held by several members of staff.
5. Prof. John Cooper and Margaret Cooper have been our visiting staff from Durrell Institute of Conservation & Ecology (DICE), The University, Canterbury CT27NR, Kent UK
6. Some of our staff members have won research grants from different agencies in the reporting period and others are implementing the previously held grants.

## **2013/2014 Postgraduate students**

Currently, the department is hosting a number of Post graduate students both at Masters and PhD levels as shown in the table below;

	<b>Post-graduate programme</b>	<b>MSc students</b>	<b>PhD students</b>
1	Veterinary Pathology and Microbiology	0	0
2	Applied Veterinary Parasitology	1	4
3	Clinical Pathology and laboratory Diagnosis	1	0
4	Veterinary Pathology and Diagnostics	3	0
5	Applied Microbiology	7	6
6	Fish science	0	1

**Students from the department receiving excellence awards/ recognition  
(2013/2014 academic year)**

<b>STUDENT NAME</b>	<b>AWARDS/ RECOGNITION</b>	<b>DETAILS</b>	<b>DOCUMENTATION</b>
Dr. Nyariki Thomas Manyibe	Doctor of Philosophy Degree in Veterinary Pathology and Diagnostics	<i>"The Pathology and Role of Bacterial and Endoparasitic Diseases in Mass Mortality of Lesser Flamingos in Kenya"</i>	Letter of Award
Dr. Gachugia Wilson Kuria	MSc. Degree in Veterinary Pathology & Microbiology	<i>"Prevalence and pathology associated with Caprine Athritis Encephalitis Disease in Goats in Thika, Nairobi and Machakos District, Kenya"</i>	Letter of Award
Dr. Kyalo Michael Makau	MSc. Degree in Applied Veterinary Parasitology	<i>"Prevalence, Intensity and Pathology associated with helminth infections in Indigenous Chickens in Kiambu West, Thika and Nairobi Districts"</i>	Letter of Award
Dr. Mwiha Evalyn Wanjiru	MSc. Degree in Clinical Pathology and Laboratory Diagnostics	<i>"Toxicity of Albizia Gummifera; A Plant Commonly used in Ethnoveterinary Medicine in Kenya"</i>	Letter of Award
Dr. Oyaro Nyakundi Ian	University Scholarship	Award on merit	Letter of Award of University of Nairobi Scholarship 2013/2014
Dr. Kevin Odindo Miheso	University Scholarship	Award on merit	Letter of Award of University of Nairobi Scholarship 2012/2013 & Award renewal
Dr. Kosgei Philemon	Ruforum Scholarship	Award on merit	Letter of appreciation from the beneficiary(student) 2012/2013

Dr. Hannah Wambui Change	African Foundation Scholarship	WAAVP African Foundation Scholarship	Letter of invitation to attend WAAVP 2013: the 24 <sup>th</sup> International Conference of the World Association for the Advancement of Veterinary Parasitology, Hosted by the Australian Society for Parasitology, in Perth, Australia held on 25 <sup>th</sup> August to 29 <sup>th</sup> August, 2013.
Dr. Simon Migwi Maina	Science, technology and Innovation grant	Award on Research Proposal	Letter of Grant award 2012/2013
Dr. Simon Migwi Maina	African crop science conference	ACS award	Letter of invitation to attend African crop science and present a paper in the conference 14 <sup>th</sup> Oct to 17 <sup>th</sup> October

### **Current Research**

The department has a number of funded research programs namely

- 1) Diagnostic and control tools and strategies for *Taenia solium* cysticercosis – Funded by ASARECA and led by Prof. Maingi, N.
- 2) Developing Capacity for implementing innovative Peste des Petits Ruminant (PPR) Control Strategies based on the – Funded by RUFORUM and led by Dr. Gitao, C.G.
- 3) Improvement of dairy productivity and marketing in sub-humid and pastoral areas of Kenya through improved dairy value Chain led by Dr. Gitao, C.G.
- 4) Enhancement of sustainable productivity of fish in Lake Victoria through control of pollutants with emphasis on endocrine disruptors and microbial pathogens Funded by VicRes and led by Prof. Mbuthia, P.G.

- 5) Enhancing village chicken productivity through parasite management for effective Newcastle disease vaccination in Kenya- Funded by RUFORUM and led by Prof. Bebora, L.C.
- 6) Controlling Infectious Bursal Disease through development of local vaccines and establishing effective vaccination programs - Funded by National Council for Research, Science, Technology and Innovations and led by Dr. Njagi, L.C
- 7) Enhancing sustainable livestock productivity and marketing through control of Rift Valley Fever- Funded by RUFORUM and led by Prof. Nyaga, P.N
- 8) Botanical Garden established under the Research project on evaluation of medicinal plant extracts for improved livelihoods, a case study for East Coast fever- Funded by KAPP and led by Prof. Gathumbi, P.K.
- 9) Developing Reforms for promoting ASAL communities in drought mitigation and maximization of livestock resources for improved livelihoods through strategic linkages. A KAPAP Funded Project, Principal Investigator Prof. Kanyari Paul WN.
- 10) Commercial production of thermo-stable lactobacilli culture and Yoghurt from Camel milk supported by KAPAP, led by Dr. Gitau C.G.
- 11) Prof. P.K. Gathumbi, Drs D.N. Karanja, L.W Njagi, I.R. Mulei and Michael Coughneur “A multistakeholder study of enhance the control of livestock disease that limit production access markets in dryland sites Marsabit Kenya”. This was followed by a feedback report to stakeholders
- 12) Dr Gitau C.G. Co-investigator:2012-2015 Dry land Milk Production: Building capacity for anchoring camels in the Milk Value Chains, Kenya EAAPP-OCGS-01-2011-06 (700,000\$); Others Prof Wahome (UoN), Tura (KARI), Lamuka (UoN)
- 13) Dr Gitau C.G. Co-investigator: 2010-2013 Improvement of Dairy Productivity and Marketing in Sub-humid and Pastoral Areas of Kenya Through Improved Dairy Value Chain KAPAPCGS/FP/2011 (283,350\$) Others: Kangara (KARI) Githunguri (KARI) Wamani (MoL).
- 14) Dr Gitau C.G. Co-investigator: 2013-2015 Up-scaling Of Integrated Crop and Livestock System In Sub-humid and Pastoral Areas Of Kenya (16Mill. KES) Others: Kangara (KARI), Githunguri (KARI), Wamani (MoL).

15) TRAHESA NORHED NORAD project coordinated locally by Prof Mbuthia.

### **2013-2014 scientific publications**

1. D. C. Kemboi, H. W. **Chege**, **L. C. Bebora**, **N. Maingi**, **P. N. Nyaga**, **P. G. Mbuthia**, **L. W. Njagi** and J. M. Githinji (2013). Seasonal Newcastle disease antibody titer dynamics in village chickens of Mbeere District, Eastern Province, Kenya. *Livestock Research for Rural Development* 25 (10),
2. **Sabuni**, Z.A., P. G. Mbuthia, N. Maingi, P. N. Nyaga, **L. W. Njagi**, L. C. Bebora and J. N. Michieka (2013). Skin lesions associated with ectoparasitic infestation in indigenous chickens in Eastern province of Kenya. *Research Journal of Poultry Sciences*, 6 (3): 53-58
3. Jael A. OBIERO<sup>1,5</sup>, Robert KUNYERA<sup>1</sup>, Kenneth K. WAITITU<sup>1</sup>, **Isaac MULEI<sup>2</sup>**, Idle O. FARAH<sup>1</sup>, Kavoo LINGE<sup>3, 4</sup>, Walter JAOKO<sup>5</sup>, Peter G. MWETHERA<sup>1</sup>. A comparative Study of Smugel and KY Jelly Vaginal Lubricating Gels. *Journal of Reproduction & Contraception* 2013 Jun.; 24(2):76-87.
4. V. Obanda, J. Poghon, M. Yongo, **I. Mulei**, M. Ngotho, K. Waititu, J. Makumi, F. Gakuya, P. Omondi, R.C. Soriguer, S. Alasaad (2013). First reported case of fatal Tuberculosis in a wild African elephant with past human-wildlife conflict: *Epidemiol Infect.* 2013 Jul; 141(7):1476-80.
5. F.O. Obonyo, N Maingi, S.M. Githigia and C.J. Ng'ang'a (2013) "Farming practices and risk factors for transmission of helminths of free range pigs in Homabay District, Kenya". *Livestock Research for Rural Development*. Volume 25, Article # 36 retrieved March 21, 2013, from <http://www.irrd.org/irrd25/3/bon25036.htm>
6. C.W. Hungu, P.K. Gathumbi, N. Maingi and C.J. Ng'ang'a (2013) "Production characteristics and constraints of rabbit farming in Central, Nairobi and Rift-valley provinces in Kenya." *Livestock Research for Rural Development*. Volume 25, Article # 3 retrieved March 21, 2013, from
7. **Gitao C.G**, **Ithinji D.G**, Gitari R., Ileri G.R. (2014). The confirmation of Peste des petit ruminants (PPR) in Kenya and perception of the disease in West Pokot. *Research Opinions in Animal and Veterinary Sciences* <http://www.roavs.com/archive/vol-4-issue-6-2014.htm> 4(6):312-317.



8. E.C. Chepkwony, **C.G Gitao**, G.M. Muchemi. (2014). Characterisation of foot and mouth disease isolates from the Somali Eco-system in Kenya. American Journal of Research Communication, 2(5): [www.usa-journals.com](http://www.usa-journals.com), ISSN: 2325-4076.
9. Kibore B, **Gitao C.G**, Sangula A and Kitala P (2013). Foot and Mouth Disease Prevalence Cattle in **2010** in Kenya. Journal of Veterinary Medicine and Animal Health 5(9): 262-268.
10. D C Kemboi, H W Chegeh. **L.C. Bebora, N. Maingi, P.N. Nyaga, P.G.Mbuthia, L.W. Njagi** and J.M. Githinji conducted a study on “.Seasonal Newcastle disease antibody titer dynamics in village chickens” Mbeere District, Eastern Province Kenya, **2013** Livestock Research for Rural Development 25, (10).
11. **J.N.K. Kuria** and S.M. Gathogo. “Concomitant fungal and Mycobacterium bovis infections in beef cattle in Kenya, **31/07/2013**. Concomitant fungal and Mycobacterium bovis infections in beef cattle in Kenya. Research communications 1-4.
12. **Gitao C.G., Bebora**, Gachoh J.M., Njenga M.J., Wairire G.G., **Maingi N.** and R.G. Wahome “Analysis of small ruminants’ pastoral management practices as risk factors of *Peste des petits ruminants (PPR)* spread in Turkana District, Kenya. **2013**”. Research Opinions in Animal and veterinary science 3(9),393-397.
13. Kibebe, H.W., **Gathumbi, P.K.**, Kigondu, C.S., **Mbuthia, P.G** and Kariuki, J.W (2013). Comparison between glycated hemoglobin and blood glucose in monitoring diabetic patients at point of care testing. *Journal of Biomedical and Pharmaceutical Research* 2: 1-4
14. Kimani, P.C., **Gathumbi, P.K.**, Auma, J., Ngeranwa, J.J. and Masiga, D.K. (2013). In vitro activity of selected medicinal plants in Kenya on *Trypanosoma evansi* (2013). The Kenya Veterinarian 37:8-16
15. Kimani, P.C., **Gathumbi, P.K.**, Ndungu, K., Auma, J., Ngeranwa, J.J. and Masiga, D.K. (2013). In vivo activity of selected medicinal plants in Kenya on *Trypanosoma evansi* (2013). The Kenya Veterinarian 37:17-25

16. John Maina Kagira, Paul Njuki KANYARI, Ndicho Maingi, **Samuel Maina Githigia**, Chege Ng'ang'a and John Gachohi (2013). "Relationship between the Prevalence of Ectoparasites and Associated Risk Factors in Free-Range Pigs in Kenya." ISRN Veterinary Science, Vole (2013), Article ID650890.
17. Mdegela R.H., Mbuthia P.G., Byarugaba D.K., Mabiki F., Msigala s., Water P.K., Muzoora S. and Mwesongo S. (2014). Characterization and quantification of oestrogenic endocrine disruptors in Lake Victoria in Tanzania, Uganda and Kenya. Book of abstracts, Joint Scientific Conference of Inter-University Council of East Africa (IUCEA) by Lake Victoria Research Initiative (VicRes) and Lake Victoria Basin Commission (LUBC). Pg 10.
18. J K Serem<sup>1</sup>, M M Wanyoike<sup>1</sup>, C K Gachuiru<sup>1</sup>, S K Mailu <sup>2</sup>, P K Gathumbi<sup>1</sup>, R N Mwanza <sup>3</sup>, N Kiarie<sup>1</sup>, D K Borter <sup>2013</sup>). Characterization of Rabbit Production Systems in Kenya Journal of Agricultural Science and Applications (J. Agric. Sci. Appl.) 2: 155-159 Doi: 10.145S11/jasa.2013.020304 @American V- Kings Scientific publishing
19. **Gitao C.G.**. (2014).The factors contributing to utilization of information Communication Technologies (ICTs) in Management of Transmissible Animal Diseases (TADS): The case of Uasin Gishu, Kajiado, Nandi and Trans nzoia Counties of Kenya. Journal of Agricultural Information and Communication Management, 1(2) 13-16. :[http://agrieconomics.uonbi.ac.ke/sites/default/files/cavs/agriculture/agriecon/AICM%20JOURNAL%202014\(1\)\\_0.pdf](http://agrieconomics.uonbi.ac.ke/sites/default/files/cavs/agriculture/agriecon/AICM%20JOURNAL%202014(1)_0.pdf)

### **2013-2014 activities**

#### **a).Continuing Professional Development (CPD):**

The department hosted a workshop on '*the Forensic science and welfare of birds of prey and their interface with the poultry industry*' held on 3<sup>rd</sup> July 2013 at the department's large pathology lecture theatre.

**b). Visiting students**

Veterinary students from Freie University in Germany visited the department



**c). Workshops and seminars attended**

1. Prof. P.K. Gathumbi and Dr. I.R. Mulei, attended a meeting with stakeholders at Marsabit to discuss proposal development on diseases that limit market access of livestock on April 20th, 2013.



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2. Prof Muthia Dr Waruiru and Dr Mulei attended a two week training workshop on Development of Diagnostic capacity in aquatic diseases and Disease surveillance and control system for aquatic animals held at KELPHIS from March 24<sup>th</sup> to April 4<sup>th</sup> 2014.
3. Prof Maingi, Drs Odongo and Mulei attended a one week training each on Research and Grant writing at UNES in March and April 2014.
4. Prof Gathumbi, Prof Muthia and Dr L.W Njagi attended a fish curriculum review summit in Sokoine University Tanzania in April 2014
5. Dr Gitau attended a camel policy task force team workshop at Narok from 9 to 14 February 2014.
6. In February 2014, Dr Gitau was invited to give a lecture to participants during a training course for veterinary personnel on surveillance and epidemiology of trade-related Transboundary Animal Diseases (TADs) on two topics namely; JTD 001: Overview of

Transboundary Animal Diseases; and JTD 005: Diagnosis of Transboundary Animal Diseases. The workshop was held at the Kenya School of Government, located at Lower Kabete.

7. In February 2014 Dr Gitau was invited to review sheep and goat pox standard methods and procedures by the Inter-African Bureau for Animal Resources.

8. In February 2014 Dr Gitau was invited to review camel pox standard methods and procedures by the Inter-African Bureau for Animal Resources.

9. Dr Gitau gave a presentation during training on surveillance, epidemiology and diagnosis of Transboundary diseases held on 24<sup>th</sup> February 2014 at the department of clinical studies seminar room.

10. Dr Mulei attended under invitation a Borlaug leap alumni association conference on 4<sup>th</sup> march 2014 held at Main Campus, University of Nairobi.

11. Dr Mulei chaired a session under the theme “Innovation and technology transfer for dryland development” during the CSDES 2nd student-led conference held on 5<sup>th</sup> to 6<sup>th</sup> June 2014 at CAVS.

### **Upcoming events**

1. The department will be hosting a workshop on ‘*Avian pathology techniques*’ that will be held in August 2014 at the department’s large pathology lecture theatre.

2. Veterinary students from the University of Nairobi to visit the faculty of veterinary medicine, freie University of Berlin from 13 to 24<sup>th</sup> July 2014 under Dr. Gitao

3. The biennial scientific conference will be held on the 5<sup>th</sup> and 6<sup>th</sup> September 2014 at the Faculty of Veterinary Medicine.