



UNIVERSITY OF NAIROBI
COLLEGE OF AGRICULTURE AND VETERINARY SCIENCES
FACULTY OF VETERINARY MEDICINE



**DEPARTMENT OF PUBLIC HEALTH, PHARMACOLOGY
AND TOXICOLOGY**

ANNUAL REPORT

2011/2012



Prof. Jackson N. Ombui
Chairman

Preamble

This annual report 2011-2012 details the academic programs offered in the department, available facilities, activities undertaken by staff, including research and consultancy activities, conferences and workshop attended and publication of scientific papers they have made in refereed journals. In addition, the report gives details of the number of students who were registered in various academic programs in the year, staff movement , external examiners who were involved in moderation of various examinations, visitors to the department, collaborations and partnerships the department was involved in. I hope you will find the report informative.

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A handwritten signature in blue ink, appearing to read 'J. Ombui', written in a cursive style.

Prof. Jackson N. Ombui, PhD
Chairman,
Department of Public Health, Pharmacology and Toxicology.

Introduction

The Department of Public Health, Pharmacology and Toxicology (PHPT) is one of the five academic units in the Faculty of Veterinary Medicine, University of Nairobi. It was established in the 1972/73 academic year by combining the closely related disciplines of Pharmacology, Toxicology and Veterinary Public Health. The two disciplines were originally in different departments. Veterinary Public Health was housed in the Department of the clinical studies while Pharmacology and Toxicology was in the Department of Veterinary Pathology and Microbiology.

The Department is located 15 Km from the city centre at the College of Agriculture and Veterinary Sciences, of the University of Nairobi. The establishment of the Department of PHPT's physical facilities was financed by a grant from the Norwegian government which also provided initially the academic staff to run the department and resources that were used for development of local academic staff and finance research activities. The first local academic members of staff to serve the department got their postgraduate training through the Norwegian government and USAID grants. Some staff trained in Norway and locally using the Norwegian government grant. Others trained in America under USAID grant.

The Department of Public Health, Pharmacology and Toxicology provides training, research in the following specialized areas: Veterinary Public Health (Food Microbiology, Food Hygiene, Food and Environmental Toxicology, Zoonoses, Meat hygiene), Pharmacology, Toxicology, Epidemiology, Livestock Economics and Business management, Biostatistics, Computer Application and Information Systems, Immunology and Microbial Biotechnology, Food and beverage production and sales, House keeping, Tourism economics, Public relations and tourism management, Management, Entrepreneurship, Information Technology, Biochemical, Pharmacology Biochemical toxicology. Consultancy services are provided in the following areas: Acute toxicity testing of pesticides, Drug efficacy trials, toxicological analysis of feed samples, microbiological analysis of food, water and feeds, mycotoxin analysis, slaughterhouse design and construction, field surveys,

Vision

To be committed to academic excellence and promotion of research and outreach activities.

Mission

To be a centre of excellence for learning and scholarship, research and consultancy, fostering an intellectual culture and contribute to socio-economic development.

Core values

1. Commitment to provision of quality teaching, research and consultancy services
2. Espouse virtues of truth, integrity, honesty, tolerance, professionalism and teamwork.
3. Uphold ethical practices in provision of services.
4. Promotion of creativity and innovativeness
5. Ensure openness and transparency in our operations
6. Respect the beliefs and values of others
7. Respect and protect the environment
8. Be responsive and adaptive to changing conditions

Strategic objectives

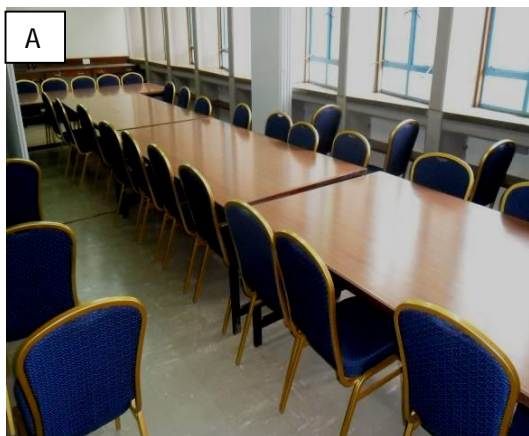
1. Provide quality teaching and research
2. Continuously revise training programs to reflect global changes and customer needs
3. Develop new programs that address emerging problems
4. Provide quality consultancy services
5. Disseminate research findings through publications, conferences and workshops
6. Participate in outreach activities through exhibitions, workshops, field and open days
7. Create working partnerships and linkages with local and international institutions and organizations.

PHYSICAL FACILITIES

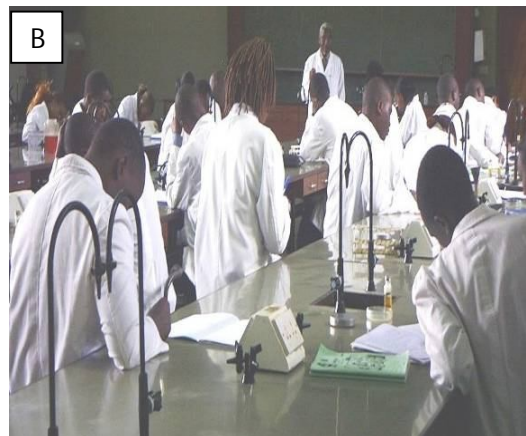
Available facilities

Lecture theatres	1
Teaching laboratories	3
Research laboratories	3
Teaching rooms	2
Staff offices	21
Laboratory animal house	1
Seminar room	1
Chemical stores	2
Lab preparation rooms	2
Washrooms	3

Facilities in the Department



A: Departmental seminar room



B: SBVM students attending a practical class



C. Pharmacology and Toxicology Laboratory



Maintenance of facilities

We continue to maintain the physical facilities to keep them in sound working condition. The following are activities undertaken in this academic year:

- Replacement and maintenance of fire extinguishers
- Replacement of electric bulbs in lecture theatres, laboratories, staff offices and corridors
- Replacement of door locks that were not functioning properly
- Regular cleaning activities
- Repair and maintenance of Department vehicles

ACADEMIC PROGRAMS OFFERED IN THE DEPARTMENT

UNDERGRADUATE PROGRAMS: The Department contributes to the teaching of the following undergraduate programs

1. Bachelor of Veterinary Medicine
2. Bachelor of Science in Biomedical Technology

3. Bachelor of Science in Wildlife and Tourism management
4. Bachelor of Science in Leather Science and Technology

Diploma programs

1. Diploma Leather technology
2. Diploma in Veterinary Public Health and Meat Technology.

Certificate programs

1. Certificate course in Meat Hygiene and Quality Assurance

POSTGRADUATE PROGRAMS: The Department offers the following four Masters and four PhD programs

Masters Programs

1. Master of Science in Pharmacology and Toxicology
2. Masters in Epidemiology and Economics
3. Masters in Veterinary Public Health
4. Master of Science in Natural products and Bioprospecting
5. Master of Science in Leather Science

PhD Programs

1. PhD in Pharmacology and Toxicology
2. PhD in Epidemiology and Economics
3. PhD in Veterinary Public Health
4. PhD in Natural products and Bioprospecting
5. PhD in Leather Science

POST GRADUATE STUDENTS

Postgraduate students registered in Academic year 2011/2012

Postgraduate program	Number of registered students
Masters in Veterinary Epidemiology and Economics	4
Masters in Veterinary Public Health	1
Master of Science in Pharmacology and Toxicology	2
Master of Science in Natural products and bioprospecting	0
PhD programs	5

FIRST YEAR

The following students were admitted for masters programs in 2011/2012 academic year

Master of Veterinary Epidemiology and Economics(MVEE)

1. Charles Kisa Toroitich
2. Selestine Naliaka Wamwatila
3. Leelia Rosamond Andrews
4. Nelson Owange Ochieng

Master of Science in Pharmacology and Toxicology

1. Joseph Mukundi Wahome
2. David Njenga Ngugi

Master of Veterinary Public Health (MVPH)

1. Esther Wangari Ng'ethe

All the students passed their coursework and were recommended to proceed to their second year of study.

SECOND YEAR

The following students were in their second year of study doing their research projects during 2011/2012 academic year

Master of Veterinary Epidemiology and Economics

1. Miriam Chepkosgey Nakeel
2. Mabior Mabil Awar Yuot

Pharmacology and Toxicology

1. Isaac Mokaya Omwenga

Natural Products and Bioprospecting

1. Lanyasonya Pat Rupunye
2. Rukenya Zackary Muthii
3. Kuria James Menni
4. Okindo Ronald Onzago

CONTINUING POSTGRADUATE STUDENTS

The following masters students continued with their research projects:

Master of Veterinary Epidemiology and Economics

Elizabeth Omolo Ouko

Evaluation of human exposure levels to dietary aflatoxins and associated risk factors in Makueni District, Kenya. (Supervisors: Prof. E. K. Kang'ethe, Dr. P. M. Kitala and Dr. L. Kanja)

Stanley Chege Maina

Investigation of factors Associated with Morbidity and Mortality in selected ungulate species in Al Amin wildlife Park and Resort United Arab Emirates. (Supervisors: Dr. P. M. Kitala and Dr. G. M. Muchemi.)

Master of Veterinary Public Health

Carmeline Wanjiru Mwai

Risk analysis of Escherichia Coli 0157:H7 Contamination of Beef Carcasses in Slaughterhouses in Nairobi Kenya. (Supervisors: Prof. E. K. Kang'ethe, Prof. S. M. Arimi and Dr. Delia Grace.)

Sirma Anima Jematia Kigen

A study of level of human exposure to Aflatoxins in Nandi District
(Supervisors: Prof. E. K. Kang'ethe, Prof. J. N. Ombui & Dr. I. M. Mapenay)

PHD STUDENTS, REGISTRATION STATUS, PROJECT TITLE AND SUPERVISORS.

Lucy Gicuku Njue (Full Admission in July 2011)

Development of a meat preservative from Garlic (*Allium Sativa*) extracts.
(Supervisors: E.K. Kang'ethe, Dr. LW. Kanja, PN. Nthakanio and JK. Gathumbi)

Irene thiguku Kamanja (Full Admission on 29/01/2010)

Pharmacological, toxicological and phytochemical study of clerodendrum myricoides medicinal plant used in Samburu District. (Supervisors: Dr. JM. Mbaria, Prof. PK Gathumbi, Dr. SG. Kiama and Dr. Mbaabu Mathiu)

Edward Okoth Abworo (Full Admission)

Epidemiology of African Swine fever virus in wild and domesticated pigs in Kenya. (Supervisors: Dr. P.M. Kitale, D. W. Bulimo, Richard Bishop and Amos Omore.). Has submitted these for exam 23/3/2011

Dr. Peninah Mbaire Munyua (Full Admission on 25/6/2011)

Occurrence and risk factors of influenza infection in domestic animals in Kibera and Asembo in Kenya. Supervisors: Dr P. M. Kitale, P. Nyaga and K. Njega)

Bernard Koros Kipsengeret (Full Registration)

A toxicological and Epidemiological study of Environmental and occupational pesticide Exposure on Floricultural workers in Kenya. (Supervisors: Dr. J. M. Mbaria and Dr. L. W. Kanja)

Mary Oguna Maina (Full admission on 17/11/2009)

Anthelmintic usage in food producing animals in Kenya and development of resistance in nematodes. (Supervisors: Dr. J. M. Mbaria, Prof. S. E. O. Mitema and Dr. W.O. Ogara)

Protas Odida Olwande (Full Admission on 13/10/2010)

Epidemiological assessment of productivity Constraints and Appropriate intervention measures on indigenous chicken Production in Nyanza Province, Kenya. (Supervisors: Dr. W. O. Ogara, Prof. L. Bebora and Dr. S. O. Okuthe).

Francis Muriuki Gakuya (Full Admission on 21/4/2008)

Epidemiology and Species Characterization of mange in Cheetahs, thompson's gazelles and domestic animals in the Maasai Mara ecosystems. (Supervisors: Prof. J. N. Ombui, Dr. G. M.. Muchemi, Prof. N. Maingi and Dr. W. O. Ogara). Student submitted thesis of examination and is waiting for defend the thesis

Massimo Castiello (Full admission 26/10/2009)

Assessment of constraints and opportunities in setting up hygiene standards in Somalia Meat Industry. (Supervisors : Prof. J. M. Gathuma, Prof. J. N. Ombui Dr. W. O. Ogara and Dr. S. O. Okuthe.)

Fred David Wesonga (Full admission on 15/5/2007)

An epidemiological assessment of tickborne diseases, their control and other constraints to livestock production in Machakos District, Kenya. (Supervisors: Dr. P. M. Kitale, Prof. J. M. Gathuma, Prof. J. Munene and Dr. P. N. Ngumi).

Joseph Olesarioyo Seneiya (Provisional registration)

Study of the Prevalence and Transmission risk factors of Bovine Tuberculosis in the livestock-wildlife interface areas of Laikipia County, Ewaso Nyiro Ecosystem, Northern Kenya. (supervisors: Dr. W. O. Ogara, and Prof. S. M. Arimi.)

Mark Opiyo Nanyingi (Provisional Registration in July 2011)

Spatial and Temporal Epidemiology of Infectious Diseases in a Changing climate. (Supervisors: Dr. G. M Muchemi and S. G. Kiama).

Joshua Orungo Onono (Provisional Registration on 9/5/2009)

Quantification of costs and risk factors of contagious Bovine Pleuropneumonia in Turkana District, Kenya.

(Supervisors: Prof. EK. Kang'ethe and Dr. W. O. Ogara)

Christopher Wang (Provisional Registration on 28/10/2009)

A study of the cost effective management of African Trypanosomiasis through improved utilization of known Control Strategies and epidemiological models in the larger Busia District, Kenya.

(Supervisors: Dr. P. M. Kitale and Dr. William O. Ogara)

Peter Obimbo Lamuka (Provisional Registration in March 2009)

Antimicrobial resistance among zoonotic organisms from camel milk and its ecosystem, and public health consequences on pastoral communities

The Students are in various stages of their PhD Studies.

EXTERNAL EXAMINERS APPOINTED IN 2010/2011 ACADEMIC YEAR

1. Dr. Michael Gicheru (Kenyatta University)- For Public Health and Immunology courses
 2. Dr. Henry Kiara (ILRI) – For Epidemiology and Economics courses
 3. Dr. Gideon M. Kikui (JKUAT) : For Undergraduate Pharmacology and Toxicology courses
 4. Mr. Godwin Njeru (USIU) – for Bsc. Wildlife and Tourism Courses)
 5. Dr. David Rotich (Moi University)- For Biostatistics courses
 6. Prof. Rasto Davd Masha (Sokoine University) – For Postgraduate Pharmacology and Toxicology courses
- All the examiners were available for end of year examinations..

POSTGRADUATE STUDENTS WHO GRADUATED IN SEPTEMBER 2011

DR. JOSEPH MWANZIA NGUTA (PhD in Pharmacology and Toxicology)

Project Title: *Plants as a source of drugs: Ethnopharmacology , pharmacology toxicology of selected antimalarials in Msambweni, Kenya.* Supervisors: JM. Mbaria and PK Gathumbi, SK Kiama and Gakuya

The findings of the study indicated that many species of plants are used by the Msambweni community to prevent and treat malaria. Majority of the plant species used were found to have strong activity in brine shrimp assay indicating that they may not produce safe antimalarial drugs.

DR. PAUL ODHIAMBO AYIEKO (Master of Veterinary Epidemiology and Economics)

Project title: *A comparative economic analysis of the contribution of livestock to household incomes: a case of Uriri, Karungu and Nyatike Divisions*”.

The study found that livestock are economic assets that provide multiple income to their owners. The gross margins attained from dairy enterprise were about 4 times higher than the gross margins from maize in Uriri and Karungu Divisions and 25 times higher in Nyatike Division. Inadequate knowledge on animal husbandry, lack of financial capital, livestock diseases and drought were the major threats to livestock enterprises.

DR. MARY NYAMBURA GICHURE (Master of Veterinary Epidemiology and Economics)

Project Title: *Prevalence and Risk factors of Africa Horse Sickness in the Donkey Population of Kiambu, West District, Kenya.* Supervisors: PM Kitale, DO Kihurani, JD Mande and JN Munene.

The current study was conducted to determine the prevalence and risk factors for AHS in donkeys in Lari and Limuru divisions of Kiambu West District, Kenya. Serum from 398 donkeys was tested for AHS antibodies using competitive antibody ELISA (Enzyme Linked Immuno-Sorbent Assay). The risk factors and level of awareness of

AHS were assessed through a questionnaire used to interview 146 donkey owners. The sero-prevalence of AHS in donkeys sampled after the heavy rains was estimated at 35.2% for the two divisions, while that for the dry season was estimated at 27.6%. The study indicated that AHS is endemic in donkeys in the 6 sub-locations of Lari and Limuru divisions of Kiambu West District. Preventive and control measures such as vaccination of donkeys against the disease and targeted control of *Culicoides* vectors especially in the wet season were recommended in order to reduce the prevalence of the disease.

POSTGRADUATE STUDENTS WHO GRADUATED IN DECEMBER 2011

DR. HEZBON AMENYA (MSc Pharmacology and Toxicology)

Project title: *Acute and sub-acute toxicological studies of *Rapanea Melanophloeos* (L) mez in laboratory laboratories.* Supervisors: JM Mbaria., PK Gathumbi., AG Thaiya and GN Thoithi.

The study examined the *in vitro* toxicity of *Rapanea Melanophloeos* bark extracts to brine shrimp and *in vivo* toxicity to Sprague Dawley rats that were orally doses. The findings of the study indicated that the polar and non-polar extracts of *R. Melanophloeos* have a wide margin of safety (a therapeutic index of 100) and can safely be utilized as a herby remedy for identified conditions including helminthosis, TB and heart water.

DR. WAWERU KABAKA (Master of Veterinary Epidemiology and Economics)

Project title: *Prevalence and risk factors for gastrointestinal nematodes infections and efficacy of two anthelmintics in cattle in Mukurwe-ini and Nakuru Districts, Kenya.* Supervisors: PM. Kitala and GK Gitau.

The prevalence of GIT nematodes infection in Nakuru and Mukurweini were 19.8% and 8.29% respectively and the efficacy of modidectin was estimated to be 95.8% while that of albendazole was 75%. The factors that influence nematode infection in dairy cattle were age of the animal, duration from last deworming, frequency of deworming and type of dewormer used.

DR. STANLEY MWEBIA ITONGA (MSc. Pharmacology and Toxicology)

Title: *Ethnobotanical and Toxicological study of plants used in traditional medicine and as biopesticide in Meru, Kenya.* Supervisors: JM. Mbaria and IM Mapenay.

An ethnobotanical survey was carried in July 2009 at Igane and Gatuune sub locations, Abothugushi East division of Meru Central district, Kenya to obtain data on identity of plants, their uses, availability, part used and methods of application. The results of the ethnobotanical survey revealed that eighty five (85) plant species belonging to 37 families were being used as medicinal or biopesticides. The plant families commonly used are Euphorbiaceae (10.59 %), Papilionaceae (8.24%), Compositae (8.24%), Labiteae (7.06%), Rubiaceae (7.06%), Caesalpiniaceae (5.88%), Rutaceae (4.70%), Apocynaceae (4.70%), Liliaceae (3.52%), Verbenaceae (2.35%), Flacourtiaceae (2.35%), Moraceae (2.35%), Myrtaceae (2.35%), Bignoniaceae (2.35%), Graminae (2.35%) and the rest of the families (22) each had 1.18%. The medicinal plants were used to treat and manage parasitic, microbial, anthelmintic, protozoal as well as metabolic diseases. Others such as *Tephrosia vogelii* is used as a biopesticides for the control of rodents.

MR. JAPHETH MWORIA M. ANAMPIU (Master of Veterinary Public Health)

Project title: A study of organochlorine pesticide residues in fish and sediments from Lake Naivasha.
Supervisors: LW Kanja., JM Mbaria and FM Njeruh.

Research Projects

Safe food safe Dairy project

Topic: Health risks associated with Mycotoxins (Aflatoxins and fumonicins) contamination of maize and animal feeds- This is a collaborative project between university of Nairobi and MTT AgriFood Research, Finland. The Project is funded by the Ministry of Foreign Affairs, Finland. Other partners are EVIRA-Finnish Food Safety Authority, Egerton University and KARI in Kenya. The project is supporting 10 Masters students 2 of whom are from the Department. Through this project, it is expected that an ISO 17025 certified mycotoxin laboratory will be established which will have an international recognition for mycotoxin analysis. The project leader is Prof. Hannu Korhonen (MTT Agrifood Research) assisted locally by Prof. E.K. Kangethe, Department of Public Health, Pharmacology and Toxicology..

Research Publications in Refereed Journals

Gathogo S. M, Kuria JN and **Ombui, JN** (2012). Prevalence of bovine tuberculosis in slaughter cattle in Kenya: A post-mortem microbiological and DNA molecular study. *Tropical Animal Health and Production*

Rao, K. P., **Maitho, T.** Kamania E. K and Sagre, P.(2011). Design and Preclinical studies of Miconazole soap strips for dermal infections. *International Journal of Institutional Pharmacy and Life Sciences*, 1(1): 68-76.

Wamalwa K., M. Castiello., **J. N. Ombui** and **J. M. Gathuma**. (2011). Capacity Building: Benchmark for production of meat with low levels of bacterial contamination in local slaughterhouses in Somaliland. *Tropical Animal Health and Production*, (July 2011)

Mutua, F. K., **Arimi, S. M.**, Schelling, **E, Ogara, W.O.**, Dewey, C. E. A.(2011): Prediction of live body weight using length and girth measurements for pigs in rural Western Kenya. *J. Swine Health Prod.* 2011; 19(1):26-33

Mutua, F. K., **Arimi, S. M.**, Schelling, **E, Ogara, W.O.**, Dewey, C. E. A.(2011): Farmer perceptions on rural pig rearing in Kakamega District, Western Kenya. *Nordic Journal of African Studies* 19(1): 43-57

Nalule A. S., **Mbaria, J. M.**, Olila, D. and Kimenju, J. W. (2011). Ethnopharmacological practices in management of helminths by pastoral communities in drylands of Uganda. *Livestock Research for Rural Development*, Volume #36 <http://www.lrrd.org/23/2/2nalu23036>.

Kipronoh, A., **Gathuma, JM.**, **Kitala, PM** and Kiara, HK (2011). Pastoralists perception of the impact of East Coast Fever on Cattle production under extensive management in Northern Rift Valley, Kenya. *Livestock Research for Rural Development*, 23(6):

Kipronoh, A., **Gathuma, JM.**, **Kitala, PM** and Kiara, HK (2011). Prevalence of tick-borne infections in extensive cattle management system in West Pokot District, Kenya. *Bull. Anim. Health Prod. Africa*, 59:43-52

Maloba, F., J. M. Kagira, G. Gitau, **J. N. Ombui**, J. Hau and M. Ngotho.(2011). Astrocytosis as a biomarker for

late stage human African Trypanosomiasis in Vervet monkey. *Sci. Paraitol.* 12(2): 53-59. (June 2011).

Mugavane, F. I, **W. O. Ogara**, T. K. Lumumba. Factors Influencing Adoption of Dairy Goats in Meru County, Kenya: Prospects and Constraints. *Journal of the Commonwealth Vet Ass* 2011 Vol. 27 (1), 5-14.

Muthee J K, **Mbaria J M**, Thaiyah A G, Karanja D N and Gakuya D W (2011). Clinical, haematological, biochemical and pathological manifestations of sub-acute toxicity of *Nicandra physaloides* (L) Gaertn in calves. *Bulletin of Animal Health and Production in Africa*, **59**:17-24

Muthee J. K., Gakuya D.W., **Mbaria, J. M.**, Kareru P. G., Mulei C. N., Njonge F.K., (2011). Ethnobotanical study of antihelminthic and other medicinal plants traditionally used in Loitokitok District of Kenya. *Journal of Ethnopharmacology*, **135(1)**:15-21

Odindo M.O., Adhiambo, R.A., Odindo, M.A. and **Ogara, W.O.(2011)** Baseline Study on Medicinal Plants: Olooseos Community Centre, Kajiado District. *The Professional* Vol 3, 2011:25-31.

CONSULTANCY ACTIVITIES

1. MINISTRY OF LIVESTOCK DEVELOPMENT (K) FUNDED CONSULTANCY ON ANALYSIS OF HEAVY METALS, DRUGS AND PESTICIDE RESIDUES AND AFLATOXIN M₁ IN CAMEL MILK (March-October 2012)

Lead Consultants: Dr. James M. Kahunyo (pesticides), Dr. Joseph M. Nguta (Heavy metals), Dr. Philip M. Kitala(Aflatoxins),

Technical Support: Johnson N. Gitahi, Lucy Mwangi, Joseph Nderitu, Kenneth Maloba, Francis Gitau, Alfred Mainga and James Macharia.

The University of Nairobi, Department of Public Health, Pharmacology & Toxicology (PHPT) contracted by the Ministry of Livestock Development to undertake a consultancy to analyse for levels of heavy metals, drug and pesticide residues and aflatoxin M₁ in camel milk in order to determine the safety of the milk for human consumption.

A total of 13 milk samples were collected from Nanyuki and analysis was done. Heavy metal analysis was done using Atomic Absorption Spectroscopy. Analysis for pesticides was done using Gas Liquid Chromatography fitted with an ECD detector at a detection limit of 2pg for organophosphates and pyrethroids and an FID detector for organophosphates residues with a detection limit of 3fg/s. Drug residues were analysed using High Performance Liquid Chromatographic Technique (HPLC) using a visible light detector (detection limit 1.0 ppm). Analysis was done for diminazine aceturate, hominidium bromide, albendazole and levamisole. Levels of

aflatoxin M₁ were determined in the milk samples (n=15) using Enzyme Immunoassay and the detection limit was 5 ppm.

The results obtained showed that all the samples contained arsenic at levels ranging from 0.007 to 0.099 ppm, while the levels of lead ranged from 0.072 to 0.449 ppm. The pesticides detected in the milk samples were heptachlor epoxide, aldrin, 2'4'DDT, 4'4'DDT 4'4'DDD, endrin, deltamethrin and cypermethrin in 7%, 20%, 7%, 13%, 40%, 7%, 73% and 87% of samples respectively. None of the samples analysed contained quantifiable levels of veterinary drug residues at the detection limit of 1ppm. The samples were also not found to contain detectable levels of aflatoxin M₁ at detection limit of 5 ppt. The results of the study indicated that sample had levels above the recommended maximum residue limits (MRL) and acceptable daily intakes (ADIs).



A technologist analyzing pesticide residues using Gas Chromatography



HPLC for analysis of drug residues and mycotoxins in the Department of Public Health, Pharmacology

2. FAO FUNDED CONSULTANCY ON TRAINING OF SOMALIA MASTER TRAINERS IN PUBLIC HEALTH (13-22th May 2012).

Lead Consultant: *Prof. Jackson N. Ombui*

Other Consultants: *Prof. Philip M. Kitala, Prof. Samuel M. Arimi, Dr. Peter B. Gathura and Dr. Daniel M. Senerwa.*

The University of Nairobi signed a consultancy agreement on 11.01.2012 (LoA No.159/2012) with FAO Somalia to provide training services in public health to Somali Master trainers on best practices in meat inspection and prevention of food borne diseases and zoonoses. The Objective of the consultancy was to enhance the capacity of public health officers to effectively perform their public health service delivery roles in Somalia. The consultancy lead to the development of a training manual that will be used to train Public Health Practitioners in Somalia and in training of six master trainers (4 veterinary and 2 medical professionals) who could to take charge of the training of public health practitioners in Mogadishu and other parts of Somalia.



University of Nairobi lecturers with the six trainees from Mogadishu, Somalia at the end of the training period in the Department of Public Health, Pharmacology and Toxicology.



Dean, Faculty of Veterinary Medicine presenting a Certificate of Participation to one of the trainees at the end of the training.

Conferences and workshops attended by staff

Prof. J. N. Ombui. Attended a workshop on Applying for research funding jointly organized by Africa Academy of Sciences, International foundation for Science and Institut de recherche pour le developpement held at the African Academy of Sciences, Nairobi Kenya between 28th May -1st June 2012.

Prof. J. N. Ombui: Attended 8th biannual Faculty of Veterinary Medicine/KVA joint Scientific Conference held at Safari Park Hotel, Nairobi between 25-27th April 2012.

Dr. William O. Ogara. Attended 8th biannual Faculty of Veterinary Medicine/KVA joint Scientific Conference held at Safari Park Hotel, Nairobi between 25-27th April 2012.

Dr. James M. Mbaria. Attended 8th biannual Faculty of Veterinary Medicine/KVA joint Scientific Conference held at Safari Park Hotel, Nairobi between 25-27th April 2012.

Prof. S. M. Arimi. Attended 8th biannual Faculty of Veterinary Medicine/KVA joint Scientific Conference held at Safari Park Hotel, Nairobi between 25-27th April 2012.

Training workshops organized in the department

Training of trainers workshop for Somali Public Health Practitioners Master Trainers (14-22 May, 2012.)

The Department of Public Health, Pharmacology and Toxicology organized and conducted a training of trainers workshop for Somali Public Health Practitioners Master Trainers on best practices in meat inspection and prevention of food borne diseases and zoonoses between 14-22 May, 2012. The Objective of the workshop was to enhance the capacity of public health officers to effectively perform their public health service delivery roles. Six Somali professionals (4 veterinarians and 2 medical personnel) from Mogadishu attended the 10 day workshop that was funded by FAO Somalia.

CONSULTANCIES WON IN THE ACADEMIC YEAR 2010/2011

FAO Somalia: Training of Somali Master trainers of Public Health Practitioners (January- June 2012 Ksh.1,249,150/= or USD 15050)

Ministry of Livestock Development, Kenya: Analysis for pesticide residue and heavy metal levels in camel milk sold in Kenya. (June 2011- Ksh.735,000/=).

AHITI Ndomba: Practical training of Diploma in Animal Health and Production students in pharmacological techniques. (April 2012 -Ksh.40,000/=)

FAO Somalia: Certificate training of personnel working in the livestock sector in Somaliland and Puntland on meat hygiene and quality assurance (September 2011 to May 2012 @ USD 110,170)



Technologist in the GC room where pesticide residue analysis takes place.

Collaboration and Partnerships

1. Department of Veterinary Services, Ministry of Livestock Development; On analysis of chemical residues in meat and training in meat inspection.
2. Meat Training Institute(MTI), Ministry of Livestock development: In training and evaluation of meat inspectors
3. Kenya Bureau of Standards: In development of food safety standards
4. International Livestock research Institute (ILRI): In multidisciplinary joint research programs.
5. Kenya Veterinary Board: On development and implementation of Continuous Professional Training Workshops.
6. Kenya Veterinary Association: On development and implementation of Continuous Professional Training Workshops.

Facilities acquired in 2011/2012 academic year.

1. Ten (10) desktop computers were purchased for staff and postgraduate students (6 in fourth quarter and 4 in 3rd quarter)
2. One LCD projector.

Staff recruitment

1. Three (3) new technologists Grade ABC were employed in March 2011/2012.

2. One(1) technician grade III was promoted to grade IV
3. Four (4) part-time lecturers were employed for 2011/2012 academic year

STAFF MOVEMENT

Promotions

Ms. Leah mwaniki was promoted from Technologist Grade III to Technologist Grade IV.

New staff recruitment

1. **Mr. Harrison Njoroge** was employed as Technologist Grade ABC
2. **Mr. Luka K. Bett** was employed as Technologist Grade ABC
3. **Ms. Penina Atiku** was employed as technologist Grade ABC

On study Leave

Dr. Joshua Onono: A tutorial fellow in the Department proceeded on study leave to undertake his PhD studies at the University of London.

Renewal of Contracts

Prof. J. M. Gathuma (Professor): Contract was renewed for 2 years till October 2013

Mr. Peter Njeru (Driver) for one year untill October 2013

Mr. Silas Mwakio (Grade 11) for one year untill April 2013

Ms Jackline Nyaribo (Grade 11) for one year untill April 2013

On leave of Absence

Njeruh, F.M. (Renewed his leave of absence from October 2011- October 2015)

ACADEMIC STAFF AND THEIR AREAS OF SPECIALIZATION

Chairman:

Prof. Ombui, J.N. B.V.M. M.Sc., Ph.D. (Nbi) - Public Health, Food safety and hygiene, microbial biotechnology, antibiotic resistance and residues in food.

Professors:

Gathuma, J.M., B.V.Sc., M. Sc., Ph.D. (Nbi) – Veterinary Public Health. epidemiology, Animal health economics.

Mitema, S.E.O., B.V.M. (Nbi), M.S. (Kansas), Ph.D. (Nbi) – Pharmacology and Toxicology. Chemotherapeutic agents against haemoprotezoa, antibiotic residues studies, calcium channel blockers.

Maitho, T. E., B.V.M. M.Sc. (Nbi) Ph.D. (London) – Pharmacology and Toxicology. Non-steroidal anti-inflammatory drugs, pesticide residue in food.

Kang'ethe, E.K., B.V.M. (Nbi), M.Sc., (Bristol), Ph.D. (Nbi) – Veterinary Public Health. Meat Science, meat hygiene, and Immunology.

Associate Professors:

Kagiko, M. M., B.V.M., M.Sc., Ph.D. (Nbi) – Veterinary Public Health. Parasitic zoonoses, immunology and food microbiology.

Arimi, S.M., B.V.M., M.Sc. (Nbi), Ph.D. (Reading) – Veterinary Public Health, Milk hygiene, food microbiology and Bacterial and emerging zoonosis.

Njeruh, F.M., B.V.M., M.Sc., Ph.D. (Nbi) – Veterinary Public Health, Immunology, parasitic Zoonoses, Milk hygiene.

Senior Lecturers:

Gathura, P.B., B.V.M., M.Sc., Ph.D. (Nbi) – Veterinary Public Health. Zoonoses, Immunology and Water hygiene.

Ogara, W. O., D.V.M., M.Sc., Ph.D. (Moscow) – Veterinary Public Health, Meat and Fish hygiene, Environmental Health and hygiene, Environmental Impact Assessment.

Kitala, P.M., B.V.M., M.Sc., Ph.D. (Nbi) – Veterinary Public Health. Viral zoonoses and Epidemiology

Kanja, L. W., B.Sc., M.Sc., Ph.D. (Nbi) – Pharmacology and Toxicology, Analytical chemistry, pesticide residues in food and mother's milk.

Mbaria, J.M., B.V.M., M.Sc., Ph.D. (Nbi) - Pharmacology and Toxicology, Natural Products and Ethnoveterinary medicine.

Lecturers:

Nderu, F.M.K., B.V.M., (Nbi), M.P.V.M. (California) – Veterinary Public Health. Epidemiology and Food hygiene.

Kahunyo, J.M., B.V.M., M.Sc., (Nbi) – Pharmacology and Toxicology. Pesticides and, mycotoxins.

Senerwa, D. M., B.V.M., M.Sc., (Nbi) – Veterinary Public Health; food microbiology, Molecular biology, bacterial plasmid transfer and resistance.

Macharia, S.M., B.V.M., M.Sc., (Nbi) – Veterinary Public Health. Epidemiology and animal health economics.

Oguna, M.J., B.V.M., M.Sc., (Nbi) ongoing Ph.D. (Nbi) – Pharmacology and Toxicology. Reproductive pharmacology.

Muchemi, G.M., B.V.M., M.Sc., Ph.D. (Nbi) – Veterinary Epidemiology. Parasitic zoonoses, Biostatistics.

Mapenay, I.M., B.V.M., M.Sc., Ph.D. (Nbi) – Pharmacology and Toxicology. Molecular pharmacology.

Tutorial Fellows:

Nguta, J. M., B.V.M., M.Sc., Ph.D. (Nairobi) – Pharmacology and Toxicology, Natural Products and Pharmacology and Toxicology of medicinal plants.

Onono, J. O., B.V.M., M.Sc., ongoing Ph.D.– Veterinary Epidemiology, Animal Health Economics and Biostatistics.

(b). Non -Academic staff list

Mr. Gitahi Nduhiu (HND, MSc.)	Chief Technologist
Ronoh Koske (HND)	Senior Technologist
Lucy Mwangi (HND)	Senior Technologist
Kenneth Maloba(HND)	Senior Technologist
Dorcas Nduati(HND)	Senior Technologist
Francis Gitau(Diploma)	Technologist Grade ABC
Kiogora A. Marimba(Diploma)	Technologist Grade ABC
Alfred Mainga (Diploma)	Technologist Grade ABC
Joseph G. Nderitu (Diploma)	Technologist Grade ABC
James K. Macharia (Certificate)	Technologist Grade ABC
Leah Mwaniki (Certificate)	Junior Technologist Grade III

Grace Pacho (Certificate)
Mercy Gitungo (Certificate)
Martin Odongo (Certificate)
Caroline Maina (Certificate)
Peter Njeru
Jackline M. Nyaribo
Johnson Silas Mwakio
Fanice Airo

Junior Technologist Grade III
Junior Technologist Grade III
Subordinate Grade II
Secretary Grade A
Driver Grade II
Subordinate staff Grade II
Subordinate staff Grade II
Subordinate staff Grade II



Prof. Jackson N. Ombui
Chairman.
3/10/2011.