

Animal *focus*

Vol 4 No 11 Oct - Dec 2020 KShs 150.00; USD 3.00

IMPROVING THE LIVELIHOODS OF KENYANS



- *Animal euthanasia: When you must say bye*
- *Anti-microbial resistance: The imperative to ACT!*
- *Rabies: All you need to know to keep your pets safe*

The Dynamic Duo

The best of both worlds, in a package designed to meet your every need

Suzuki Jimny

Built to tackle the harshest weather & terrain, the Jimny goes where other vehicles fear to tread. Few vehicles can match in a compact and relatively inexpensive package.



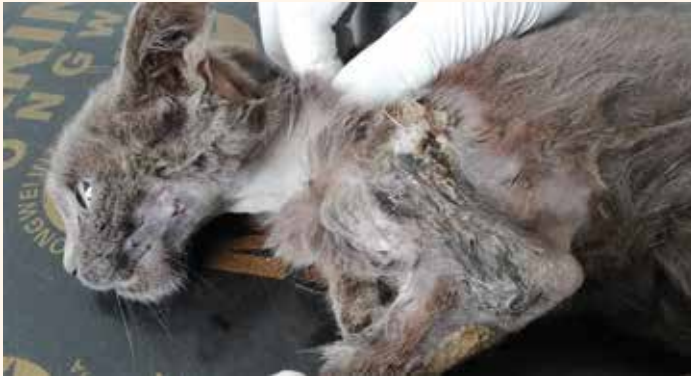
Toyota Hilux (Double Cabin)

Tough outside, comfortable cabin, the Toyota double cab is suitable for both work and play. From office to the countryside, we got you covered.



CONTENTS

PETS AND US



Animal Euthanasia 32

DONKEY FOCUS

Brooke E A Project44

Good restraint practice45

REGULARS

Editorial: Let's Catch them young4

The Chair's Take: Time to pass the baton5

Book reviews: Great vet reads46

Wisdom for living: How to rediscover yourself...48



RABIES FAQ: ALL YOU NEED TO KNOW TO KEEP YOUR PETS SAFE.....9



Antimicrobial Resistance Project in Kenya.....27



What it is like to treat sick animals in the midst of the AMR challenge29

FOCUS ON AMR

A reflection on antimicrobial resistance21

A man and his money are soon parted10

The Burdern of AMR25

AMR: Everyone's business31

EXTRAS

World Animal Day Special19

One health: The superior approach to managing health.....35

Covid 19 pandemic and foods of animal origin37

Six lessons I have learnt about veterinary medicine39

A lucky escape41

Role of animal resources in the big 4 agenda43

COVID 19 - HOW DO WE PICK UP THE PIECES?



Covid 19 was like a sudden blast of misery and bad fortune from the dark. In a few weeks, the entire world was brought to its knees as country after country declared an expensive lockdown.

As a case in point, there were to be two international poultry meetings run by organisations close to the World Veterinary Poultry Association (WVPA) in May and October in Nairobi respectively. None of these happened! And it does not look like they will happen soon. WVPA was not the only casualty. The world practically came to a standstill for about six months.

So, how do we pick up the pieces and what lessons have we learned from the Covid 19 season?

Behind every cloud, there is a silver lining. And here are at least three silver linings. First, the way each one has had to grow in online engagement is amazing. Right from the primary school child to the professor, we have all learnt how to use one meeting application solution or another.

Secondly some people have discovered that maybe there was never a need for a physical meeting in the first place. I know a board that now meets from 6.00 - 8.00 am on a Saturday!

Finally, the online thing has come with the capacity for recording. Meetings and conferences are now being recorded and shared after the meeting for further listening and internalisation of the issues. What an opportunity! Those who miss the meeting can attend it through listening to the recording. Minutes are more accurate because they can be checked verbatim and so on.

So, as we look forward to the world opening again and things going back to the pre-Covid 19 days, we are a people who have been given new tools which can allow us to be more effective as we combine our physical presence and the new power the online engagement has unleashed.

In the same spirit, we are beginning to think how we can share the Animal Focus Magazine online. You will hear more of this in the coming days.

For now, please enjoy your read, and we wish you all the best going forward.

Simon.

Animal Focus is published quarterly by the Kenya Veterinary Association. The publisher regrets that they cannot accept any liability for errors or omissions howsoever caused. The opinions in this publication are not necessarily those of the publisher. Readers are advised to obtain specialist advice before acting on information contained herein. No part of this publication or any part of the contents thereof may be reproduced, stored in a retrieval system or transmitted in any form without the prior permission of the publisher in writing. Unsolicited manuscripts are welcome but the publisher accepts no liability for loss or damage of submitted material.

Published by:
Kenya Veterinary Association

Head Office – Veterinary Research Labs, Kabete
P.O. Box 28089 Kangemi 00625 Nairobi,
Telephone: +254 (20) 808 5685,
Mobile: +254 (727) 680 022,
Email: info@kva.co.ke
Website: www.kva.co.ke

KVA OFFICIALS

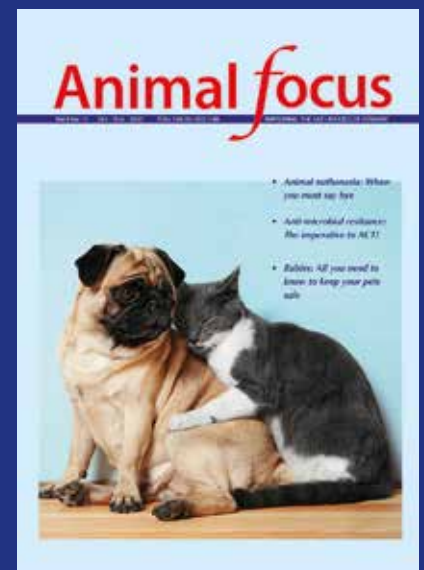
Dr Samuel Kahariri - National Chairman
Dr Abraham Sangula - Vice Chairman
Dr Victor Yamo - Council Chairman
Dr Gichomo M.J. - Hon Secretary
Dr Lilyan Mathai - Assistant Secretary
Dr Purity N Kiunga - Hon Treasurer
Dr Kelvin Osore - Assistant Treasurer
Dr Andrew Matole - Committee Member
Dr Nazaria Nyaga - Committee Member
Dr Calvin S. Onyango - Committee Member
Dr Nehemiah J. Ogachi - Committee Member
Dr John Muchibi - Committee Member

EDITORIAL COMMITTEE

Dr Simon Alubbe
Dr Joseph Othieno
Dr Agnes Maina
Dr Moses Olum
Dr Isaiah N Chacha

MAGAZINE DESIGN AND LAYOUT

Partners Communications Company



The Chair's Take: Passing the baton

Outgoing KVA chair, Dr. Samuel Kahariri: "African veterinarians needed to be recognized like other veterinarians in other continents, hence the establishment of Kenya Veterinary Association(KVA) to ensure that veterinarians got reasonable working standards and proper training before practically venturing into the profession." This is according to Dr. Samuel Kahariri, the association's outgoing National chairperson. He shares his journey with us and what he has been able to achieve as a Kenya Veterinary Association National Chairman.

The KVA chair reminds us that KVA's mandate is to promote the economic development and welfare of its members as well as to safeguard the health and welfare of animals. The Association is also a resource Centre for the veterinary profession, providing leadership, advocating for proper management and high level of professionalism in the delivery of veterinary services to move the Animal Resource Industry to greater heights of development.

He pointed out that since inception in 1966 and registration in 1967, KVA had experienced growth in terms of membership as well as diversity, ranging from basic animal welfare to quality assurance of veterinary professional services and overall leadership in the Animal Resource Industry where members are responsible for certification and technical competence.

Dr. Kahariri reminded us that serving in the KVA executive committee or being a Chairman called for a lot of dedication and sacrifice since the responsibility comes with a good number of challenging situations. Successive office bearers have volunteered their time and resources to ensure the achievement of the Association's goals and objectives in areas including research and disease management in spite of funding and human resource capacity challenges.

Dr Kahariri joined the leadership of the KVA in 2010 as a National Executive Committee Member for one year where he learnt a number of things regarding the leadership in the professional body since earlier on he had only interacted with KVA when he was the Chairman of the Veterinary Students Association in the year 2008 to 2009. Thereafter, Dr Kahariri, contested for the position of Honorary Secretary where he served for 2 one year terms from 2011. Members of the association elevated Dr Kahariri to the position of Vice Chairman from the year 2013 where he contested for a second term, which ran upto May 2016. During his tenure as the Hon Secretary and Vice Chairman, he led in re-branding of the association and commenced automation of a number of services within the secretariat to improve the efficiency and members experiences. He was also leading the Legal and Policy committee, which successfully advocated for a number of emerging issues affecting the veterinary profession. During this time, the positioning of the association greatly benefitted from his initiatives. In 2016 Dr Kahariri rose to become the youngest Chairman in the history of KVA at an age of 34years in what many termed as a generational change in the KVA leadership. He



*Dr Kahariri Samuel,
Outgoing National Chairman, KVA*

defended his seat in year 2018 for a second 2-year term upto April 2020.

Under his leadership, the association has been working hard to improve Kenyan livelihoods and stepped-up advocacy efforts to bring out the role of the livestock sector in contributing to the food security and immense growth of the Kenyan economy. In his remarks he said, “for a long time even some policy makers in very high offices had poor understanding of food security in this country because they thought it is all about grain reserves in the silos forgetting that 75% of Kenyan mass is ASAL where the main economic activity is livestock farming”.

Key areas of Focus in his leadership
International Partnerships

Commonwealth Veterinary Association - During his tenure (2017), Dr Kahariri led KVA to Host the Commonwealth Veterinary Association during the Joint KVA/CVA Golden Jubilee. This auspicious event brought in delegates from more than 20 Countries.

International Companion Animals Management (ICAM) coalition – In September 2019, KVA under the leadership of Dr Kahariri hosted the first Humane Dog Population Management Conference in Africa, which hosted more than 200 international delegates drawn from over 30 different Countries across the globe.

The International events lifted the profile of the association and profession in Kenya as well as bringing to the fore the key role-played by Veterinarians in Food security, public health and growth of the economy.

Advocacy and policy

Dr Kahariri has been keen to prioritize advocacy for the strengthening, review or support enforcement of legislation which negatively affects the profession or any issue that poses a difficulty in the ease of doing business in the sector.

Enactment of Veterinary Medicines Directorate regulations – After creation of the Directorate, a lot of effort went into the process of installing the VMD council to execute the mandate of the VMD. The process involved even court processes since beneficiaries of the mess intended to be corrected by VMD were trying to fight back by filing a petition, which KVA under Dr Kahariri’s leadership managed to work with other stakeholders to overcome. The Directorate will continue regulating the manufacture, distribution, importation, exportation and dispensing of the veterinary medicines in Kenya. This will enable Kenya to meet her international

obligations and minimize the misuse of veterinary products. Consequently, the antimicrobial residues in the foods of animal origin will be curbed thus increasing access of the animal and products to the lucrative International markets.

Animal Health amendment Bill and Kenya Foods and Drugs Authority (KFDA) bill - KVA also successfully advocated against sections of Health amendment Bill and KFDA bill that were detrimental to the existence of the veterinary Medicines Directorate and threatened to negate the gains acquired by separating the regulation of veterinary drugs with the human medicines

Veterinary Policy - the Kenya Veterinary Association has been pushing for the development of a national Veterinary Policy. The Policy has advanced beyond the cabinet level and is now a sessional paper 2 of 2020.

Veterinary Education and dissemination

Following the complexity of the profession’s training, Dr. Kahariri as the KVA’s chair has been in support of the Continuous professional development (CPD) of KVA members which involves any educational activity relevant to the scope of the Veterinary profession. This ensures that the veterinarians maintain or increase knowledge and problem solving or technical skills. It also ensures that the vet professionals are up to date on the modern technologies and innovations in the sector

Journal of Veterinary Medicine and One Health

- Under the leadership of Dr Kahariri, the KVA transformed the **Kenya Veterinarian** to a fully online Journal (JVMOH) and broadened the focus from Kenya to international. The journal provides a key platform to disseminate veterinary knowledge.

Animal Focus Magazine – The publication and distribution of the animal magazine has grown too be self-sustainable state under the leadership of Dr Kahariri

Community outreach, Animal Health and welfare

“The Animal sector is an integral part and major contributor to sustainable livelihoods, food security and economic development. They are the backbone of our economy,” according to Dr. Kahariri. As part of community outreach and development, Dr. Kahariri has been working with other stakeholders in the animal resource industry to organize major events targeting hundreds of thousands of communities with an aim of awareness creation and extension for improved productivity.



Dr Kahariri at a past event.

KVA in partnership with other organizations such as Brooke East Africa, World Animal Protection, ANAW and IFAW has been working hard to see to it that animals live a comfortable, a healthy and a happy life.

Welfare of the KVA members

Dr Kahariri’s leadership has been at the forefront to fight for the rights of the members in all spheres. In order to strengthen the voice in this aspect, Dr Kahariri among other professionals initiated the formation of a union for the veterinary professionals in 2012, an initiative that succeeded five years later to resulting in the successful registration of the Union of Veterinary Practitioners. The purpose of the union is to work in collaboration with KVA to agitate for the welfare of the professionals and consequently better veterinary service delivery to the community.

The association has also packaged attractive products accessible to members including, motor vehicle insurance, medical, last respect insurance, access to the online journal of KVA (Journal of Veterinary Medicine and One Health) among other products. Dr Kahariri has also nurtured a KVA SACCO intended to provide financial solutions to

the KVA members

The growth of KVA Financial base and project portfolio

For the last 10 years, KVA recorded the highest financial turnover in 2017 under the leadership of Dr Kahariri. This was associated with the strengthened financial systems and partnerships. “HR audit and re-alignment if correctly done is a game changer in management of organizations of KVA’s nature,” said the Chairman.

In the recent past KVA has created new partnerships with KCB Foundation, Kenya Markets Trust, World Vision Kenya, State Department for Livestock, Pastoral Parliamentary Group (PPG). KVA has also deliberately focused on strengthening all other existing partnerships to ensure continued collaborations and synergies in the industry.

Strengthening Livestock Marketing infrastructure

KVA under leadership of Dr Kahariri, has discovered that that as long as the livestock producers remain poor, the professionals are more likely to remain poor also. Therefore, to address the welfare of KVA members in a sustainable manner, KVA undertook initiatives to encourage commercializa-

tion of livestock enterprises by offering extension services and awareness creation with focus on the market dynamics.

As a key requirement to international trade, KVA prioritized working with the State Department for Livestock to establish an Identification and a traceability system for animals to enable traceback of animals and products and contribute to increased access of Livestock and livestock products to the local and International markets. Together State Department for Livestock, KCB Foundation and World Vision International, Kenya Markets Trusts and other stakeholders, KVA has managed to develop the draft legal framework and subjected the same to stakeholders for the process and due for enactment soon. This system, coupled with other initiatives like development of a feedlot system is envisaged to revolutionize the livestock sector

Challenges he faced as the National Chairperson of the Association

The leadership opportunity offers a fair share of challenges and calls for a lot of dedication and personal sacrifice since emerging issues keeps on confronting the Association and regardless of the circumstances, the expectations from the membership is constantly high. "Having volunteered to lead the organization, I have always had to rise to the occasion and confront the issues some of which are delicate, others risky in nature," he said. "Just like any other leadership positions, I have had to deal with lots of divergent opinions among the members and sometimes my fellow leaders. Some of these scenarios call for a tactical approach and in some few occasions may end up with some very dissatisfied members because decisions have to be made," he concluded.

The leadership position is also quite demanding and therefore calls for a lot of discipline and balance as far as time is concerned. Like other membership organizations, the main source of income is membership subscription. Members' expectations always remain high and determine the rate of members subscribing and consequently the amount of funding to run the affairs of the Association. We have been able to partially overcome this by remaining vigilant and alive to the members' welfare issues

Dr Kahariri's aspiration is to see a smooth transition and vibrant leadership taking over the running of the Association and continue with the development agenda that his leadership has set. Together with the outgoing team, he has made sure that KVA has a strategic plan to guide KVA for the next five years commencing from the year 2020.

AF HUMOUR

Veterinarian billing

A man takes his sick Chihuahua to the veterinarian. They're immediately taken into a back room.

Soon, a Labrador walks in, sniffs the Chihuahua for 10 minutes and leaves.

Then a cat comes in, stares at the Chihuahua for 10 minutes and leaves.

Finally, the doctor comes in, prescribes some medicine and hands the man a \$250 bill.

"This must be a mistake," the man says. "I've been here only 20 minutes!"

"No mistake," the doctor says. "It's \$100 for the lab test, \$100 for the cat scan and \$50 for the medicine."

Source: Jokes4us.com

RABIES FAQs: ALL THE INFO YOU NEED TO COMBAT THE DISEASE

1. What is Rabies?

Rabies is a viral disease that is transmitted through the saliva or nervous system tissues of an infected mammal to another mammal. The rabies virus infects the central nervous system and causes severely distressing neurological symptoms, disease in the brain, and, ultimately, death.

Rabies is a zoonotic disease, which means that it can pass from other animals to humans. Rabies is the deadliest disease on earth with a 99.9% fatality rate.

2. How is rabies transmitted?

Infection usually occurs following a bite or scratch from an infected animal, and the rabies virus is transmitted through the saliva of the host animal. Most often, the virus is passed to human populations through dogs (95% of worldwide cases), but the other species have been identified as important reservoirs of the rabies virus, including bats, raccoons, skunks, foxes, and coyotes.

While not as prevalent, transmission can also occur when saliva comes into direct contact with mucous membranes (i.e., eyes, nose, mouth), and very rarely through inhalation of aerosolized saliva, and through corneal and internal organ transplantation.

There have been cases where butchering raw meat from rabid animals has transmitted the infection, presumably through infectious neural tissue coming into contact with open wounds in the skin.

3. Where does rabies occur?

Rabies is found on every continent except Antarctica. In Africa, the Middle East, and Asia, canine rabies is a wide-spread problem and contributes to over 90% of rabies cases world-wide. In developed nations and island nations, rabies is either well-controlled amongst domesticated animals, or it is non-existent.

Today, over 90% of rabies deaths are in Africa, Asia and the Middle East where canine rabies is widespread.

4. How big is the problem?

Rabies kills people, domestic animals (such as dogs and cattle) and causes financial hardship when people have to pay for vaccination after bite wounds. It is estimated that more than 5.5 billion people live at daily risk of rabies.

5. How many people die from rabies each year?

Estimates suggest that over 5.5 billion people live with the daily risk of rabies, with 59,000 deaths every year. Over 95% of these deaths are in Africa and Asia, with the majority occurring from rabid dog bites. Around half of the people who die are children.

In western nations, deaths are rare (1-3 deaths per year in the United States), with cases of clinical rabies

The screenshot shows the homepage of the Global Alliance for Rabies Control (GARC). At the top, there is a navigation bar with 'USER LOGIN', 'DONATE', and social media icons. A search bar is also present. Below the navigation bar, the GARC logo is on the left, followed by a 'Countdown to World Rabies Day' section showing 0 days, 4 hours, 7 minutes, and 26 seconds remaining. To the right is a banner for 'END RABIES: COLLABORATE, VACCINATE' with the World Rabies Day logo (September 29). A language selection bar offers 'English' and 'Français'. The main content area is titled 'World Rabies Day event resources' and includes a sidebar with links like 'Register an event', 'Events', and 'Event resources'. The main content features several resource cards: 'Event Toolkit', 'Banners and logos', 'Personalised posters', 'Resources to help with your event' (including 'Social Media Toolkit with WRD theme' and 'Radio scripts'), and 'Take action'. A 'COVID-19 and tips for your companion animal' section is also visible on the left.

rabiesalliance.org

occurring typically in people who did not realize that they had been exposed.

6. Is rabies always fatal?

Yes, there is no effective treatment once clinical symptoms appear. Rabies has the highest case-fatality rate of any infectious disease known to man, because there is no proven cure or treatment available once there are signs of an infection. However, if proper medical treatment (post-exposure prophylaxis, PEP) is received immediately after exposure to the bite or scratch of a rabid animal, rabies infection can be halted before symptoms of the disease are present, and the disease can be prevented.

7. How does rabies perpetuate poverty?

Some of the world’s poorest people are those most at risk of the disease. Post-Exposure Prophylaxis (PEP) is a course of vaccines administered urgently after exposure to the virus from a rabid animal. PEP stops the onset of clinical symptoms and certain death. However, it comes at a high price, sometimes several times a household's monthly income. Families living in rural areas of Africa and Asia often face the desperate choice of selling livestock (on which they depend for food) to pay for the cost of rabies treatment or dying (or allowing a family member to die) of the disease. Currently, PEP costs the global economy 10 times the amount it would cost to eliminate canine rabies at source (by vaccinating dogs). Overwhelmingly, this cost is paid for by the world's poorest people, perpetuating their poverty.

8. Have I been exposed to rabies?

The rabies virus is transmitted through saliva or brain/nervous system tissue of an animal infected with rabies. The infectious material then needs to pass into the body, usually through a bite wound, open cuts in skin, or less commonly through mucous membranes such as the mouth or eyes.

- A person can only get rabies by coming in contact with these specific excretions and tissues. Rabies vi-

rus becomes noninfectious when it dries out, for example, when infected saliva or other material is exposed to sunlight.

- You have not been exposed to rabies if the animal doesn't have rabies itself – most dogs do not have rabies.
- you have petted or handled an animal.
- you have had contact with blood, urine or feces.
- In extremely rare cases, humans have been infected because they inhaled aerosoled saliva that contained the virus (e.g., in caves with very large bat populations) and through organ transplants from donors with rabies infections.
- If you have been bitten or scratched by an animal that is unknown to you and/or that appears unwell, you may have been exposed to rabies.
- Please take any potential exposure seriously. Thoroughly wash the wound with soap and water and seek urgent medical attention.

9. I am not sure if I have been exposed

In general, any mammal that bites you without being provoked should be tested for rabies. Rabies prophylaxis is then offered based upon the laboratory test results.

If testing the animal is not possible, see a doctor or local medical practitioner to discuss whether you need rabies post-exposure prophylaxis.

10. What are the symptoms of the disease?

Immediately after transmission of the virus (e.g. through a bite), there are no symptoms. The virus then travels through the nervous system, again without causing any symptoms, until it reaches the brain. Once in the brain (usually 1-3 months after the bite) the virus causes a variety of non-specific problems: general malaise, fatigue, headache and general weakness or discomfort. There may also be discomfort or a prickling or itching sensation at the site of bite. As the brain infection progresses, more specific symptoms are apparent and include: insomnia, anxiety, confusion, slight or partial paralysis, excitation, hallucinations, agitation, hypersalivation (increase in saliva), difficulty swallowing, and hydrophobia (fear of water). Eventually the patient falls into a coma and dies.

11. How will a person know they have rabies?

Early rabies symptoms can be easily confused with other diseases, and often rabies goes unrecognized. However, if rabies is suspected (usually because of a potential exposure to rabies in the previous few

months), several tests are necessary to diagnose rabies ante-mortem (before death) in humans. Tests are performed on samples of saliva, serum, spinal fluid, and skin biopsies of hair follicles at the nape of the neck, and analyzed for the presence of virus or antibodies to it.

12. What can be done for a patient with rabies?

Unfortunately, by the time a patient has clinical symptoms of rabies there is very little that can be done except palliative care. Medical teams can use sedation and tranquilizers to prevent the patient suffering from the distressing symptoms, but no cure exists.

A handful of people with early symptoms of rabies have recovered using the Milwaukee protocol. This is an intensive procedure where a coma is induced to protect the brain whilst the body fights off the rabies virus. However, even with intensive care facilities, the success rate remains extremely low.

13. Can people transmit rabies to other people?

Bites or and contact with saliva from a person infected with rabies during the symptomatic stage of the disease could theoretically transmit rabies, and people who have been exposed to rabies patients should be offered post- exposure prophylaxis. Documented cases of rabies known to be caused by human-to-human transmission have occurred among recipients of transplanted corneas and other solid organs, when rabies infection in the donor was not suspected.

Casual contact with a person infected with symptomatic rabies (touching unbroken skin or contact with non-infectious tissues or bodily fluids) cannot transmit the rabies virus to another person. Puncture wounds due to needle sticks penetrating neural tissue during the care of a rabies patient does constitute an exposure to rabies and requires treatment. It may be possible to transmit the virus from a symptomatic rabies patient through mouth-to-mouth contact or kissing. The virus has been reported to be present in sperm or vaginal secretions, so transmission through sexual intercourse with an infected person may be possible. Oral sex with a person infected with the rabies virus may also carry a risk. If you have risky contact with an infectious person 14 days prior to the onset of clinical symptoms, post-exposure prophylaxis is recommended. Risky behaviors include: bites, kisses or other direct contact between saliva and mucous membranes or broken skin, sexual activity, and sharing eating or drinking utensils or cigarettes.



14. If I am receiving a rabies vaccine after exposure, can I transmit rabies to other people?

No, patients who are undergoing preventative vaccination against rabies are not able to transmit the virus to others. The vaccine does not contain live virus but rather a killed form of the virus and is non-infectious.

15. What animals can have rabies?

Worldwide, the main reservoir of the rabies virus is the dog. Rabies can also be present in different wildlife species, such as raccoons, skunks, mongooses, jackals, foxes, coyotes, raccoon dogs and bats. The animals that can act as reservoirs of rabies infections vary across countries, but because of the less common contact between humans and wildlife, transmission to people is most commonly from dogs.

Cats are not natural reservoirs of the virus, but they can become readily infected by rabies and can transmit the disease. Any mammal can theoretically be infected with rabies and can therefore transmit the disease to humans if exposure occurs.

Small rodents are not reservoirs of rabies, and are rarely reported to be infected with rabies, so a bite from a squirrel, rat, mouse, guinea pig, hamster, rabbit, chipmunk or gerbil generally does not usually require post exposure prophylaxis. However, larger rodents such as groundhogs and beavers have occasionally been reported to be rabid.

Bats can be infected with rabies, and bats that are behaving abnormally (e.g. venturing out during the daytime, crawling on the ground, flying aggressively into a human, or trapped in a room) have a high chance of being rabid.

In general, any unprovoked mammal that bites a person could be rabid, and PEP should be considered for the bite victim, based upon medical advice and laboratory test results. When the animal is not available for testing, medical advice should be sought regarding the need for rabies vaccination.

16. Can I get rabies from an animal not showing clinical signs of rabies?

Experiments on dogs, cats, and ferrets have shown that rabies virus can be excreted in the saliva of infected animals several days before they show signs of illness. Extensive studies have not been done for wildlife species, but it is known that wildlife species also excrete rabies virus in their saliva before the onset of signs of illness. This means that animals can transmit rabies to other animals and people even if they are not yet sick because of their infection.

17. I found a bat in my room, what should I do?

Do not attempt to capture the bat yourself, unless you are well-equipped to do so. Leave the room and close the door. Contact an animal control officer, and determine if anyone in the household (including pets) could have possibly been exposed to the bat. Contact a medical professional, veterinarian, or public health official to report the exposure and ask about rabies vaccination.

Often a person is not aware that they were bitten by a bat. If you should awaken from sleep and notice a bat in the room, contact a medical professional immediately. Bite marks from bats are sometimes hard to see due to the relatively small size of their teeth, and it is possible for transmission through a bat bite to go unnoticed as a result. Watch our Bats and rabies video for more information.

18. If rabies is passed through saliva, why are scratches a risk?

Scratches from an infected animal may cause infection because saliva is sometimes present on claws - particularly if the disease is causing the animal to drool excessively (hyper-salivation).

19. Can I get rabies by preparing or eating raw meat from a rabid animal?

No case of human rabies resulting from consumption of raw meat from a rabid animal has been documented. Consumption of meat or milk from a rabid animal is strongly discouraged and should be avoided, but is not considered an exposure. However, there have been documented cases of rabies transmission in butchers who were cutting meat from a rabid animal. This occurred when virus entered the body through breaks in the skin whilst butchering. Preparation of meat from domestic animals or wildlife killed by hunters is considered a high risk activity for rabies transmission. In some countries there are guidelines that prohibit the slaughtering of animals that have been known to be exposed to rabies in the recent past.

20. Can I get rabies if I drink milk from an animal that has rabies?

There are no scientifically documented cases of rabies transmission through raw milk consumption, or from eating raw meat from a rabid animal. Consumption of meat or milk from a rabid animal is strongly discouraged and should be avoided, but it is not considered an exposure, and PEP is not indicated.

21. I have been bitten by an animal that might be rabid. What should I do?

Apply first aid, as below. Then you MUST seek medical advice about post exposure prophylaxis as soon as possible.

If you are bitten or scratched by a potentially rabid animal, you must

- Wash the wound thoroughly with soap and water for at least 15 minutes.
 - Apply ethanol or a similar antiseptic to prevent secondary infection.
 - Seek urgent medical attention. You need to start post-exposure prophylaxis as soon as possible.
- If you have already had pre-exposure prophylaxis,



An anti-rabies campaign in progress.



A vaccination in progress.

you still need further treatment. Modern vaccines are the only way to prevent the onset of rabies after exposure. Traditional remedies, such as jackfruit gum and chilli powder do not stop the rabies virus.

Please treat any potential exposure to rabies seriously. Once clinical symptoms appear, death is almost inevitable.

22. I was bitten by an unvaccinated puppy. Do I need vaccination?

Most puppies that bite are exploring the world using their mouths and will interact with people in a playful way, which includes nipping and biting, and do not have rabies. However, all bites from unvaccinated animals living in regions where rabies is endemic should be investigated by a medical expert. If the puppy has been restricted indoors, walked only on a leash outdoors, and the owner is confident that the puppy has not interacted with any wildlife or other dogs, then it is extremely unlikely that the puppy is infected with the rabies virus. A person bitten by an unvaccinated puppy that has been roaming outdoors or exposed to other animals may be at risk for the rabies virus and should seek medical advice. Even puppies that have been contained in a fenced-in backyard, may still have been exposed to high risk wildlife such as skunks, coyotes, fox, raccoons and bats, and a bite from an unvaccinated puppy is a considered a risk for

contracting the disease if the puppy has not been in a restricted environment.

23. I think that I was exposed some months/years ago and I never did anything. Can I get rabies?

Yes. It is possible, though very rare, to develop clinical rabies after an incubation period of several years. Typically, the incubation period for the rabies virus is between one and three months; however, the length of the time to onset of disease symptoms can be as short as a few days to as long as several years. As long as there are no symptoms of rabies after an exposure, PEP can still prevent clinical rabies from developing. If there is a suspicion of exposure, even as long as several years ago, victims can still benefit from PEP, and should immediately consult a medical expert to determine if it is necessary.

If there is potential that there was exposure to the rabies virus, then PEP is recommended.

24. I have been vaccinated against rabies, but then got exposed. Do I still need treatment?

Yes, you will need a booster series of rabies vaccinations, to make sure that your immune system is prepared to fight off the virus. You do not need to have rabies immunoglobulin (RIG) if you have been pre-vaccinated.

If you suffered a rabies exposure but have received

a complete series of rabies vaccinations within the last three months, you do not need vaccine or RIG. Thorough wound cleansing is still recommended.

25. What is post-exposure prophylaxis (PEP) and should I have it?

Immediately after any exposure to the virus, medical attention should be sought. It is critical to remember that the bite wound must be cleaned with soap and water for 15 minutes, and anti-rabies vaccine will be needed and, often, anti-rabies immunoglobulins too. Once the clinical onset of rabies is evident, there is no cure available and death is inevitable. It is therefore extremely important to get prompt medical treatment. Full PEP consists of thorough washing of the wound, followed by immunoglobulin injections (antibodies against the rabies virus) into the wound and a series of rabies vaccinations that are administered after an exposure occurs, to prevent disease progression. If the bite victim has never been immunized for rabies, they should always receive the vaccination and the immunoglobulin treatment. For victims who were vaccinated with a modern rabies vaccine prior to exposure, you will still need booster doses of vaccine. You will not need immunoglobulin injections.

26. I missed one of my PEP Rabies vaccinations. Do I need to start again?

No, you will not need to start over again if you deviate from the vaccine dosage schedule, but you should contact your doctor if a PEP injection is missed. The next dose will be given as soon as possible. Tell your doctor if you know in advance that you will miss one or more doses of PEP. In order to be protected against the disease, the full series of vaccines needs to be administered, and all doses, particularly at the start of the course, should be given at the recommended intervals wherever possible.

27. What is pre-exposure prophylaxis (PrEP) and should I have it?

Pre-Exposure Prophylaxis (PrEP) is a preventative series of rabies vaccinations, before anyone is exposed to rabies. They are usually given to people considered to be at a high risk of exposure. People who are likely to come into contact with rabid animals or the rabies virus should consider rabies pre-exposure vaccinations. Veterinarians, those who work with rabies in laboratory settings, animal control workers and wildlife officers should consider pre-exposure rabies vaccination.

If you are travelling to a country where rabies is widespread, and you are likely to interact with animals far from medical help if you were bitten, you should consult your doctor about receiving pre-exposure vaccination against rabies.

If you have PrEP and are exposed to rabies you still need post-exposure prophylaxis (PEP). But, in this case, the PEP number of doses is reduced.

28. How often are routine boosters needed after pre-exposure immunization?

Routine boosters are only recommended for workers at high risk of rabies exposure, such as lab workers and veterinarians. No booster doses following a primary series of pre-exposure vaccinations or post-exposure treatment are required for individuals living in, or travelling to, high-risk areas.



Children come into close contact with pets.

The recommended booster schedule depends upon the potential risk of exposure. People at high risk of exposure should have a blood test to evaluate the presence of rabies neutralizing antibodies. The time interval between blood tests is determined by the degree of risk. Directors of rabies laboratories should have specific requirements in place to monitor the presence of rabies neutralizing antibodies in the workers. In the event that the serological titre of someone working in a rabies laboratory falls below 0.5 IU/mL, they should receive one routine booster injection.

29. Can an animal or a person undergoing PEP transmit rabies?

The rabies vaccine cannot cause rabies infection, so exposure to a person or an animal undergoing post-exposure prophylaxis does not constitute an exposure.

30. What can be done to reduce the risk of rabies exposure?

Travelers and residents of areas of high rabies

incidence can be vaccinated against rabies prior to exposure.

In areas where rabies is known to occur, people are advised to reduce their exposure to wild animals and dogs.

To prevent potential transmission to humans, household pets such as dogs, cats and ferrets should be vaccinated against rabies and have their vaccinations updated regularly.

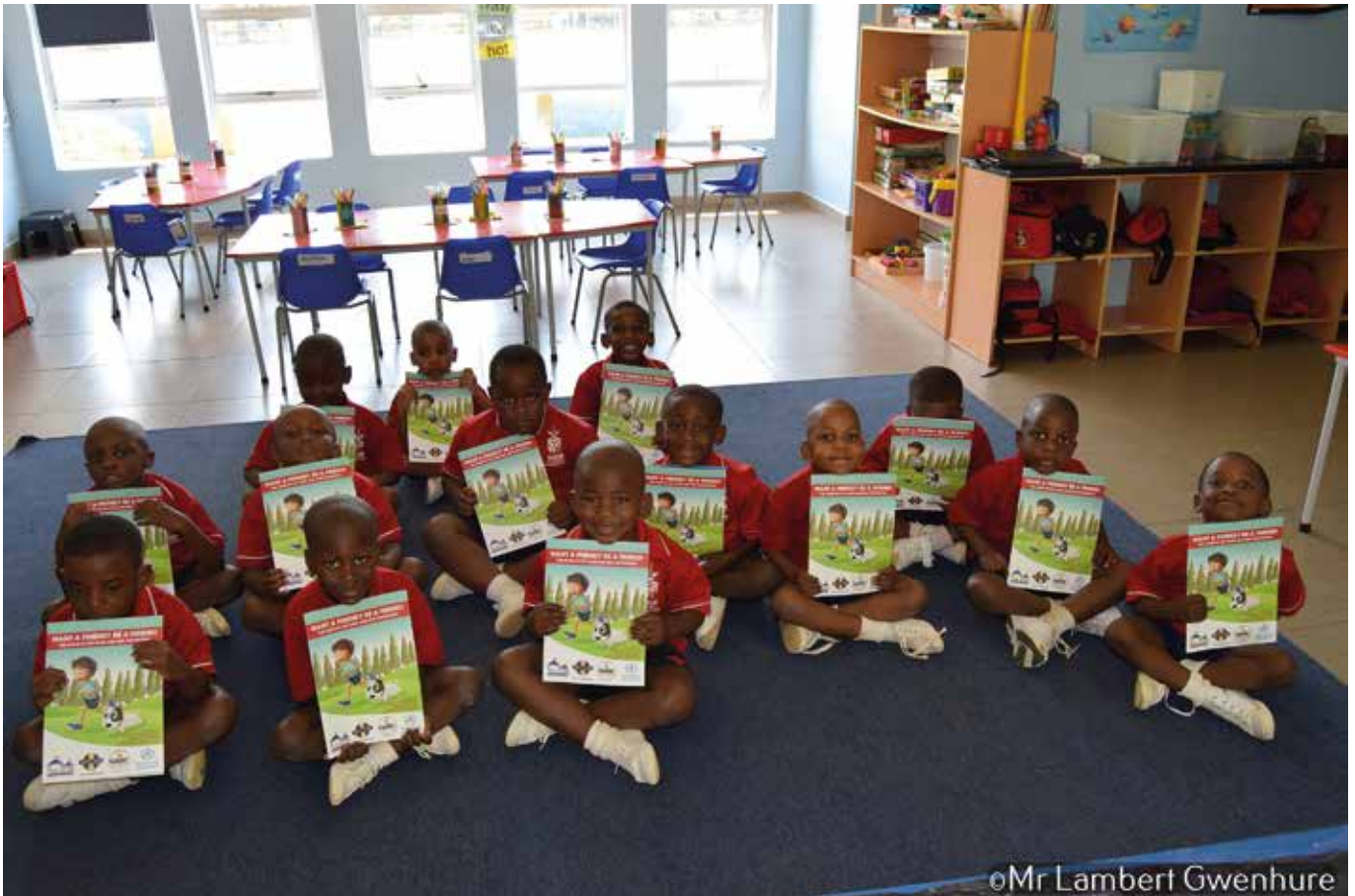
Abnormally-behaving wildlife may be infected with the rabies virus and should be avoided. Efforts should be made to keep bats out of residences and public buildings due to the potential for unseen transmission.

31. I have a high anti-rabies antibody titre after pre-exposure vaccination. Am I protected against rabies?

No. If you are exposed to the virus through a bite or a scratch you will still need to have a post-exposure prophylaxis booster (two doses of vaccine, but no need for immunoglobulin). However, whilst your antibody titre remains above 0.5 IU/ml you do not



Wild dogs can be a source of rabies.



©Mr Lambert Gwenhure

Educating children on rabies and general animal welfare is a smart investment.

need to boost your pre-exposure vaccination.

32. Should anyone not receive vaccination after exposure?

Regardless of allergies and medical conditions, including pregnancy, anyone who has been exposed to the rabies virus should seek medical attention about getting the vaccine. Anyone who has had a life-threatening allergic reaction to a previous dose of the rabies vaccine, or who has a weakened immune system from HIV/AIDS, steroid use, or cancer drugs may need specialized treatment, but should still receive vaccination.

33. Can I have sex while I am undergoing PEP?

Unprotected sexual intercourse does not present a risk to the partners of those undergoing PEP after an exposure to the rabies virus. The vaccine treatment will prevent you from developing rabies, and no exposure to rabies will result after intimate contact with a person receiving prophylaxis.

34. Do traditional remedies work to prevent rabies?

No. None of the remedies used in traditional medicine, such as jackfruit gum and chilli powder, stop rabies from developing. Rabies specific vaccines are the only way to stop the onset of clinical symptoms and to prevent death.

35. Can a baby be given rabies vaccinations?

Yes. Both the rabies vaccine and the rabies immunoglobulin (RIG) should be administered for a suspected rabies exposure, and are considered safe for pediatric use. The recommended site of injection is the thigh for very young children and in the deltoid of older children. Rabies vaccines are used extensively worldwide in children, who constitute the largest population of exposed individuals



A bite wound being cleaned

36. Are there any side effects of the vaccination?

With WHO-approved vaccine, side effects are mild. There may be some pain at the site of injection, swollen glands, headache, aching muscles, malaise, and shivering. In rare cases, allergic reactions such as rash, wheezing and hives, swelling of the upper respiratory tract, and itching can also occur. Serious complications are very rare.

The risks for death from ra-

bies after exposure are far higher than any potential pain or side effects after vaccination.

In a few countries, locally-produced vaccines that are not WHO-approved are still used. Whilst some are safe and effective, there are cases where ineffective and old technology vaccines have been administered and have resulted in rare, but severe, side effects.

37. Can vaccination itself cause rabies?

No. The World Health Organization approves human rabies vaccines, and these modern vaccines are very safe, effective and do not contain live rabies virus. No cases of rabies have been documented after administration of WHO-approved rabies vaccines.

38. Does the vaccination hurt?

Vaccination against rabies used to involve many painful injections to the stomach. Modern vaccines are given into the muscle or under the skin of the upper arm and are not any more painful than other vaccines.

39. How can I tell if my pet has rabies?

Often you can't tell by looking.

An animal with rabies may stagger or stumble and display unprovoked aggressive behavior or be over-friendly. Animals with advanced rabies may also foam at the mouth. This is because the rabies virus affects the salivary glands causing hyper-salivation. They may also develop hydrophobia (fear of water).

None of these symptoms are definitive signs that an animal has rabies, and rabid animals may or may not exhibit these signs.

If an animal shows any of these signs, you should contain it to prevent possible exposure either to you, your family, or another animal, and contact your veterinarian or animal health department.

To confirm an infection, the animal must be euthanized and a brain tissue sample must be tested for the presence of rabies in a reputable laboratory.

40. What can I do to protect my pet from rabies?

Vaccinate pets according to the recommended schedule, and take your pet to the veterinarian for a booster should they get bitten by a potentially rabid animal. Additionally, spay or neuter your pet to reduce the number of potential strays that are not vaccinated against rabies. Keeping your pet on a leash when outdoors prevents inadvertent exposure to a rabid wild animal.

Source:rabiesalliance.org



Celebrate World Animal Day - 4 October

MISSION: TO RAISE THE STATUS OF ANIMALS IN ORDER TO IMPROVE WELFARE STANDARDS AROUND THE GLOBE

To achieve this, we encourage animal welfare organisations, community groups, youth and children’s clubs, businesses and individuals to organise events in celebration of World Animal Day. Involvement is growing at an astonishing rate and it’s now widely accepted and celebrated in a variety of different ways in many countries, with no regard to nationality, religion, faith or political ideology.

Events are organised under the World Animal Day Umbrella by being publicised on this website and advertised using the World Animal Day brand and logo. Global branding effectively ties all events together and, over the years we have found this approach to be particularly helpful to grassroots groups who struggle to attract media attention in order to raise awareness of their work and fundraise. This draws attention to animal issues and makes them front-page news – a vital catalyst for change. Each year the logo becomes more widely recognised as a global brand for animals. A brand that unites the animal welfare movement - firmly establishing itself as a platform for raising the status of animals.

Participation in World Animal Day will continue to grow until it reaches and connects animal advocates in all corners of the world. It’s something that everyone can join in with, whether they are part of an organisation, group, or an individual. We regularly receive wonderfully inspiring messages about World Animal Day from animal advocates around the world. For example: “Thank you once again for your inspiration and support towards this auspicious World Animal Day that continues to make a huge difference for animals in Africa and the world at large.” Josphat Ngonyo, Executive Director, Africa Network for Animal Welfare, and “What World Animal Day is doing for animals is truly influencing all of us in amazing ways.”

Why celebrate World Animal Day?

Building the celebration of World Animal Day mobilises people for action now for a better future for animals. Throughout history, social movements (mass actions) like World Animal Day, have always been a major vehicle for ordinary people’s participation in politics, and key in fighting for social justice and reform. The lives of animals are profoundly affected by the actions of individuals, businesses, and nations. It’s therefore essential that, as sentient beings, their rightful status as recipients of social justice is established and translated into effective animal protection. World Animal Day embraces all animals and the unique concerns of each, in every country, and makes animals front-page news. Through increased awareness and education, we can help develop a compassionate culture which feeds into legal reform and social progress to make this world a fairer place for all living creatures. A world where animals are recognised as sentient beings and full regard is always paid to their welfare. World Animal Day has

already brought about a significant and lasting contribution towards advancing animal welfare standards, and its influence will only continue to grow. We regularly receive heart-warming messages from people keen to tell us about what being involved with World Animal Day has helped them achieve and we'd like to share a few of these phenomenal victories with you now.

Amina Abaza, who heads the Society for the Protection of Animal Rights in Egypt (SPARE), has used World Animal Day to successfully lobby for the addition of a clause about animal welfare in the new Egyptian Constitution and, more recently, submitted a Model Animal Welfare Act to the Egyptian Parliament.

Another ground-breaking event achieved by SPARE was held at Cairo University's Faculty of Veterinary Medicine where animals are used in education. Attended by professors, students, the Dean and Vice Dean of the Faculty, and other dignitaries, speeches were made by the President of the Egyptian Veterinary Association and representatives of several, highly-respected animal welfare NGOs to increase awareness about alternatives to the use of animals in education and a film was shown about animal suffering throughout the world. Both Animals Lebanon and AnimaNaturalis Colombia have achieved a Municipal Resolution that requires the Secretariats of the Environment and Civic Culture to commemorate World Animal Day each year, which is helping tremendously to raise awareness among citizens about the ethical treatment of animals.

The Sudanese Animal Care & Environmental Organisation's greatest achievement is the introduction of animal protection legislation by the Sudanese parliament. Much of the work to achieve this magnificent goal is attributed to increased awareness of animal welfare issues brought about by World Animal Day.

In many countries, World Animal Day is now being celebrated by various government departments. For example, the Himalayan Animal Rescue Trust (HART) is delighted that Nepal's Department of Livestock Services gets involved each year. Khageshwar Sharma, our Ambassador in Nepal says: World Animal Day events encourage people to work together to sensitise communities, making them aware of the needs of animals they live among, and also of how they can improve their lives. Creating an outlook that respects all animals is a slow process and World Animal Day acts as an annual marker to measure progress."

There are other days linked to animals such as: World Day for Laboratory Animals on 24 April and World

Animal Day on 3 March, and these are important too. However, World Animal Day is the one day of the year that embraces all animals and the unique concerns of each, in every country. It's a special opportunity to commemorate our love and respect for animals by doing something special to highlight their importance in the world. It unites the animal welfare movement, mobilising it into a global force for change. Participation in celebrating World Animal Day grows each year, with a huge variety of inspiring events being held in an increasing number of countries. In 2003, we recorded 44 events being held in 13 countries and this has now grown to an estimated 1000 events in around 100 countries. YOU can help enhance the visibility of World Animal Day.

Types of events held:

- awareness & educational events;
- shelter open days & pet adoption events;
- Increased awareness, combined with better education for both adults and children, is slowly swaying the attitudes of people towards treating animals in a humane and compassionate way.
- conferences & workshops;
- animal blessing services;
- fundraising events such as concerts and sponsored walks through to gala balls;
- school events to educate the younger generation such as animal-related competitions, concerts & film shows;
- workshops to educate the owners of working animals;
- spay & neuter marathons and veterinary treatment camps;
- rabies prevention awareness and vaccination;
- radio & TV interviews to raise awareness of animal issues & World Animal Day and its mission
- peaceful protest marches to either raise awareness of a specific animal welfare issue or to encourage governments to introduce animal protection legislation.

MISSION OF WORLD ANIMAL DAY

To raise the status of animals in order to improve welfare standards around the globe. Building the celebration of World Animal Day unites the animal welfare movement, mobilising it into a global force to make the world a better place for all animals. It's celebrated in different ways in every country, irrespective of nationality, religion, faith or political ideology. Through increased awareness and education we can create a world where animals are always recognised as sentient beings and full regard is always paid to their welfare.

A reflection on antimicrobial resistance

By Dr. Wairumbi Migwi

Since antibiotics were invented, they have played a critical role in human and animal health. However, there has been widespread inappropriate use of these antibiotics, which has consequently rendered them ineffective in tackling a number of microbial diseases.

In recent years, it has become a norm in every farm you visit for a farmer to complain about either an acaricide or an anthelmintic that is not giving the desired response. Animal and human health service providers have also not been immune to this disastrous experience, they have frequently complained of conditions unresponsive to treatment.

This calls for serious intervention otherwise, we are all headed for very tough times ahead where no particular drug will be effective against any micro-organism. This growing worrying trend of antimicrobial resistant has attracted global concern on the need of reverting and ultimately putting this situation under control.

The drug resistance has been contributed by both the general public and animal and human health service providers, either out of sheer ignorance or being unconcerned through a number of ways.

Underdosing concerns

For instance, under dosing has taken the lion's share in contributing to this menace. Administration of drugs is being done in total disregard to the accurate body weight of the patient and severity of the condition. For example a 200 kg adult cow may receive the same volume of 20% oxytetracycline as a cow weighing 400 kg, since most farmers and animal health providers administer 20ml of the drug.

Considering that the dosage rate of 20% oxytetracy-

cline is 20mg/kg bwt, then it means that the 400kg bovine ought to receive 40ml. This means that a dose of 20 ml to the bovine is an under dose by 20ml. This exposes the target organism to sub-lethal doses of antibiotics causing mutations of the disease causing organisms and subsequently giving rise to a generation of organisms that are resistant to the drug.

Growth promoters

Increased use of antibiotics as growth promoters, especially in the poultry and pig industries has led to high levels of antimicrobial residues in poultry and pig products. Consumption of such products leads to antibiotic resistance in humans. For example due to antimicrobial resistance, an infection such as pneumonia, which ordinarily can be managed quite well, may end up leading to a prolonged hospital stay, high medication cost and even mortalities.

Wrong use

Imprudent use of antibiotics in strict consideration to their mode of action especially in handling cases of mastitis is another factor that needs to be addressed.

In this regard, the individuals handling the drugs irresponsibly combine bactericidal and bacteriostatic drugs. The individual handling the antibiotics uses a different group of drug as intramammary to that used systemically. This renders the target organism resistant to both of the used drugs.

Incomplete dosing

Failure to complete the full dose of antibiotics in both humans and animals has also had its own share in this menace. Most human patients after taking a medication for a number days and get a feeling of having recovered, discontinue the medi-



A veterinary surgeon, Dr Sabuni, counsels community leaders in Narok on the proper use of antibiotics

cation without knowing the kind of problems they are putting themselves in if they are to come down with a similar disease in the future. Similarly, farmers discontinue giving antibiotics when they notice some improvement in their animals.

Antibiotics which require repeated administration for a number of days in animals, for example penicillin and potentiated sulfonamides are being administered once or for a few days, thus increasing the chances of antibiotic drug resistance.

Indiscriminate use

Indiscriminate use of antibiotics for prophylactic purposes, especially what is popularly known as ‘antibiotic of climatic change’, is another factor that cannot go unmentioned with regard to antibiotic resistance.

Other factors that have immensely contributed to antibiotic resistance include:

- failure to comply with instructions to observe

the withdrawal period for eggs, milk and meat after the animal has been treated with antibiotics.

- adulteration of milk to prolong shelf life with the use of penicillin. In addition to contributing to antibiotic resistance, this may also cause allergic reaction to penicillin treatment in human beings.
- treatment of the animal without undergoing a thorough clinical examination and diagnosis by a qualified and registered animal health service provider.
- failure to do culture and sensitivity test so that the antibiotic with the narrowest spectrum of activity is used.

A comprehensive coordinated effort must be sought by the government, the policy makers, the general public and animal and human health service providers in tackling this disaster that is on the verge of turning the world into a state of health quagmire.

A man and his money are soon parted

By Janet Omondi, Retired Meat Inspector

A man in a black hooded 'kabuti' expertly drove a herd of 28 finished Zebu cattle to the slaughterhouse. This was the final stretch of their journey, having travelled from a fattening ranch in Taveta.

It was a dreary, rainy day but this did not deter the man's work and business. The man had secured an order to supply beef to the 'Kijani One Hypermarket', a chain of supermarkets. *Kijani One* was a relatively new entrant into the Kenyan supermarket retail business. However, it had quickly gained popularity with the budding middle-class, enabling it to open branches in the greater Nairobi area as well as in Mombasa, Eldoret and Kisumu.

Kijani One had a butchery section that stocked both white and red meats. It was to this section that the man was supplying beef. This was a lucrative order, one the man had greatly struggled to get. The rain certainly was not going to come between the man and his money.

The Zebus were received at the abattoir. In adherence to the law, the animal movement documents were examined by the Meat Inspector. 'Movement permit iko sawa,' said the meat inspector to the man. The documents were in compliance. The animals were admitted into the slaughterhouse.

Antemortem inspection of each of the cows was then conducted by the inspector. 'Wako safi hawa ng'ombe wako,' remarked the inspector as he mouthed the last bull. They had all passed the

examination. The animals would not be slaughtered until the following day to allow for the prescribed resting period. Having secured a slaughter slot for zebus for the following day, the man left.

Bright and early the following morning the man arrived to oversee the slaughtering of his 28 cattle. The slaughtering was smooth, the meat inspection was thorny. Nearly a third of the now freshly produced beef carcasses had a yellow patch or two each on the neck muscles. The yellow patches were abstractly shaped, measuring 1 - 2 inches in diameter. This was evidence of an injection site.

'Hizi nyama ni lazima zipimiwe zaidi kwenye maabara ya food safety,' the Meat inspector informed the man. Samples from the carcasses and organs had to be submitted for food safety analysis to determine the type and level of drug they contained. 'Argggh,' the man grunted. The inspector explained, 'Inaonekana kana kwamba hawa ng'ombe saba walikuwa wamedungwa dawa. Kwa hivyo kwa sasa hatuwezi tukapitisha nyama hizi ziuziwe uma bila laboratory testing.' The man did not look pleased at all.

'Tutachukua sampuli ya maini, figo na mafuta kutoka kila moja ya hawa saba tutume kwenye maabara yetu ya serikali. Hizi carcass saba zitahifadhiwa kwenye detention room ambayo ni freezer pia mpaka tupate results,' the inspector indicated to the man with finality. The man grunted even louder and walked away.



Pig carcasses at a slaughter house. They are checked to ensure that the meat quality conforms to set standards.

Samples of the liver, kidney and adipose tissue were collected and submitted for drug residue analysis. A week later, the results of the analysis were received from the Food Safety Laboratory.

‘Higher than acceptable levels of trypanocides found in the submitted samples.’ The meat inspector read out the results for the man. ‘Eh?’ The man asked appearing perturbed. ‘Hii inamaanisha kwamba hii nyama iko na dawa kwa hivyo haifai kuuzwa kama chakula.’ The meat inspector explained. A forlorn look spread across the man’s face; possibly he was calculating his losses.

For further information, the Meat Inspector called the veterinary office from the area the cattle originated. ‘Doc, some of the cattle for which you issued movement permits have returned positive for drug residues. Did you know if drugs had recently been administered to them?’ The inspector asked the veterinary officer on the other end of the line.’

‘We try our level best by examining all animals and obtaining a thorough history before issuing movement permits, but sometimes the livestock keepers buy drugs and inject the cattle themselves. This means they may not observe withdrawal periods or may give incorrect doses,’ The vet explained. ‘Of course we advise against such practices, but they

do not always listen to us,’ he continued. ‘That is true, I understand what you are saying,’ the inspector replied. ‘Asante daktari for your input.’ The inspector said as he hang up.

The inspector and the man were now sitting in pin drop silence in the inspector’s office. The inspector was scribbling hurriedly on a legal certificate that would see the contentious carcasses move to their final destination. Upon completion, he handed it to the man. The man on reading it appeared perplexed. Obviously he was expecting a certificate of transport which is issued to move meat from a slaughterhouse to a point of sale.

‘Sielewi,’ He said, as he was a man of few words. ‘The meat is not safe for human consumption, we have condemned it.’ The inspector indicated with finality that he had issued a certificate of condemnation.

A certificate of condemnation is issued for meat deemed unsafe for human consumption. The meat is then destroyed.

With these words, the shoppers of ‘Kijani One Hypermarket’ were protected from eating meat with antimicrobial residue content.

The Burden of AMR

By Dr. Njoki Maina

Antibiotic resistance is a global phenomenon resulting in the emergence of pathogens with resistance to clinically important antibiotics, demanding creation of a new treatment protocol. Antibiotic-resistant bacteria cause life-threatening illness in humans, animals and pose a significant threat to global health and well-being.

Resistance mechanism

Microorganisms can be either intrinsically resistant to an antibiotic or develop resistance following exposure to that antibiotic. Resistance can develop as a result of mutation or direct transfer of genes encoding a resistance mechanism. Transfer of resistance genes can occur by a variety of mechanisms including transfer of genes carried on plasmids, which are also known as mobile genetic elements, direct transfer of naked DNA or transfer of similar DNA by bacteriophage. Genetic material, including antibiotic resistance genes, can spread very effectively between bacteria, even those of unrelated species.

Blame game

Over the years as antimicrobial resistance gained momentum, blame was thrown around between human medicine and animal health practitioners on who was to blame. It has now become evident that no group of people can fully 'carry the cross' for this, as it has happened as a result of cumulative decisions made on use and prescription of important drugs to both man and animal and even the environment (aquatic ecosystems).

The discovery of Multidrug resistant Salmonella Kentucky was of significant insight on how the animal-human-environment interface interacts in the spread of antimicrobial resistance. It was iso-

lated in poultry products, seafood, spices and pork being sold in meat markets in France, Europe and the Mediterranean region. Studies showed it was believed to have originated from Egyptian aquatic environment where antibiotics were used in fish feed.

Multidrug resistance

The emergence of several Salmonella serotypes resistant to multiple antibiotics in food animals underscores a significant food safety hazard. In 2015, Multidrug-resistant Salmonella caused foodborne illness outbreaks through contaminated pork products in the USA which resulted in severe infection in humans. The isolated strains were found to be resistant to multiple antibiotics, including ampicillin, streptomycin, sulfisoxazole, and tetracycline.

With such interactions with drug resistant infections, there is risk of treatment failure, loss of life, expensive cost of second and third line of treatment and the imminent risk of pan resistance whereby some diseases may become untreatable unless new antimicrobials are designed.

Interaction

The interaction between the different components in a food chain or the environment further contributes to the spread of antibiotic resistance across species. Although humans contract infections from farm animals, pets, fresh produce, meat, eggs, and other agricultural and non-agricultural food products, there are multiple entry routes for pathogens to these vehicles.

Foodborne pathogens such as Salmonella enter a farm from different sources, such as water, litter, personnel, equipment, vehicles, rodents, insects,

ANTI-MICROBIAL RESISTANCE

and pets. In addition, the movement of portable equipment and vehicles can act as a vector for carrying the pathogen to the farm environment or slaughterhouse. Similarly, antibiotic-resistant bacteria also spread through truck washing systems, lairage, barn floor, runway water, and holding pens, and potentially end up in animal carcasses during slaughter. Irrespective of the antibiotic use, antibiotic-resistant pathogens such as *S. Typhimurium* have been recovered from swine and poultry housed in antibiotic-free production systems, highlighting the possible role of environmental factors and vectors such as rodents, insects, and birds in spreading resistance.

The role of the vet

Veterinarians have a crucial role in educating the masses on the state of AMR and ways in which they can participate in minimizing spread of AMR.

1. Pause and rethink the need for an antimicrobial before prescribing to a patient.
2. Talk to farmers on the need to stop prescribing antimicrobials for their sick animals.
3. Educate the farmers and pet owners on how good animal husbandry, biosecurity and hygiene will reduce the need for antimicrobial use.
4. Start with the first line of treatment before proceeding to second and third line of treatment, and make use of sensitivity testing in order to use the narrowest appropriate spectrum activity drug.
5. Choose antibiotics that are non-critical to human care .
6. Consider alternative treatment choices available such as probiotics, plant derived compounds such as eugonol and aromatic oils, organic oils and the promising Direct Feed Microbial.
7. Know that you have the perfect platform to reach out to animal owners and food producers and inform them not to use antimicrobials as growth promoters in herds and aquaculture.

The implications of AMR affect us all and joint interdisciplinary collaboration is the only way to go. When given a platform, talk to people on judicious use of antimicrobials, the importance of finishing their full prescription and of course the need for people to stop self-prescribing antibiotics when they have illnesses like the flu. As veterinarians, we may not prescribe drugs for our human clients but we will surely educate them and enlighten them on proper pharmaceutical use and the dangers that come with misuse, overuse and under dosing of antimicrobials.



Drugs on a shelf in an agrovet. There is need for discipline and education to ensure AMR is kept at bay.

ANTIMICROBIAL RESISTANCE PROJECT IN KENYA: Action today, benefit tomorrow

If no action is taken today, by 2050, Resistance to Antimicrobials will kill more people than cancer

What are Antimicrobials?

Antimicrobials are natural or synthetic agents used to stop or kill infectious micro-organisms (bacteria, viruses, fungi and parasites) in humans, animals and plants.

What is Antimicrobial Resistance?

Antimicrobial resistance (AMR) refers to a situation where these micro-organisms become unresponsive to antimicrobials – medicines which they were initially responding to. With AMR, this means that the disease causing organisms responds poorly or not at all to medicines that they were initially responding to resulting in untreatable diseases, prolonged hospital care or deaths and high cost of treatment.

How does AMR impact on public health?

Today, global annual deaths in humans from AMR related causes is approximately 700,000 people. By 2050, this figure may increase to approximately 10 million deaths every year. The cost to global economies will be more than USD 100 trillion in losses which will be more than 50 times the expected economic output of Sub-Saharan Africa.

How does AMR impact on Agriculture and food security?

According to FAO, livestock products account for 78% of the value of the top five agricultural food products- valued at US\$ 822 billion. Livestock contribute up to 50% of the proteins consumed by people. In Kenya, seven million households keep livestock which contribute significantly to food and nutrition security. AMR related animal deaths and reduced livestock production will reduce food availability and access for the entire population.

How do micro-organisms become resistant?

Over use and misuse of antimicrobial drugs in humans and in agriculture (plants and animals) speed up the development of AMR. Resistant micro-organisms can be transmitted between animals, animal to people, people to animals, people to people and can be shed in the environment. Resistant micro-organisms can move from one geographical region to another.

What is the current AMR situation in Kenya?

It has been established that Kenya is already experiencing increasing levels of antimicrobial resistance affecting micro-organisms responsible for common cold, pneumonia and diarrhea among others. Due to a lack of systematic surveillance, the exact burden of antimicrobial resistance in Kenya is unknown.

What are the challenges to addressing AMR?

Some of the current barriers to addressing AMR include (i) limited awareness of its implications in human and animal health among the general public, policy makers and animal and public health practitioners (ii) inadequacy of or non-compliance with legislation governing manufacture, distribution and use of antimicro-

bials (iii) poor animal and plant husbandry practices (iv) poor surveillance systems.

What is the best way of addressing AMR?

AMR is a global problem and therefore requires global response. However, every country, sector and department requires to define specific strategies to address each of the challenges. AMR problem cannot be addressed by one sector hence the need for multi-sectoral coordination (this is called “One Health” approach) to build consensus and synergies in addressing diverse underlying factors that contribute to development and prevalence of AMR.

What can the members of the public do to mitigate AMR?

No action today, no cure tomorrow! There are simple things that can be done to reduce the escalation of AMR:

1. Do not insist on getting antimicrobials unless when it is absolutely necessary
2. Only use antimicrobials that are prescribed by a qualified persons
3. Always ensure a full course of complete treatment is administered or used when recommended
4. Veterinarians and animal health care givers should prescribe antimicrobials responsibly
5. Reduce the incidence of infection through effective sanitation, hygiene and infection prevention and control
6. Follow good animal production health and hygiene practices
7. Reduce the need for antimicrobials through preventive measures such as vaccination.

What is FAO doing about AMR?

FAO has supported Kenya through Fleming Fund (Department of Health, United Kingdom) in the development of two important documents viz: the AMR Policy and the National Action Plan (NAP) (see below). Whereas the Policy provides the legal framework for action, the NAP aims to provide a coherent and systematic framework and priority actions to contain the emergence and spread of AMR. A study to map the veterinary medicines supply chain, challenges and barriers to compliance has been initiated in collaboration with the DVS following which a systematic surveillance approach for AMR will be implemented.



Antimicrobial sensitivity testing in a petri dish.

By the Late Dr Kenneth Wameyo

What it is like to treat sick animals in the face of a mounting antibiotic crisis

They say you should never work with children or animals, and when it comes to medicine, the challenges are certainly very similar. Like babies, animals cannot tell you they're sick – you normally have to infer it from a loss of appetite or a change in behaviour.

But while paediatricians diagnose and treat just one species, veterinarians take care of any number of creatures – all with different needs and conditions. And this also varies between regions with different diseases prevalent in different parts of the world.

In places like Kenya, where I work, antibiotics have been crucial in managing a whole range of animal illnesses. Since the cause of disease in animals - from chickens to cattle and swine - is often bacterial, we simply could not manage without them.

If it were not for antibiotics, our flocks would be quickly wiped out from any of the otherwise fatal infections, causing devastating losses to the estimated 800 million smallholders in developing countries who rely on livestock production for their incomes.

The latest guidelines from the World Health Organization (WHO) warn against using antibiotics for growth promotion in animals to preserve critical drugs for human treatment.

But Kenyan farmers do not routinely use antibiotics in this way, not least because they can be too expensive or difficult to access. Rather, they use antibiotics in the hope of keeping away disease. This is why when it comes to caring for animals in the face of growing levels of drug resistance and superbugs, we must look to the reason animals fall sick in the first place.

One of the biggest challenges, especially when it comes to the kind of small-scale farming we have across sub-Saharan Africa, is hygiene. For example, we often find chickens are raised outdoors and in close proximity, which means they are more susceptible to diseases from wild birds that then quickly spread throughout the farm.

Farmers also find it difficult to keep their yards and coops constantly clean. Because of this, many see the solution in adding antibiotics to chicken feed before they get sick to stave off disease. However, if we could improve hygiene in smallholder farms, we could slash our antibiotic use because the animals would be in better general health.

One opportunity to do this is by making the case for investing in vaccinations. Farmers, especially in developing countries, are often reluctant to spend money on vaccinations to solve a health problem that has not yet occurred. But if we help them to properly understand the long-term benefits, it will not only save drugs for those who really need them but also the lives at risk from drug-resistant disease as well.

This is an example of how the entry and spread of disease can be controlled through good biosecurity practices in the first instance, leaving antibiotics as a secondary resort as needed.

Another example is through encouraging farmers and livestock producers to properly follow regulations that set out how long to wait after treatment before using an animal for food produce.

ANTI-MICROBIAL RESISTANCE

This is known as the withdrawal period and is designed to ensure antibiotics have been properly absorbed by the animal before they are used for meat, milk or eggs. This time buffer reduces the risk of produce contaminated with antibiotics being eaten by humans, which might contribute to increasing levels of resistance.

Finally, we also see farmers using the same antibiotic in different formulations to treat the same complaint. We must do more to support them to use the right treatment for their animals and avoid giving duplicate doses by improving diagnostic tests. After all, this wastes not only precious drugs but also money they cannot afford.

By taking samples, sending them to the lab and properly diagnosing the problem, we can know what organism we're dealing with and treat it appropriately. So, what we are trying to do in Kenya is to raise awareness among veterinarians and farmers not only about responsible antibiotic use but also about the ways in which they can improve

the health and wellbeing of their animals to avoid disease as much as possible.

Through conferences and educational material, we keep relaying the messages to veterinarians and to farmers about how best to manage antibiotic use, and the better alternatives on offer.

Achieving this understanding is essential because we cannot risk facing a ban on these vital drugs otherwise. Antibiotics remain a life-saving treatment for humans and animals alike, and our work as veterinarians would be futile without them.

Editor's Note:

This article by the late Dr Kenneth Wameyo is reproduced in memory of him. When he wrote this piece, Dr Wameyo was serving as the Honorary Secretary of the Kenya Veterinary Association (KVA).

The piece had been published by Reuters.



Cattle graze in a field: AMR can be deadly for such a herd.

AMR: Everyone's business

By Dr Sakwa Kamama
Email: Sakwakamama@gmail.com
Phone no. +254 701 007 479

A short while ago we received a call from farmer who owns 3000 pigs complaining about bloody urine from his pigs. As usual more history was required to make a proper diagnosis. The farmer did not have further information but was kind enough to connect us to his farm manager.

Detailed information from the farm manger indicated the animals were having urinal tract infection spread by one boar in the herd. True to what we were taught, history can never be complete without the question of any previous occurrence, treatments and response to the medication given. The farm manager was excited to answer this question with confidence as if to say "you know doc I can also treat these things".

"We have been treating these pigs using the white antibiotic although every time it's done, the blood in urine and mucoid discharge stops for 2-3 weeks before it reoccurs again," He said. We later established that the white antibiotic described was amoxicillin. We advised the farm manager on proper management insisting on a paravet or a veterinarian to administer the drugs.

From the responses given by the manager there were many gaps we identified including inappropriate use of antibiotics, ease of access to antibiotics especially for animal use and little knowledge of antimicrobial resistance. The results of these factors is well known to us who are lucky to be in health sector (human and animal) That is why there are so many workshops on antimicrobial resistance. The irony of this matter is the exclusion of the general public who are critical stakeholders in curbing antimicrobial resistance.

I believe antimicrobial resistance is a critical subject and a great threat to the future generations and

is therefore a responsibility of every member of the society; young or old, educated or uneducated, rich or poor to take a position in protecting the generations to come. This can be achieved by moving out of our circles as those in health related professionals to have an honest discussion with every member of the society valuing their contribution and role in stopping antimicrobial resistance.

One such population that is neglected is that of students right from the primary school to tertiary institution. As one of the Holy books says, 'teach a child in the way they should go, and when they grow old they shall not depart from it.'

This population is known to produce great ambassadors to change in a society for two reasons: they are eager to learn and exercise what they are taught as well as the ability to carry information for long. Introduction of the correct and appropriate information to a population at an early age modifies the attitude and practices towards the same which in return helps in curbing antimicrobial resistance. This can easily be done through inclusion of antimicrobial resistance subject in the curriculum from primary to the higher learning institutions.

Today we may be having very few individuals in the society with this information working day and night to ensure reduction in the rate of antimicrobial resistance development. But once everyone in the society understands their role in combating antimicrobial resistance, we will be able to address it fully.

The strength of a chain lies at its weakest link. Therefore addressing antimicrobial resistance fully will have to start with an all inclusive and informed society as it is known that information is power.

Animal euthanasia

By *Dr. Isaiah Nchagwa Chacha*
cnchagwa@gmail.com

What is euthanasia?

Animals just like humans get terminal sickness or conditions that are incurable yet they cause so much pain and suffering. They may also be born with or develop conditions that will make their lives so difficult leading to distress and suffering.

Some other domestic animals like dogs may be too aggressive that they cannot be handled even by their owners, causing attacks and injuries to humans, other animals and properties. These are some of the reasons that leads us to making hard decisions of making animals to go to sleep permanently, a procedure called euthanasia.

Sweet death

Euthanasia is a scientific term derived from two Greek words, 'eu' meaning 'well' or 'sweet' and 'thanatos', meaning 'death'. Therefore, etymologically, euthanasia means 'sweet death'. It is the intentional process of ending the life of an animal to relieve it from pain and suffering. It is also called 'mercy killing' or known by euphemisms such as 'putting an animal to sleep', 'putting an animal down' or 'resting an animal'.

In this article, more reference is made to pets especially dogs and cats in the Kenyan context although other animal cases may generally apply.

Reasons for euthanasia

Reasons that may lead to making the hard decision of euthanasia include:

- i. An incurable illnesses that cause pain and suffering to an animal. These could be diseases like cancer, major organ failure e.g. kidney, liver or pancreas which have been diagnostically confirmed.
- ii. Conditions that cause suffering and reduced quality of life. These could be congenital disorders like heart conditions, accidents that may lead to an

animal not fending for itself, exposing it to danger and the owner may not afford or offer alternative aid. For instance bilateral blindness or where more than one limb is severely damaged.

iii. Old age may be another reason for considering euthanasia. Old age can cause animals to lose major body functions yet stay alive for a long time. This lowers their quality of life and therefore putting them down helps to alleviate the suffering they may be going through.

iv. Undesired animal behaviors such as extreme aggression in dogs that have previously mauled and caused grievous bodily harm to humans and animals may be rested to protect humans and other animals' health.

v. Coup de grace whereby a quick decision is made and action taken to put an animal down when it is perceived that it will not survive e.g. in cases of a fatal accident like massive head injury.

Methods of euthanasia

Whichever method of euthanasia used, bio-ethically it must ensure that the animal dies or first achieves unconsciousness within the shortest time possible (usually within 30 seconds), with minimum or nil pain, no struggling, without mutilating its physical body and safety to humans, animals and the environment.

The methods can be physical e.g. shooting or chemical e.g. intravenous injection.

The most commonly practiced method worldwide and in Kenya is the chemical method which is only one done by licensed practicing veterinarians. This is preferred because it perfectly meets all the characteristics described above more so; it does not mutilate the animal's body and it is safe.

The specific medicine used to euthanize animals is strictly handled by licensed veterinarians who must

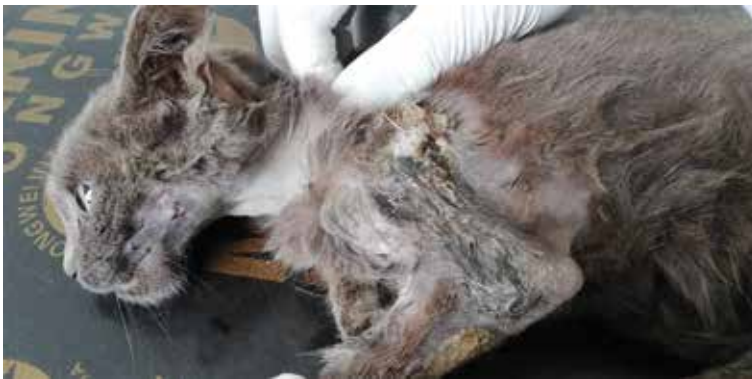
1



2



3



Images No 1 - 4 show the progression of the euthanasia process.

4



keep it under lock and key to prevent exposure to un-intended use or unauthorized persons. In pets for example an injection (mostly intravenous but also intra-peritoneum, intra-cardiac) is given and the animal dies within about 30 seconds. For un-cooperative animals, an anesthesia can be given to restrain, avoiding struggling and anxiety.

Consultation

Before a decision is made on euthanasia, there should be wide consultation by considering perspectives from different persons especially where a pet e.g. a family dog is involved:

i. The veterinarians' opinion

The vet will be the most critical person to consult. He/she will advise on the situation at hand. Once the vet recommends euthanasia, he/she should be able to explain the procedure and advice on other options if available and give the owners a chance to decide the most appropriate in the prevailing scenario.

ii. The owner's opinion

The immediate owner should be given a chance to express their views on the prescribed euthanasia. By this time, the owner should have observed the dog's expression of pain, suffering and distress due to illness or infirmity. The owner's views carry the

most weight in the decision to be made concerning euthanasia and mostly what the owner says happens.

iii. Family and friends' opinion

It is very crucial to inform family members, friends and everybody else who knew the dog about the decision to euthanize. Members who may be far from home for instance in other countries for studies or work who knew and cared for the dog should be informed and allowed to give opinions.

iv. Prevailing beliefs

Some beliefs prohibit euthanasia with the argument that death should happen without intentional involvement. These beliefs include religion, tradition, culture, individual personal belief or moral beliefs. Sometimes the environment where the person lives may influence the decision for or against euthanasia e.g. prevailing laws of the land. These should also be factored in when making a decision.

After euthanasia, the carcass should be appropriately disposed to avert danger to the environment and animals since the chemical used is lethal even within the carcass. The best mode of disposal is incineration or burial in a deep hole whereby scavengers like birds cannot access the cadavre.

AF HUMOUR

A man's girlfriend went to Europe for 5 days with some girlfriends.

She asked her boyfriend to watch her cat while she was gone. The first day she was gone, the cat was hit by a car and was killed. That first day, she called and asked how her cat was doing. He didn't want to ruin her vacation so he said the cat was fine.

The second day she called and he said the same thing. The third day, the same.

When she finally returned she wanted to see her cat. Her boyfriend said that, sadly, her cat was dead. She went into a deep state of sadness.

"Why didn't you just tell me?!" He said he didn't want to ruin her vacation. She said that he could have told her gently overtime. He asked what that meant. She said, "the first day you could have said that she was on the roof and we couldn't get her down. The second day we got her down but she was injured but the veterinarian said she would be fine. The third day you could have said that the cat was suffering worse than they thought. Etc, etc."

It would have been lies but at least it would have cushioned the blow. Her boyfriend apologized and she said it was okay because he was only doing the right thing. So she asked how her mother was doing in the retirement home. He thought for a second and said, "She's on the roof and we can't get her down."

Source: Jokes4us.com

ONE HEALTH – THE SUPERIOR AND EFFECTIVE APPROACH TO ANIMAL AND HUMAN DISEASE MANAGEMENT

By Dr. Sakwa Kamama

A few months ago, I started internship at a mixed practice veterinary clinic in Nairobi. The journey has been very exciting with different mysteries and challenges unfolding each day as I exercise “power to read and do all that appertains to my degree.”

As a veterinary clinician, I am trained to make correct diagnosis, treat and prevent future occurrence of diseases. During these processes, one of the major contributors of making a correct diagnosis is obtaining correct and detailed history. In fact, it is said that a good history can give you up to 80% of a given diagnosis. It also helps in identifying gaps present that predispose the patient to a diagnosed condition which in turn helps in the identification of the disease and strategies on preventive measures.

A shortwhile ago a young couple visited the clinic with their cat Snowy, recently adopted, and by their confession, the cat had been friendly and exciting to them. The couple complained that the cat had experienced general weakness and lethargy in recent days. As usual we took a detailed history, detailed physical examination, took a blood smear for microscopy and blood for haemogram.

The cat was diagnosed with haemobartonella (*Mycoplasma haemofelis*) and given full treatment. The remaining part was discussion on prevention of future occurrence of the disease. We discussed and agreed on best practices to control the parasites including effective methods of vector (ticks and flies) control. During this time, I noticed the lady was pregnant and I had to ask whether she was

responsible for changing the cat’s litter and cleaning the cat’s utensils. Sure enough she responded in the affirmative. Upon this confession I enquired whether the couple was aware of any risks the unborn baby was getting exposed to as far as the cat litter was concerned. They said they didn’t know.

My concern was *Toxoplasma gondii*, a protozoan parasite that infects most warm blooded animals, including humans. Its definitive host is the domestic cat and its wild relatives in the felidae family. *Toxoplasma* is known to cause illness in humans especially those that are immunocompromised. Transmission to humans occurs in different modes including foodborne (consumption of contaminated food), uncooked/undercooked meat, unwashed produce and congenital intrauterine transmission.

In all these modes of transmission, cats play a major role in spreading the disease as they get infected thorough eating infected rodents, birds and other small animals then pass parasite stages called unsporulated oocysts in the faeces to the environment; where the oocysts become infective through a process called sporulation.

In reference to the above case, the mother is already immune-naïve due to the stress caused by the pregnancy. Handling of the cat’s litter increases the risk of infection to the mother and transplacental spread of trachezoites (infective material) to the unborn baby should the cat become infected during the pregnancy period. This would result in abortion, still birth or a baby born with congenital abnormalities including: abnormally large head,

mental disability and retardation (psychomotor deficiencies) and ocular diseases (chorioretinitis) which may lead to loss of vision. Other effects include myocarditis which has been documented to occur in young adulthood.

I am happy we had a long discussion with the couple and made agreements including that the man would be responsible for handling of the cat's litter until the child is born and at least six months of age among other precautionary measures to lower the risk of the mother's exposure to this parasite. After the discussion the couple were happy that they visited the clinic together and thankful to have gained a lot of information that they did not have.

They waved good bye as they entered their car. I smiled back with a wave but with lots of questions going through my mind. I wondered how many more ladies are being exposed or placed at a higher risk of getting infected by such zoonotic diseases? How many children are born with congenital defects due to such risks? How about those that never get a chance to visit veterinarians in the entire pregnancy period but expose their unborn babies to the risks and other zoonotic diseases? How about antenatal clinics, are the mothers informed on risks of zoonoses?

The couple may never have attended any human or animal health related school but they have a critical role in protecting their health and that of their unborn child. . This was a clear case of how One health approach to health plays a critical role towards achieving universal health through involvement of every member of the society and veterinarians understanding their role in safeguarding human health. The One health approach remains the best approach in controlling diseases in both animals and humans. It is an important appendage to achieving universal health care in our country and globally by involving different stakeholders, health careers and the public. Every stakeholder must understand their role in achieving a healthy and wholesome society. This is the superior value of the one health approach over any other approach to health, which cannot be underestimated.

AF HUMOUR

Top Ten Reasons Why Dogs Are Better Pets Than Cats

1. Dogs will tilt their heads and try to understand every word you say. Cats will ignore you and take a nap.
2. Cats look silly on a leash.
3. When you come home from work, your dog will be happy and lick your face. Cats will still be mad at you for leaving in the first place.
4. Dogs will give you unconditional love until the day they die. Cats will make you pay for every mistake you've ever made since the day you were born.
5. A dog knows when you're sad. And he'll try to comfort you. Cats don't care how you feel, as long as you remember where the can opener is.
6. Dogs will bring you your slippers. Cats will drop a dead mouse in your slippers.
7. When you take them for a ride, dogs will sit on the seat next to you. Cats have to have their own private basket, or they won't go at all.
8. Dogs will come when you call them. And they'll be happy. Cats will have someone take a message and get back to you.
9. Dogs will play fetch with you all day long. The only thing cats will play with all day long are small rodents or bugs, preferably ones that look like they're in pain.
10. Dogs will wake you up if the house is on fire. Cats will quietly sneak out the back door.

Source: Jokes4us.com

Covid-19 Pandemic and Foods of Animal Origin: The connection

By Dr. Nazaria Nyaga (Veterinarian involved in foods of animal origin value chains)

Joe, a pastoralist beef farmer has traditionally walked his three-year-old Sahiwals to the nearest animal market for sale. This has been his main economic activity over the years. Occasionally some animals presented to the market failed to get a buyer resulting in him walking them back home, a distance of over 10 kilometres. This is after exposing them to all sorts of infections and fatigue stress.

However lately due to Covid-19, the farmer has adopted technology and only sells his cows on order directly from his farm. Additionally, he has instituted a disinfectant foot bath at his gate for all traders visiting to purchase his cattle. While protecting himself and others from Covid-19 by keeping away from crowds, he has also prevented his animals from contracting other infectious diseases that would compromise on the safety of beef. By not walking his animals for long distances, he has improved the quality and ultimately safety of beef from his sahiwals.

Such actions of keeping infections at bay by simply putting disease preventive measures (biosecurity) will go a long way in ensuring the safety of the beef products derived from his animals. Other measures that he has instituted include proper animal nutrition which will result in enhanced immunity and therefore reduced antibiotic use and residues. In so doing his sahiwals will be healthy and will consequently provide safe and better quality beef.

At the local abattoir where Joe's sahiwals are

slaughtered, operations are significantly different. The chaotic scenes that usually characterise the abattoir are a thing of the past. No more crowding, only a few flayers and butchers are allowed in and hand washing and sanitizing is now the modus operandi. The animal market near the abattoir is non-operational and therefore there is no more hawking. By adhering to a strict set of rules and directives, the butchers and flayers have not only reduced the risk of contracting Covid-19 but also reduced chances of contaminating beef and by-products with other food borne infectious agents thus ensuring meat safety.

Licensed meat transporters are usually the ones who ensure that the beef is delivered to various retail outlets. It is important to note that beef, just like many other foods of animal origin such as milk, mutton, pork, has a short keeping time. As transporters keep to designated working timelines and geographical boundaries due to Covid-19 regulations, they are indeed also helping in delivery of fresh food to the consumers thus ensuring safety of those foods.

Because of the timelines for the delivery of meat for example, what materials can transport meat and how far it can be transported is defined in existing laws for purposes of safety, adherence should continue even after the pandemic.

Simple actions like regular hand washing and sanitizing that were often overlooked previously have indeed become a norm courtesy of Covid-19. Retail outlets like butchereries and supermarkets where Joe's animal products end up are now a lot

more conscious of meat handling hygiene, meaning a lot of consumers could be protected from food borne infections which usually occur due to unhygienic handling. Other value chains, for example that of milk, will also benefit from hygienic handling at the point of dispensing. This is more so in informal markets where hygiene has been a challenge.

Considering that the food safety of products such as meat, milk, mutton and so on, is a factor of cumulative controls along the value chain from the farm (producer) to the fork (consumer), it is imperative that hazards of whatever nature must be prevented at all cost with or without a pandemic.

The farmer should ensure that his animals are healthy by adhering to good agricultural practices such as vaccinations, observing biosecurity measures, engaging registered animal health professionals for extension and clinical services as well as providing proper nutrition.

Movement of animals should only be done after certification by government authorities that animals are free from diseases.

Processors and other players in the foods of animal value chains should ensure that they operate within the requisite laws in order to safeguard the safety of the consumer. This is more so because the popular adage, 'Health is Wealth', cannot be over emphasized during and after Covid-19 pandemic.

AF HUMOUR

The Doctor and The Veterinarian

Two lifelong friends, a doctor and a vet, were in a bar. Over the course of a few drinks the topic of conversation moved to work.

"You are lucky," said the vet. "Your patients come in and tell you what is wrong with them. It would make treating them so much simpler." "Ah," retorted the doctor, "But you forget the social pressure and reliance upon which I must do my job. If I make even a small mistake, I could be sued for everything I have."

Neither the Vet nor the doctor wished to concede that they had the easier job. So the vet suggested a challenge. "Next time I am ill I shall come to see you but, as with my patients, I will not say a single word. If you can treat me I shall admit defeat," he said. The doctor agreed and they enjoyed the rest of their night.

Months passed and both men were very busy with work but one day the doctor heard a knock at the door. It was the vet who simply entered and lay on the couch. The doctor was initially confused but soon remembered his late night bet with his friend. The doctor began to do a routine physical exam, looked the vet over, took his temperature, all the usual tests. This went on for a while with the doctor seemingly made no progress. The doctor's frustration was evident on his face. He eventually signaled for the vet to stand up and take his leave. As the vet approached the door, the doctor handed him a prescription for some basic antibiotics and said, "Here take two of these and if you're not better in the morning I'll have you put down."

Source: Jokes4us.com

Six Lessons: What I have learnt about vet medicine since graduation

To the freshly-minted graduates of Veterinary Medicine, your half decade in the pursuit of veterinary medicine has now come to a glorious end. Congratulations! It is now the start of new beginnings, the dawn of a new era. As an orientation into the world of veterinary practice, the following are some guiding lights for you garnered through the school of hard knocks, also known as experience.

1. Leadership, administration and management

Firstly, you will be put into a position of leadership sooner than later. In the Faculty of Veterinary Medicine, your studies have so far centered on the technical disciplines of surgery, anatomy, pharmacology and the rest. Times may have changed, but when I graduated, I was not prepared for tasks in matters management and administration by the course in Veterinary Medicine. Thus, upon landing my first job, I was thrust into the throes of leading a team and managing resources. Then, it was baptism by fire, now I have taken to it like fish to water. Of course this is after forced accelerated on-job learning. This has continued throughout my active professional life. Therefore, be prepared for the administrative, the management and the leadership roles. Handy reading materials in these areas abound both in bookshops and online. Delve deep into them.

2. Graduating does not signal the end of learning

Upon graduating, the temptation may be intense to burn or throw away your books. I quickly learnt this to be an ill-advised notion. I learnt that more

than ever, after graduation, you may and you will require those very books. Further to this, at the graduation square, the Chancellor will grant you the power to read (implying that you have not been reading in your half decade at the university, and before). However, this alludes to the fact that learning is endless. At my first job in clinical practice, seasoned veterinarians with whom I interacted, advised me to review my notes and any other literature at the end of each work day. Of course the purpose of this was to sharpen my clinical case management skill.

I followed the advice generously dished out and it is in my reading that I found out that peacocks in their diet require animal protein! That peacocks in the wild feed on insects, small mammals, amphibians and reptiles. Who would have thought this? It is also in my reading that I discovered that an orphaned creature that had earlier been presented to me for advice on its care was in fact a baby mongoose. I sure wasn't taught how to look after a baby mongoose while at school, but at present I have some expertise. Now of course reading widely and continuously this does not only apply to small animal clinical practice. It applies to all aspects in the practice of veterinary medicine. It is the quintessential reason that the Kenya Veterinary Board expects you to accumulate a specific number of continuous professional development points every year. Simply put, there is no end to learning, and as Michelangelo perfectly put it, "I am still learning."

3. No man is an island

I realized that contemporaries, seniors and juniors

in the field are great information assets as a practitioner in this noble profession. To be a veterinarian worth his or her salt, one must constantly consult and seek the help of the well experienced colleagues. I learnt that decisions that one makes as a veterinarian may occasionally appear as no-brainers, however this is quite an untruth. Your decisions are for all intents and purposes weighty and greatly impactful. In clinical practice, your decision will determine if a patient recovers or otherwise. It will determine if the amount of anesthetic administered will cause your patient to sleep for minutes or for eternity. Y

our signature on a vaccination card signifies that the animal is protected from a particular disease. And depending on the vaccination type, your signature indicates that the animal is not a zoonotic risk and additionally that it may indeed travel nationally or internationally. Similarly, your signature on an animal product export certificate implies that the meat or milk or eggs are safe for human consumption. In short, I learnt that if you are unsure about a decision, consult, consult, consult.

4. You have at least two more degrees to undertake

Fourthly, I observed that continuous formal education is key and fundamental. It is a competitive world outside the precincts of the university. In order to get ahead, furthering your education beyond your first degree will do you well in climbing the ladder of success. From my point of view, it is wise to study the market first before determining what other degree, diploma or certificate to pursue. Making a study of the industry helps you align your interests with the needs of the job market or areas of research.

5. Financial Literacy

A fool and his money are soon parted. You will soon get your first paycheck and this will call for

proper financial planning from that point and henceforth. You need to look after the pennies so that the pounds look after themselves. I was given no lessons on personal finance management during the course of my studies at the Upper Kabete Campus, nor in Chiromo Campus. Luckily since we live in the digital epoch, I was able to scour through uncountable personal finance websites to adequately equip myself. It was through my browsing that I came across practical material such as the 50/30/20 budget rule as postulated by Elizabeth Warren and the 6-month emergency fund rule. In addition to the knowledge I gathered, I also came across freely downloadable personal finance management tools which many years later, I still find extremely relevant. It is said that one should plan their retirement from their first paycheck. Honing your personal financial literacy skills now will help you retire comfortably, or otherwise be parted from your money.

6. Serve

In my humble opinion, charity pays. Charity supports both the giver and the receiver, is what the Swedes inculcate. By my experience, participating in veterinary professional activities even without monetary pay never goes unnoticed. Serving is a medium of forging networks and it is these networks that will push you forward in your career as a veterinarian. By serving do you not only see, but you get seen. By serving you will not only learn, but you will stand out among your peers to potential employers. Secondly voluntary work also counts as experience, which thus goes towards boosting your Curriculum Vitae into a shining mouthpiece for you.

In a nutshell, these are some preparatory notes for your in-mint condition professional life. We wish you a fruitful career going forward, and without a doubt it will be prolific.

AF HUMOUR

I went to the pet shop and asked for 12 bees.
 The clerk counted out 13 bees and handed them over.
 “You’ve given me one too many,” I said.
 “That one is a freebie,” he answered.

Source: Jokes4us.com

A lucky escape: by Dr. Brenda

The call came through in the midafternoon on an exhaustingly busy day. We had just returned to the clinic from a series of ambulatory cases that included castrating a litter of piglets, vaccinating a flock of chicken and de-horning three calves. The man on the other end of the line spoke with a great sense of urgency. “The cow is down on the ground and she is bellowing incessantly...she must be in great pain...can you come quickly?” “Of course we shall come.” I responded. “Was the cow fine in the morning?” I asked to try to get a history of the case. “She was supposed to calve down yesterday, but did not. In the morning, at about 11am she began to bellow and was also very restless.” The farmer, Mr. Mwaura explained. “Yeah that sounds urgent. We shall come right away.” I replied heading for our ambulatory vehicle. “Where do you live? Send me the directions.” I responded signaling that we needed to go to Mutuma my loyal assistant.

Armed with directions to farmer Mwaura’s home, we sped down the road muddy road, turned left into a lane lined with a series of shops, restaurants, ‘mama mbogas’ and a pub named ‘Corner Bar’. Past the ‘Corner bar’ we turned made the first right turn into a gentle dip on a winding road this time lined with shrubs and bushes. We drove by two ‘mabati’ gates leading into homesteads on our left hand-side, and the third gate led to Mwaura’s home. The directions to his house were clear and concise and it had taken Mutuma and I just fifteen minutes. Having stopped at the gate, we hooted our old make ambulatory vehicle. In a matter of seconds through the gaps in the old cedar fencing, we saw Mwaura dart and hastily open the gate ushering

us in. We drove in and parked the vehicle in front of his brown-stone bungalow and immediately jumped out of the car. Mwaura strode towards the car, grabbed and shook my hand heartily, “Asante daktari kwa kuja haraka hivyo.” “It is my job. Yuko wapi huyu ng’ombe mgonjwa?” I responded as we grabbed our wooden ambulatory kit containing the veterinary drugs and items. “This way.” He said leading us to the ‘boma’ where the cow lay. We set our kit on the ground and I proceeded to glove in preparation to conduct a general physical examination on the bovine. The examination did not yield much, except for labored breathing.

After the general exam, I focused my attentions on examining the reproductive system as per standard procedure. With a gloved lubricated hand, I examined the reproductive tract of the animal per rectum, through the rectum, to assess the position of the uterus and fetal calf. It revealed a live calf who was stuck beyond the pelvic girdle of her mother. The calf appeared oversize, meaning that it was too large to be born naturally. This thus called for a caesarian section to deliver the calf. To do so we had to move with speed. “We have to open her surgically to deliver the calf.” I explained to Mwaura.” Mwaura appeared taken aback, “Must you do a surgical operation?” “In order to save cow and calf, that is the only way in which to proceed.” I expounded. He took a deep sigh and paused as he considered the matter. After a few long minutes he spoke giving consent, “I bought this cow for a hefty price, she is a fine milker and I would not want to loose her. So, if that’s the only way to save both, you may go ahead.”

surgical procedure while I prepared our patient for surgery. Ten minutes later we were in the abdominal cavity through a large incision on the left abdominal wall of the bovine. Carefully we incised the uterus to get to the calf, who lucky for us was still alive. “Mutuma, hand me the surgical chains.” I instructed. “I think we are now ready to deliver the calf.” I placed the surgical chains around the calf’s front limbs and Mutuma gently pulled it out, delivering it. “Lay her next to her mother’s head,” I told Mutuma. Instantaneously mother cow began to lick and nuzzle her calf, as if in joy and relief. The calf appeared to greatly appreciate the new found attention from her mother. Happy that cow and calf were in good health and spirits, we closed up the surgical site satisfied that the procedure was a success.

Having cleaned up the ‘theatre’, we called in Mwaura to see his new addition to the herd. “Kuja umwone ndama wako mgeni,” I quipped pointing to the calf. He could not contain his joy. “Thank you very much!” He exclaimed. “We have administered some antibiotics and also some pain medication.” I informed him as we packed ready to leave. “Keep an eye on both, especially the cow, and if anything, call me immediately, although I shall come by tomorrow morning to review them.” I added. “Thank you so very much.” He repeated as he escorted us to the ambulatory vehicle.

The butterfly effect of a vet

Ever wondered what the society today as we know it would be if vets did put down their tools for a day, a week or a month? Imagine if you didn’t pick up that call to attend to a client, you didn’t inform an animal keeper of good welfare practices, you didn’t wake up and go to that office, clinic, school, agro vet, slaughter house or whichever other place you disseminate your roles as a veterinarian at?

What would cascade down or go up? How many people would lose their jobs? What would be the health implications? Would there be meat in the butcheries? Would creameries continue processing milk? Definitely these and myriad other things would absolutely go wrong.

According to the chaos theory, the butterfly effect is the phenomenon whereby a minute localized change in a complex system can have large effects elsewhere. Veterinarians hold and pull strings in a complex society interweb that keeps it harmoniously functional and running.

But we veterinarians are likened mainly to pediatricians in that we treat animals that do not communicate in a human comprehensible speech. Even if others don’t understand our language with animals they do understand us and we do understand them. by some magic wand or so it seems to an observer, we do our jobs to keep this noble society at peace, healthy and progressive.

Would the Big 4 Agenda be achieved without vets?

Kudos to all the vets who never tire in serving the beautiful creatures and prevent the world from getting into chaos. Most importantly by you and me discharging our respective duties we are helping this current government achieve the Big 4 Agenda pillars because our roles cut across all the four pillars.

By DR K. Mwangi.

Role of animal resources in the big 4 agenda

By Moreno Kitesho, Animal Health Officer

The big four agenda: food security, affordable housing, manufacturing and affordable healthcare remain the blueprint for development by Kenya's president.

In Kenya, which is a developing country, the livestock sector contributes up to 45% of the agriculture and forestry sector which is by far Kenya's most important economic sector to the nation's domestic production (GDP). Mainly, animals occupy arid and semi-arid areas where crop farming is a challenge due to unstable rains leading to short terms of drought.

One-third of Kenya's population occupies the arid and semi-arid regions and thus depend largely on animal resources as a means of life. Livestock and wildlife animals play an important role in the economic and social life aspects of the communities in these regions as a source of: food (milk, meat, milk, eggs); labour; prestige and income among others. Trading the primary resources provides secondary resources mainly money that contributes to the food security, housing and health of the community as well as the nation.

Presently, animal products have promoted availability, accessibility, utilisation and stability of food in Kenya. Animal products are the main components of food security of 1.3 billion people as estimated by the nutrition and dietetics board.

According to the Food and Agriculture Organization (FAO), animal resources contribute up to 60% of the diet protein in the world. This of course includes Kenya. With increasing population yearly, there is a need of having a stable source of food availability for all.

As shown by the Kenya National Bureau of Statistics, the animal population is a promising

source of food and stable income for the Kenya.

Since animal product consumption increases with income, the projected 2050 consumption implies that animal products will increase up to 150%.

Apart from being used as a primary source of food, animal resources are raw material for industries. Food processing industries dealing with products: ghee, butter, yoghurt, catering; textile among others depend heavily on one or more than one animal resources.

Animal resources contribute to the establishment of animal research centres (e.g. ILRI, animal resource genetic centres, hay/fodder production units, animal food processing), veterinary pharmaceutical productions, wildlife and tourism sectors among others.

Employment in these sectors serves as a source of income to millions of Kenyans and residents enabling accessibility to affordable housing, health and food.

Animal resources are among the major development asset in the country contributing largely to food security, manufacturing, affordable housing and affordable health. As a means to food security, animal products have ensured stable, accessible and utilisable food product. In the manufacturing sectors animal resources provide raw materials.

Employment under these sectors has served as a source of stable income to millions enabling many to access houses with efficient facilities to sustain life (water, power, roads and well drainage systems) at an affordable price, health insurance cover and access health care services. Animal resources contribute largely to Kenya's 4 big agendas.

Brooke EA supports communities in preserving their donkeys

With the licencing of three legal donkey slaughter houses and two more under way, donkeys in Kenya are experiencing a rapid decrease in numbers unlike any other time recorded in history. Reports collated by the Brooke East Africa office through her partners show that as at end of November the number of donkey theft cases reached 2,159 up from 1,000 in January 2017. Some of these animals have been identified by owners at the slaughter houses but many of the stolen ones are cruelly killed, skinned and their carcasses strewn in the bushes.

With support from UK, The Linda Punda Ushinde initiative was an innovative approach that Brooke East Africa come up with to generate locally viable and sustainable solutions/ideas to address donkey theft through a competition. The competition was launched on 17th May 2017 during the National Donkey Day in five counties namely Kiambu, Nyandarua, Nakuru, Narok and Kajiado, with a total of 221 Donkey Welfare groups working directly with BEA partners in these areas invited to compete.

Applications were reviewed by an adjudication panel using a scoring matrix developed. Each county had a panel whose terms were to review, select and award the winning solutions proposed by the Donkey welfare groups. The general composition of the panels included; County Community Development Social Service Officer, County Director of Veterinary Services, County Commissioner, Partner Organizations Representatives and a representative from BEA.

A two stage process was adopted in the selection of the winning ideas. The first stage, involved scoring the ideas by use application forms. From this initial stage, five (5) groups in each county with the highest average, proceeded to the second stage - the

Interaction stage.

At the Interaction Stage, the five groups had one on one audience with the adjudication panel to defend and articulate their ideas. This enabled the panel to have a feel of authenticity of the group and the idea, the ownership of the idea and additional details that the group could have left out or missed during the application writing.

The winning ideas included a variety of creative ideas with a majority of them focusing on the building of donkey shelters. Many groups opted for the construction of shelters using locally available material like used iron sheets, that would not harm the donkeys and locally available timber, tree branches and sticks. Their plan was to have these shelters lockable therefore limiting the access thieves would have on their precious donkeys. A number of owners through sensitisation have also started locking their donkeys with the rest of their livestock together at night.

Some of the other groups came up with identification process like ear tags. One group that KVA works with in the Brooke supported donkey welfare project in Kajiado Mashuuru area opted for neck bells around the donkey to alert the owners of unplanned for movement especially at night.

These ideas are on their implementation stages and Brooke East Africa has been observing their success rates and noting the lessons. After the implementation stage, there will be a comprehensive analysis done to gauge any difference if at all in the number of donkeys that have been protected from theft and illegal slaughter.



A donkey sanctuary.

Moving towards better tethering practices for donkeys

By Dr Janet Muthusi KVA

Tying ropes around a donkey's fore limbs (tethering) is a practice used by donkey owners and users to control and restrain them. Additionally it is done to prevent them from roaming into insecure areas, trespassing to other people's property and from any other potentially risky situations. However, many owners and users do not have sufficient information on how to appropriately tether their donkeys without causing pain or injury.

Donkey owners use nylon ropes to tether their donkeys as they consider them to be strong and more durable. This causes wounds on the animal as the nylon ropes are made of coarse material which is tied too tight. To address this problem, the Kenya Veterinary Association has developed an alternative to tethering using nylon ropes in order to reduce the intensity and occurrence of wounds on donkeys.

The alternative technique involves a wide manila rope which is cut into portions and then each rope is carefully and permanently fitted manually around one fore limb using a strong thread and needle. The rope is checked to ensure that it is not too tight or too loose by fitting fingers between the rope and the donkey's limb. A small loop is left to pass the nylon ropes without causing any injury to the donkeys' limb.

As more donkey owners and users are trained on how to use this technique, it is expected that this will reduce the occurrence of wounds caused by inappropriate tethering methods.

Brooke EA continues to work with the Kenya Veterinary Association to train donkey owners and users on the best methods to reduce the harm caused by wrong tethering practices. We are piloting the innovation in three areas: Kiserian, Kadisi in Kajiado North and Kitengela in Kajiado East. We will target 20 donkeys per area which translates to 60 donkeys. The total number of owners will be 60 or less.

GETTING STARTED

with

BEEF & DAIRY Cattle

HEATHER SMITH THOMAS



VET READS

Title: Getting Started with Beef and Dairy Cattle

Edition: 22nd

Publisher: Storey Publishing

Author: Heather Smith Thomas

No of pages: 288

Year of publication: 2005

The book is in one colour on uncoated paper.

Getting Started with Beef and Dairy Cattle is a very informative book that should be on every vet's and animal production professional's desk.

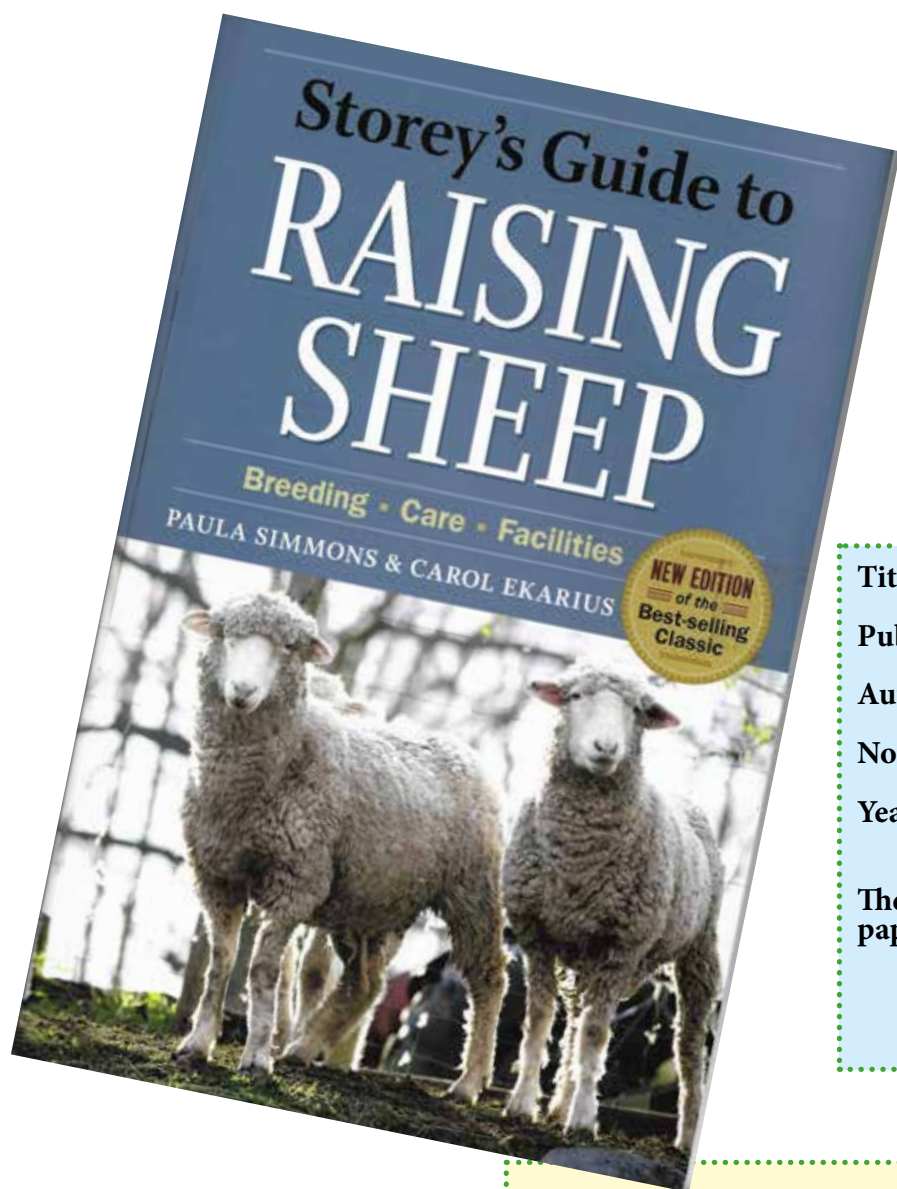
The Book sets out to cover the fundamentals required in order to raise beef and dairy cattle. Topics include:

- Nutrition
- Maintaining Healthy cattle
- Choosing a beef herd
- Selecting and transporting cattle
- Care and handling of beef cattle
- Natural, organic and grass-fed beef
- Raising beef heifers
- Breeding and calving the beef heifer
- Beef herd management

- Selecting dairy cattle
- Care of the dairy heifer
- Breeding and calving the dairy heifer
- Care of the dairy cow
- A dairy of your own
- Gallery of breeds
- Bibliography
- Helpful sources
- Glossary

Getting Started with Beef and Dairy Cattle is written in an easy and accessible style, with only the most minimum of technical jargon. It has useful illustrations and lots of tips which are clearly highlighted for the reader. The book is just slightly larger than an A5 size and is quite handy to carry around the farm for quick reference.

This is a must have reference. It is available from Bookstop Yaya.



Title: Storey's Guide to Raising Sheep

Publisher: Storey Publishing

Authors: Paula Simmons & Carol Ekarius

No of pages: 448

Year of publication: 2009

The book is in one colour on uncoated paper.

In the true tradition of Storey Books, this title is easy to read, practical and gives a common sense approach to rearing sheep. However, this does not mean it is lax on the science. It is sound and very quotable at any level. The topics in the title include:

1. Starting with sheep
2. Breeding and breeds
3. Pasture, fences and facilities
4. Herding dogs
5. Predators and protection
6. Feeds and feeding
7. General health considerations
8. Problems of rams, ewes and lambs
9. Flock management
10. Lambing
11. Products and marketing
12. Showing sheep
13. Records and animal identification
14. Feed requirements for sheep
15. National animal identification system

How to rediscover the real you

Have you ever found yourself struggling to be part of a crowd you did not even really want to be with?

In today's image-based, status-quo society, it is easy to compromise who you truly are for counterfeits that promise happiness but deliver emptiness. In fact, you can get so immersed in trying to "keep up with the Jones," be what your parents have always wanted you to be or take on the personality of "so and so," that you lose the essence of who you really are and what you really want.

All of life then becomes a constant treadmill of never measuring up, yet diligently running in earnest to get to some illusive point of acceptance. Only when you arrive at your desired destination do you realize that what you have so passionately and single-heartedly pursued for so long has failed you in providing the happiness, fulfillment, and life you thought it would give you. The only result it yields is confusion, frustration and a complicated existence. But life was never meant to be that way.

*How to re-discover the real you
Chinese thinker and social philosopher, Confucius, said "Life is really simple, but we insist on making it complicated." How true that is.*

You complicate your life by taking the childlike simplicity of knowing who you really are and doing what you really love, and replace it with something as shallow as trying to "fit-in." Yet, the happiness, fulfillment, and peace you crave can only be found in expressing your uniqueness.

*But how do you do that? How do you break free from your "need" for acceptance and stand up for what you truly believe? How do you express your uniqueness and get happy with just being yourself?
The answer lies in clarifying two important questions.*

First, it is important that you know who you really are. What is it that makes you unique? What do you value? Who are you...really? The best way to identify this for yourself is to make a list of core values.

Define your core values

Core values are also often referred to as governing principles. These are the personal principles you truly want to live by. When you adhere to and apply these principles they will yield the most fulfilling fruit from your labour.

The reason it is important to have a list of core values is because your emotions fluctuate from day to day, situations arise, and stuff happens and all too often, what you value most fluctuates along with whatever is going on around you. This is ultimately what leads to an unfulfilled life. Staying true to your core values, despite your outer circumstances is ultimately what will keep you on track to being who you truly are.

Define who matters most

The 2nd important question you need to ask yourself is who do you really want to spend time with. If there is a certain "group" of people you want to be with, identify that group.

You can spend your entire life trying to gain the approval of people you don't even like. In fact, you can get so busy trying to please "them" that you entirely forget that at your core, you could care less about pleasing "them." So, you have to ask yourself, who is it that you really want to spend time with.

Maybe it is your family. Maybe it is people that are positive instead of negative. Maybe it is people that inspire and motivate you to be better rather than those that bring you down. Who is it? Identify them.

When you have answered this question for yourself and live it, you respect who you really are enough to not be ruled by "them." Instead, you take control and shape your lives in relation to your core values. By taking this initiative, you ensure your own success and you claim responsibility for your own happiness.

© Barb Elyett. Barb Elyett is a Canadian singer/song-writer, recording artist, speaker, author and founder of Aleta Records.



...Improving the livelihoods of Kenyans

JOIN THE KENYA VETERINARY SACCO TODAY

REQUIREMENTS TO JOIN THE SACCO

- Members of the veterinary professions (veterinary doctors and veterinary paraprofessionals)
- 18 years and above.
- In good character & of sound mind.

FEEES

- Registration fee of KES 500/=
- Minimum Monthly share contribution of KES 1000/= by members.

BENEFITS TO MEMBERS

- Negotiated investment opportunities.
- Attractive Loan facility at an interest rate of 1% pm.
- Loan Facility at 4 times the share contribution.
- Savings through shares contribution.
- Payment of attractive dividends on your deposits.



PAYMENT DETAILS

Option 1: Mpesa

Go to Mpesa Paybill
Enter business No. - 400200
Under Account enter 01120501809500
Cooperative bank Ltd.
Send the confirmation message to
KVA at 0727 680 022

Option 2: Direct Deposit

Account number - 01120501809500
Account name - Kenya veterinary Sacco
Bank - Coop Bank of Kenya

Option 3: Mpesa

Pay bill number -776239
Account - Enter your names
Send the confirmation message to
KVA at 0727 680022

For more details: Call the KVA office - 0727 680 022
Or Email: info@kenyavetassociation.com

DONKEYS MATTER



**THE DONKEY
SANCTUARY**

Donkey Welfare Means Resilience

During times of drought, caring for donkeys strengthens the vital link to water, food, firewood, fertiliser, grain and market goods.

Even cattle rely on resilient donkeys to deliver their food and water.

OUR VISION

A world where donkeys and mules live free from suffering, and their contribution to humanity is fully valued.

+44 (0)1395 578222

www.thedonkeysanctuary.org | Sidmouth, Devon

A charity registered with the Charity Commission for England and Wales No. 264818

WORKING WORLDWIDE