

# Animal *focus*

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IMPROVING THE LIVELIHOODS OF KENYANS



## **FOCUS ON PIGS**

*\*Pig Products*

*\*Market for Pig Products*

*\*Baconmania & More...*

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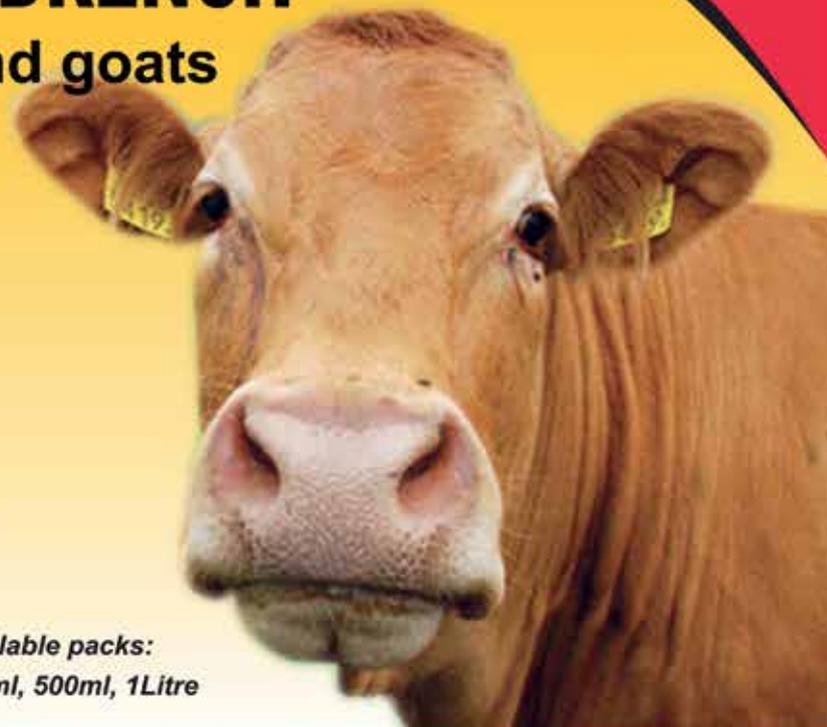
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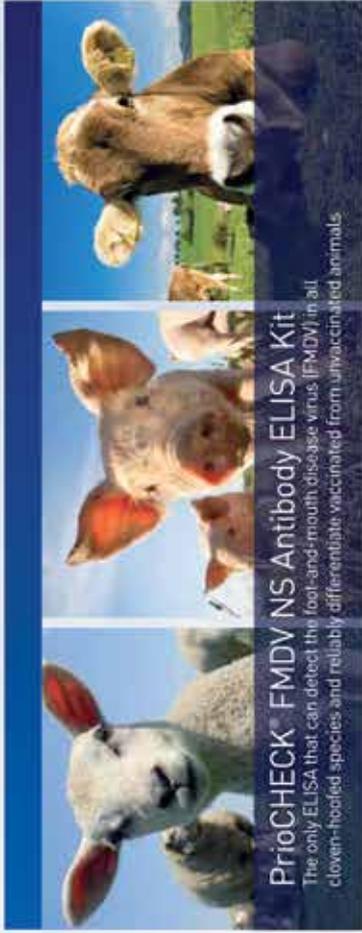


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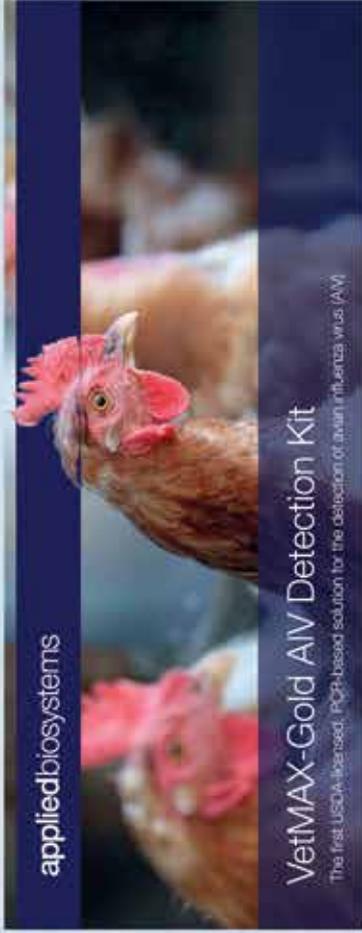
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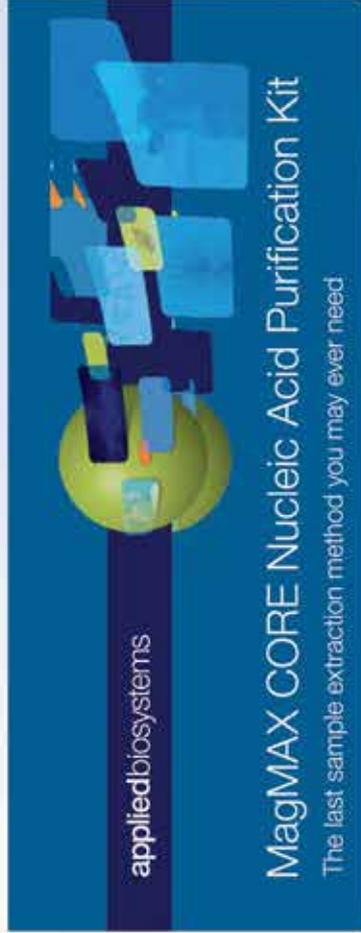
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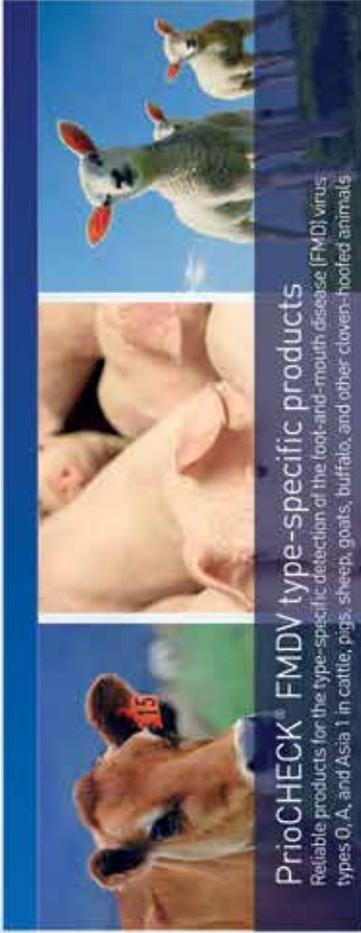
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## WHAT DO YOU WANT TO BE WHEN YOU GROW UP?



Every year, the release of Form 4 examination results is a ritual that has become all too familiar. Senior education officials read out the results and then there is a frenzy of celebrations by well performing schools, teachers and parents of top achievers, and a motley of stakeholders. The media go around the country interviewing the top students.

“How does it feel to be on top of the world?” they ask the top performers. Breathless girls and boys, no doubt after being carried around by ululating teachers and parents are likely to answer, “it feels great .... I would like to thank God, my teachers and my parents for all their support etc.”

Then you can be sure of the next two queries because it happens every year: “How did you do it?” and after that, “what would you like to become?”

That last question has always intrigued me. The usual responses are: A doctor, a neurosurgeon, a lawyer, an engineer or an actuarial scientist. I have never heard any of those candidates, over many years, say they want to be a veterinary surgeon.

So why is it that none of the top students in our country want to study veterinary medicine? Is there a problem with the course or are the prospects of veterinary practice so unappealing that it is left for the ‘less-than-the best’ students? This is food for thought for the vet intelligentsia.

These thoughts were brought very close to home last year when my daughter had to fill in her university course choices. We went over to her school for the exercise. Her preferred career was law, but in case things did not go her way, what did she want to do? “Veterinary medicine,” she told me and her class teacher as she filled in the choice. So her list read: Law, veterinary medicine, economics and French.

I was elated that my daughter wanted to become a vet, even if it was only her second choice, and follow in my footsteps. Then I remembered how tortuous my veterinary path had been and had some fatherly panic. “Are you sure about vet?” I asked her. “Yeah,” she answered casually.

The day ended and I left her school wondering if five years of a tough course like veterinary medicine should be entered into as casually as my girl was taking it. I shouldn't have worried. When degree choice changes were announced, out went veterinary medicine and in came mathematics. What?! Memories of my ‘A’ level calculus terror long hidden flashed through my mind. Now I was sad my vet had been thrown out, but somewhere in there I thought .... phew. That's over then. Now I am waiting to see what happens with the mathematics.

*Simon.*

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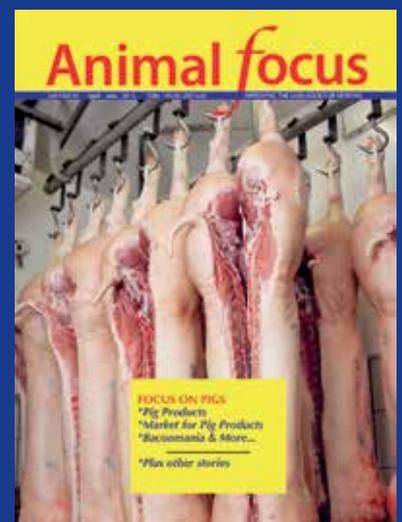
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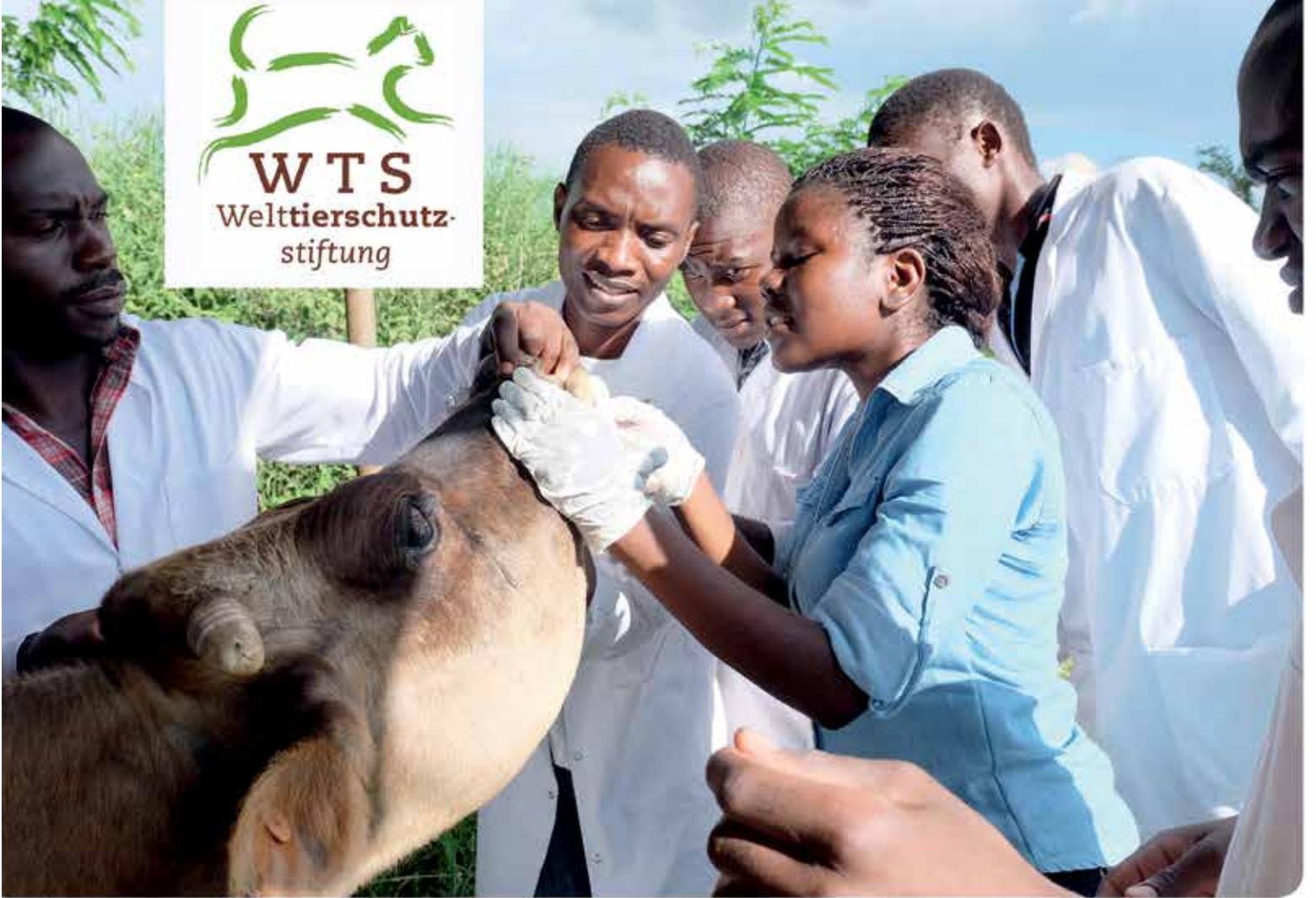
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# SAFEGUARD THE KENYAN LIVESTOCK FARMING ENTERPRISES

*Dr Kahariri Samuel, BVM, MVEE  
National Chairman, Kenya Veterinary Association*

The livestock sector contributes over 12% to the country's GDP and 40% to the agricultural GDP. The growth in the multibillion sector is accelerated when all the value chain players have the requisite enabling environment to undertake their respective roles.



As we focus on the government's big four agenda and particularly the agenda on food security, it is critical to note that the livestock sector holds the potential of becoming the single largest contributor to the national gross development product and to the ultimate achievement of the food security agenda. However, this calls for concerted efforts by all the stakeholders to support the livestock enterprises and grow the agribusiness in the sector. The Kenyan government must establish reliable market infrastructure for livestock and livestock products and create an enabling environment in order to unlock the economic potential of this sector.

Currently, the Kenyan livestock and livestock products remains largely uncompetitive in the region due to a number of reasons including, high cost of production, high prevalence of transboundary animal diseases and low quality of produce due to under-utilization of modern technologies and genetic advancements.

Kenyan livestock producers continue to experience unfair competition from the neighboring countries due to illegal entry of animals and smuggling of animal products like eggs, milk, meat through the porous borders. The main borders that aid this smuggling are the Kenya – Uganda border and the Kenya – Tanzania border. Due to overreliance on maize as the staple food in Kenya compared to the neighboring countries, the cost of maize remains higher in Kenya than in these countries. Since maize is a key component in most animal feeds, the cost of animal feeds shoots up rendering the cost of production for the Kenyan animals and animal produce higher and uncompetitive in the region. As a result, this threatens the enterprises in the entire value chain and may eventually lead to closure and lack of incentives for producers and investors. The net effect is Kenya may remain a net importer of all animal products and lack of realization of food and nutritional security in the country.

In order to deal with this, the Kenya Veterinary Association and partners will continue to impress on the Kenyan government and work together to look at all the possible measures that can be employed to significantly lower the cost of production, make the environment conducive for all the livestock value chain enterprises, devise an incentive system for Kenyan livestock producers and avoid overreliance on maize. This can be done by supporting the pastoral communities to expand and modernize their traditional meat and milk storage technologies to cushion the communities from the impact of drought in the ASAL regions as well as use other traditional foods.

Reduction of the cost of production of animal products may require various interventions including; zero rating the animal feeds and other inputs, animal genetic improvement, investment in livestock disease control to improve access to the international markets and guarantee safety of the food of animal origin among other key initiatives. Therefore, the government must come up with a master plan on how to revive and transform the sector to safeguard the millions of jobs in the sector and to encourage producers to increase the quality and the amount of produce.



*Pork made ready for sale*

# COMMON PIG PRODUCTS

## **Introduction**

The most common type of pig product is pork. However, pigs have a wide range of products that cater to the needs of different consumers. For instance, pigs are a source of manure, bones can be used to manufacture glue, and pork, which can be processed into sausages, bacon, and pork chops.

Since pig husbandry and rearing have been in existence since 500 BC, pork has become a very popular dish around the world. This article discusses the most common pig products, with a specific focus on sausage, bacon, bologna, and pork chops. Additionally, the article discusses other products such as manure and bone glue derived from pig bones.

## **Pork Sausages**

Sausages are common products that can be produced from a variety of meats including beef, chicken, turkey, and pork. Like all the other sau-

sages, pork sausages are cylinder-shaped products, produced from ground pork encased in a thin skin mainly derived from animal intestine. In some cases, the sausage is encased in an artificially manufactured skin. The pork in the sausage is often doused with food additives like salt and spices, which add flavor and taste to the sausages.

The sausages can be cooked by pan-frying, barbecuing, or boiling. To increase shelf life, manufacturers of sausages often preserve them through curing, drying, smoking, or freezing. Cured and smoked sausages do not need refrigeration.

In the contemporary society, there are different ranges of sausages. The type of sausage is highly dependent on the cultures of the manufacturer. The different cultures influence the methods of preparation and additives. For instance, some cultures make sausages using fat globules scattered in a

protein solution. Italians on the other hand make bologna sausage.

### **Pork Bologna**

Bologna also baloney originated from the Italian city of Bologna and comes from mortadella, a finely ground meat made from baked cubes of pork fat. Bologna is mainly used in making sandwiches. Aside from pork, it can also be derived from chicken, turkey, and beef and may be seasoned with black pepper, nutmeg, allspice, coriander and celery seed. There are many types of Bologna sausages which differ in sizes and method of preparation to suit diverse tastes.

### **Bacon**

Bacon is often prepared from meat derived from the belly or the back of the pig. It is often prepared by curing meat. The process of curing bacon involves injecting with brine or soaking also known as wet curing. Alternatively, it can also be dry cured using plain crystal salt. Some cultures eat bacon as a side dish, while others consume it as a main dish. Fresh bacon can be cooked through boiling, baking, frying, or roasting. However, most people prefer panfrying.

During cooking, different flavors of bacon can be achieved depending on the type of fuel used. For instance, some individuals prepare bacon with wood, corncobs, or peat to achieve the flavor needed. The cooking process can last up to eight hours to achieve the intensity of the flavor needed. Bacon

differs from other salt-cured pork by the different cuts of meat and manner of curing. Bacon can be compared to salt pork although salt pork has a higher salt content and is never smoked.

### **Pork Chops**

A pork chop typically consists of a loin cut from the pig's spine often containing a rib or section of a vertebra. They could also be made from the loin, ribs and blade or shoulder, which produce fattier chops compared to the loin chops. Pork chops may or may not contain bones and they are often cut between half an inch to two inches thick.

Unlike sausages, pork chops are not usually processed and are served like any other meat in portions. They are widely consumed around the world. The ideal method of cooking pork chops is roasting. However, they can also be, grilled, fried, and stuffed. When cooked properly they are juicy and very delicious.

### **Manure**

Pigs are a good source of manure. The animals' faecal material is often put in a compost pit where it is left to decompose and create nutrients for plants. The ideal compost is prepared by combining the pigs' faecal matter with dead plant matter. The mixture is then left to rot under very hot conditions that allow decomposition as well as the killing of microbial such as e-coli. The compost is often referred to as black gold and it is in high demand among farmers who do not want to utilize chemical fertilizers.



*Pigs on a farm.*

### Bone Glue

Pigs' bones can be boiled to very high temperatures to form an adhesive. The glue is often used in developing veneering and marquetry. Additionally, it is used in restoring paintings, parchments, and artefacts. However the use of adhesive from pig bones is not industrialized. As such, it is not a popular product.

### Conclusion

Pigs produce a wide range of products such as meat, glue, and manure. However, their main product is pork, which is used in making sausages, bologna, bacon and pork chops. Currently, these products are widely consumed around the world as they provide a great source of protein.

# MARKET FOR PIG PRODUCTS IN KENYA

### Introduction

Even though the exact size of the pork market in Kenya is unknown, studies have shown that pork accounts for approximately 38% of the world's meat market. The popularity of pork and other pig products has prompted an increase in pork production in the country, especially in the past two decades, when farmers realised the benefits of pig farming. Consequently, it has grown to be one of the biggest agribusiness ventures. Hence, farmers are clamouring for an opportunity to rear pigs. The majority want to gain profits from the huge Kenyan market for pigs and pig products. This article analyses the market for pig products in Kenya and its viability as an agribusiness venture.

### Pig Products

The main product from pigs is pork. However, different entities process it differently and name it based on how it is processed. The most common pork products in the market are sausages, bacon, and pork chops. Pork sausages are cylindrical pig products made from ground meat encased in a thin intestinal skin to hold it together. The sausages are usually salted and doused with spices to give it taste. On the other hand, bacon is a form of salt-cured pork. It is prepared from meat cut from different body parts of the pig, particularly the



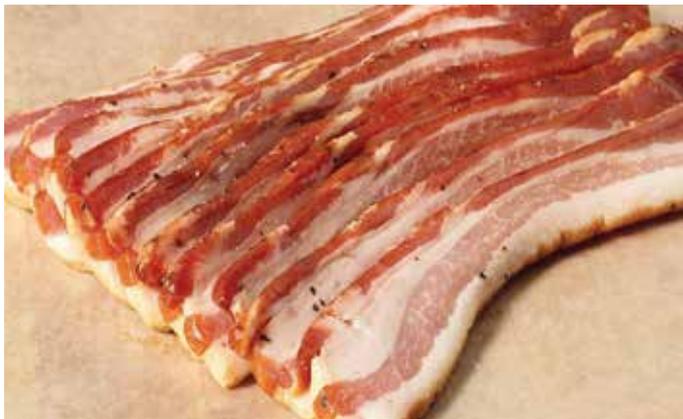
*Choma sausages are very popular in entertainments joints around urban centres.*

back and belly parts, which have less fat. Pork chops are unprocessed and leaner loin cuts slashed perpendicularly from the pig's spine. The chops usually contain part of the rib or vertebral column.

### Market Availability and Size

Since 2010, the pig market has been growing steadily, especially as a sizeable portion of the Kenyan population opts for pork rather other forms of expensive meat such as poultry, fish, and beef. Many Kenyans are pork consumers, except for a few religious communities such as the Muslims of the Northern and Coastal regions. Based on this fact, Kenyan farmers can profitably sell their produce in most regions of the country where the Muslim population is low.

As the Kenyan population increases, scholars believe that the demand for food, especially protein is also increasing. Today, Kenyans meet their protein needs by consuming a diverse collection of plants, animal, and insects. However, with a 2.6% population increase annually, it is imperative that farmers increase the production of animal protein such as pigs in a bid to meet the increasing protein needs. Academicians are of the opinion that an increased pork production would not lack market due to the increase in population as well as improvement in the country's economy and consumer purchasing power.



*Bacon at a meat market.*

### Where to Sell

Although the market is open for all, there are very few pork butcheries and pig slaughterhouses in Kenya. Most farmers prefer to sell their products to the professional slaughterhouses. However, a few farmers slaughter their own pigs and sell pork directly to the consumers via local butcheries.

The main buyer of pork in the country is Farmers Choice limited. The company often process more than 350 pigs per day. Nevertheless, the company does not buy live pigs. Farmers are required to transport their live animals to the Farmers Choice Plant, slaughter them, and sell the meat. Farmers Choice often checks the meat for diseases, before processing it to yield pork sausages, bacon, pork chops, or bologna.

Besides Farmer's Choice, farmers can sell their pigs to Ndumboini Farm slaughterhouse. Located in Kiambu County, the factory receives pigs from all over the country. Ndumboini Farm slaughters and delivers approximately 40 to 50 pigs per day. The pork is then distributed to butcheries, hotels, and restaurant in Nairobi and surrounding areas.

Farmers could also sell their pigs to Kabati Slaughterhouse in Murang'a. The facility slaughters approximately 25 pigs per day. However, this number is way below the capacity of the facility as it is limited by the scarcity of pigs supply. The facility sometimes slaughters underweight pigs in a bid to meet the ever-increasing demand for pork in towns like Machakos, Thika, Nyeri, Nyahururu, and Kirinyaga.



*Pork chops ready to go down with a dish of rice or ugali.*

**Pricing**

The prices of pork products vary from supplier to supplier. Normally, processed pork products are more expensive than unprocessed products. Below is a table showing the average prices of products in Kenya.

No	Product	Approximate Price per Kilogram (KShs)
1	Bacon	2,000.00
2	Sausage	600.00
3	Pork Chops	1,500.00
4	Bologna	600.00
5	Unprocessed Meat	500.00

**Promotion**

Despite its popularity, Kenyan companies rarely utilize promotion to enhance the sale of pig products. A portion of the market remains unaware of the benefits of pork, especially its nutritious value. A vast majority are still confined to the old religious idea that pork is unclean and should not be consumed. Therefore, it is important that pig farmers in conjunction with the government and the Ministry of Agriculture start promoting pig farming while educating farmers and the public on its value to the society.

**Conclusion**

The main pig product is pork, which can be processed to form sausages, bacon, and pork chops. Due to the ever-increasing population, there is sufficient market for these products. Some of the major buyers of pork include Farmer’s Choice Ltd, Ndumboini Farm, and Kabati slaughterhouse. Consumers can also buy pork directly from local pork butcheries. Whilst pork is a popular dish in the Kenyan menu, the main suppliers rarely promote it. Consequently, a sizeable portion of the market is unaware of the benefits they could derive from consuming it. It is, therefore, imperative that pig farmers, the government, and the Ministry of Agriculture start promoting pork to improve market awareness.

### THREE SUCCESS STORIES OF PIG FARMERS IN KENYA

Successful pig rearing/farming requires dedication and effort from the farmer. Farmers have to ensure that they have properly farrowed and healthy pig breeds that reach maturity early enough to gain profits. Farmers must also feed the pigs properly to ensure high yields and minimize risk of diseases. Furthermore, frequent visits to a veterinarian are key to ensure the pigs are healthy. This article discusses some of the success stories of pig farmers in Kenya.

#### *Michael Wanyoike*

After the 2007 elections in Kenya, chaos erupted across most parts of the country. Mr. Wanyoike was unfortunate to be among those who were directly affected. He had been rearing cows that were stolen by some people who took advantage of the chaos at the time. Living in cattle rustling-prone area, he decided to venture into pig farming. After seeking advice from friends and other pig farmers, he decided to set up a small pig operation. He initially purchased six pregnant sows at a cost of 180,000 shillings.

Wanyoike conducted extensive research on pig rearing through consultations and the internet. Over the years, he gained valuable experience, which enabled him to choose breeds of pig that mature quickly and are ideal for the Kenyan market. The Landrace, Large white and the Duroc were his favorite. Despite setting up a functional pig farm, Wanyoike still faced many challenges such as unavailability of feeds, diseases, and financial constraints. The feeds were expensive and sometimes diseases hindered the productivity of the sounder of pigs. Having been a victim of post-election violence, money was difficult to come by. Wanyoike had to make do with the little finances he had.

Nevertheless, he has managed to mitigate some of the challenges through wit and experience. For instance, Wanyoike started producing his own feed in a bid to reduce the cost of buying feeds. Even though he had initially ventured into pig farming with very little knowledge of the operation, Wanyoike is currently a prospering pig farmer. He has managed to carve a niche for himself as a significant pig farmer in Kenya.

#### *Muhoho Mwai*

Muhoho is the owner of a small parcel of land measuring 25 by 60 feet in Kayole Estate, Nairobi. Even though the size of the land is very small, he has converted it into a lucrative pigsty. Muhoho feeds his pigs on rice bran, sourced from Mwea. The rice is mixed with molasses, supplements, and cabbages to ensure that the pigs have enough food. Muhoho chose to utilize this type of pig feed because it is very cheap and easily available within Nairobi. This has helped him minimize costs, thus ensuring the maximization of profits.

Muhoho ventured into pig farming after opting out of building rental houses. According to him, the profits he gets from pig farming far outweigh what he would get from a monthly rental income. From an initial three sows, the number of his pigs has significantly increased over time. Currently, he owns a large sounder of pigs, which he believes are more profitable than the real estate business. To maximize his profits, Muhoho sells his pigs directly to butcheries, thus eliminating the need for intermediaries. A 50kg pig fetches between 15,000 and 25,000 shillings. On the other hand, a three-month piglet cost 15,000 shillings while a sow goes for 40,000 shillings.

#### *Martin Gachuma*

Mr. Gachuma developed an interest in pig farming from his parents. However, after school, he joined the banking industry in a bid to earn a living. However, in 1995, he left his banking job to start pig farming. Over the years, he developed his farm as he gained experience in pig farming. Currently, he is one of the most successful pig farmers in the country. He even uses his extensive knowledge of pigs to mentor other budding pig farmers. As proof of success, he won accolades, including the best pig breeder at the Nairobi Trade Fair. Additionally, he is a renowned supplier for the Farmers Choice where he supplies a minimum of 15 grown pigs monthly. According to Mr. Gachuma, pig farming will always be part of his life because it provides him with the financial security he needs. He believes that there is an untapped opportunity for pigs if only more would venture into pig farming to meet market demands. Among factors that have contributed to his success, include low-cost feed and sustainability of pig farming.

# Interesting facts about pigs

## **1.) Pigs were the first animals to be domesticated**

The first book on pig farming was written by Chinese Emperor Fo Hi in 3468 BC, but historians theorize that pigs were domesticated about 6000 years ago. The first pigs came to America in 1539 with the Spanish explorer Hernando de Soto. Perhaps when he found the city of gold, he meant to celebrate with bacon?

## **2.) Bacon is one of the world's oldest meats**

Dating back to 1500 B.C., bacon has been a favorite for millennia. The phrase "bring home the bacon" originated during the 12th Century when a church in England offered a side of bacon to any man who could swear before the church that he had not had a fight with his wife for a year. Any man that could bring home the bacon was then highly respected among the community. Today bacon is big business, with over 2 billion pounds of bacon being produced annually in the United States.

## **3.) Pigs are warriors**

Pigs were reported to be used in ancient warfare tactics. Alexander the Great reportedly used pigs as a counter attack to elephants, since elephants were terrified of a pig's loud squeals. Pigs have also been used for their keen sense of smell to source out buried land mines in more modern wars.

## **4.) Pigs are the brains of the barnyard**

Winston Churchill once said: "I am fond of pigs. Dogs look up to us. Cats look down on us. Pigs treat us as equals." In all of nature they rank third behind apes and dolphins in terms of intelligence. They are the quickest animals to learn a new routine or trick!

## **5.) Pigs don't 'sweat like pigs'**

"You are sweating like a pig!" While this phrase is a common insult, the science behind the statement is faulty. Pigs actually do not have sweat glands, which is why they tend to roll in the mud in nature to keep cool. Modern farming practices aim to regulate temperatures in the barn to keep the animals comfortable.

## **6.) Pigs are omnivores**

"You eat like a pig!" Where sweating may be false, this one is absolutely true! Pigs are gorge feeders, which means when left to their own foraging they will eat until they are stuffed. They also are indiscriminate eaters, eating both meat and forage combined. In many pig diets today, you will find anything from ice cream to cereal grains like corn to balance the nutritional needs and un-picky palates of our pork friends.

## **7.) Pigs can run a 7 minute mile**

With scooting ground speeds that top out around 11 mph, they might make a great marathon partner! They may not be the fastest or fittest of nature's species. But considering their lung size in proportion to their body size is relatively small, this attitude towards cardio is unsurprising.

## **8.) Pigs keep their room clean**

When your mom said your bedroom looked like a pig sty, you should have said thank you. Then to avoid getting grounded tell her this fact: Pigs are naturally a clean and organized barnyard animal. Like we learned before, they only roll in mud to cool off; but they self-potty train in a barn or in nature. Dunging patterns have been studied by scientist (yes, people get paid to study how pigs poop), and as more and more farms transition to open pen gestation we see that pigs establish a community toilet for the group.

**9.) Pigs gestation length, just remember 3**

Three months, three weeks, three days is the average gestation length for most sows. This clever sequence of three totals up to an average 114 day pregnancy. The average litter size globally is six to ten, with most sows having 1.5 litters per year. In the US, litters average more than 13 pigs per litter, due to improvements in genetics, nutrition and herd health.

**10.) Pigs have below average eyesight, but powerful noses**

Pigs need glasses. Their eyesight is among the poorest of the barnyard species, but they have one of the most powerful noses. In France pigs are used to search for truffles due to their keen sense of smell.

**11.) Pigs are louder than jet engines**

What they lack in eyesight, they make up for in squeal. Pigs can scream up to 130 decibels! With jet engines coming in at 120 decibels compared to diesel engines at 80 decibels, you can imagine how noisy a group of pigs can be if they decide to cause a commotion.

**12.) Thank a pig for gelatin**

Pigs aren't just for bacon! They also contribute many other by-products to the market, such as gelatin which makes marshmallows or hair for high quality paint brushes. In fact, according to the Australian Royal Airforce, due to such a shortage of pork after World War 2, the country of Australia found themselves out of paintbrushes to paint houses. As a result they had to import over 40,000 lbs of pig hair so people could paint their homes!

**13.) Pigs can save human lives**

Porcine heart valves are commonly used in human patients who require replacement valves. There is also hope that one day pigs could provide a step in helping to treat or to cure diabetes because of the similarities between the human and porcine pancreas.

**14.) Pork is the most consumed animal protein in the world**

In 2015, according to pork.org, pork accounted for 40% of all meat animal protein consumed worldwide, compared to poultry (34%) and beef (21%). Pork consumption varies by region, with religious practices heavily influencing demand. For instance, in the Middle East pork is taboo because of Jewish kosher and Muslim Halal dietary restrictions. But pork is widely consumed in Asia, Europe, Africa and the Americas. China leads the way for per capita pork consumption with 90 lbs per person annually.

*Pig heart valves are frequently used to save human lives.*





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# BACONMANIA

Many will agree that there is nothing like waking up to the aroma of freshly pan fried crispy bacon in the morning. The mouth just starts watering in anticipation of the hot smoky tasty bacon. What is bacon? Bacon is salted and cured pork. It is derived from the belly and back of the pig. The cut's taste and flavor are generally considered better.

Pig rearing began in China in the 7500BC and the Chinese are still the largest producers of pigs. It is believed that about half of the world's pigs come from China. China was also the first to cook salted pork belly. By salting the meat, they preserved it.

In different countries bacon is prepared from different cuts of the pig. In America it is made from the pork belly, while in England it is from the shoulder and ham bacon whereas in Canada, it comes from the loin. All in all, bacon will be smoky, salty and delicious from whichever cut.

Bacon is enjoyed all over the world mainly because it can be prepared for breakfast, lunch or even dinner. Bacon is a treat whether for breakfast, tossed in a salad, in a sandwich or in a dessert. It is also versatile as it can be prepared by frying, grilling, baking, smoking or boiling. Bacon can be used as an appetizer, a meal, a snack or even a dessert and still taste wonderful. When having English breakfast, bacon is considered compulsory and is always accompanied by sausage and eggs. Producers process it in three ways: they can boil the meat, which is considered ready to eat, dry it in cold air, which needs a bit of cooking, or smoke it. Pork bacon has more protein than chicken. Nutritionally, it contains high levels of zinc, sodium, iron and B-vitamins.

However, all that smells and tastes great is not always good for your health. Though bacon is a world-wide delicacy, it has a downside. Bacon has high levels of sodium, saturated fats and preservatives which can lead to health challenges. High sodium intake leads to kidney diseases, stroke, heart disease and high blood pressure. Preservatives extend the shelf life and also improve the flavor of the bacon, but their consumption might lead to increased risk of heart disease and diabetes.

As much as bacon is a delicacy to many, how much is too much bacon? Though bacon comes from an animal, it is more of a fat than a protein. It does not contain the good fat, monounsaturated, like that of an avocado but has saturated fat. Saturated fats are a great contributor to chronic diseases like diabetes and obesity. One serving of bacon should be 15 grams or a little more than one cooked slice, says Caroline West Passarella, a spokesperson for the Academy of Dietetics. One may not be satisfied by one slice of bacon, maybe six or seven slices would do. Passarella goes ahead to state that six slices a week may be all you need to eat depending on your calorie needs.

Jews and Muslims do not eat pork bacon since their religion prohibits it. In the market you will find different kinds of bacon such as turkey, beef, lamb, goat and even chicken. These meats are cut and cured to look like bacon to fill the gap of non-pork eaters and for substitution reasons. Bacon is considered to be one meat that is likely to turn vegetarians to meat lovers. A compound that is contained in bacon is a pleasing neurochemical response making one bacon-addicted. A researcher postulates that though not proven, bacon can improve fetal brain development, increase the presence of choline and help cure a hangover.



*Yummy  
bacon on  
a platter.*

Bacon is so popular that manufacturers and producers have introduced various products that have the taste or aroma of sizzling bacon. There are a number of vodkas, beers and bourbon that are bacon flavored. Bloody Mary and baconini are two examples of bacon aromatized cocktails. For those who have a sweet tooth you are not left out. There is chocolate covered bacon, candied bacon ice-cream, bacon cookies, bacon mints and bacon lollipops. For the non-edibles there is bacon flavored toothpaste, bacon lip balm, bacon flavored dental floss and a perfume that smells like hot sizzling bacon.

When it comes to the cooking of bacon it should always be prepared till well done. Eating under-cooked or raw bacon can lead to serious illness. Bacon contains bacteria and parasites which can lead to gastrointestinal infections if it is not well cooked. Bacteria on the surface of bacon can multiply even under refrigeration. Bacon should be cooked above 145 degrees Fahrenheit (About 63 degrees celsius) to kill all the bacteria. To be sure, it should always be cooked to a crisp level. Bacteria present in raw bacon are Staphylococcus aureus, Campylobacter, Listeria monocytogenes, Yersinia enterocolitica and Toxoplasmosis Gondi. When these bacteria are ingested, gastrointestinal symptoms will develop. The parasite found in raw pork is called Trichinella. Symptoms of Trichinellosis are nausea, vomiting, headache, diarrhea, abdominal pain, eye swelling and joint aches. Severe symptoms are muscle incoordination, difficulty in breathing and at worst, death. The severe symptoms can take up to two to eight weeks after ingestion to appear.

To wrap up on a lighter note, here are some interesting facts on bacon:

\*Bacon fat was turned into glycerin which was turned into explosives, gunpowder and ammunition during the Second World War.

\*On the first manned mission to the moon, Neil Armstrong and the Apollo crew enjoyed bacon on the moon.

\*December 30th is celebrated as the National Bacon day in America.

\*Would you like to know how the phrase, 'bring home the bacon', came about? In England, a church in Dunmow offered bacon to any husband who could affirm that he had stayed a year and a day without arguing with his wife. The church would award him a side of bacon to take home. Such husbands were recognized as respected citizens and they 'brought home the bacon'.

# COMMON PIG BREEDS

## Introduction

According to livestock experts, there are over 100 breeds of pig in the world. However, in Kenya, farmers concentrate on four major breeds, which do well in the market.

The breeds include the Large White, Hampshire, Landrace and Duroc. Each breed has different characteristics to suit the needs of the different consumers in the market. Additionally, each breed is suited for a different environment, thus allowing farmers the opportunity to raise pigs in a variety of areas within Kenya and Africa.

For instance, some breeds are suited for colder climates and are, therefore, raised in the highlands. Farmers ought to understand the different breeds before engaging in pig farming. Often, the survivability and output of pigs depends on the breed, nutrition, as well as the environment they are raised in.

Therefore, when choosing the right breed of pig for the market, farmers have to consider aspects such as the nutrition, environment, and market needs. This article discusses some of the common pig breeds in Kenya as well as the attributes used to identify them.

## Landrace Pig Breed

Initially developed by the Danish, the Landrace is a crossbreed between the native pig in Denmark and the large white. It is characterized by pure, sparsely distributed white hair and drooping forward slanting ears.

The Landrace is considered an excellent producer of ham because of its ability to grow rapidly and the large size of its carcass. Apart from this, the breed is easily manageable and can be kept both indoors and outdoors without hindering productivity. Its flexibility and good performance have made it one of the best-rated breeds in the African markets.

Most farmers utilize the Landrace in crossbreeding programs in a bid to enhance the quality of other breeds. The Landrace has been known to improve the productivity and quality of other breeds.

## Duroc

The Duroc, also known as the red hogs or the domestic American hog, owes its origin to the United States of America. Characterized by thick red hair, drooping ears, and a large muscular frame, this breed is ideal for outdoor farming. Hence, they are mainly found in the Kenyan highlands where it is cold and wet. It has the ability to persevere the cold and wet weather and has strong survival instincts that make it very ferocious while nurturing its offspring.

The Duroc has juicy, muscled flesh ideal for light pork and largescale hog production. Farmers often utilize the Duroc in crossbreeding. For instance, the Duroc has been crossbred with the Large White/Landrace with the resulting cross producing high-quality bacon.

## Hampshire

The Hampshire was originally sired/bred in the United States of America. It is an all-purpose breed with very lean meat. Hampshire has a large body with black and white markings. The head is usually black from the shoulders, the same is true from their hind legs to the tail, and the mid-section is usually white.

Most farmers prefer this breed due to its mild temperament, a large number of litter, excellent maternal qualities, and fast growth. Additionally, the excellent productivity has encouraged widespread use of the Hampshire in cross-breeding of pigs for pork. The breed can conveniently be crossed with any other breed and the preferred characteristics are retained.



*Landrace pigs feeding.*

### **The Large White**

This strong, highly adaptable, and high performing breed was originally bred as an outdoor breed. It is often ranked as one of the highest performing and most common breeds of pig in Kenya. The Large White is usually characterized by its white skin, long body, mid-sized erect ears, and longer legs compared to other breeds of pig.

The breed is highly vulnerable to sunburn as it lacks skin pigment rendering it less favorable for large-scale production. This breed matures slowly but it is widely liked because of its ability to produce a large size of litter (between 10 and 12 piglets), exceptional maternal instinct, and good output. Farmers often crossbreed this Large White with other breeds in a bid to produce a commercial sounder.

### **Other Breeds**

Despite the farmers concentrating on four major breeds of pigs, other breeds are slowly seeping into

the Kenyan markets. Recently, scholars have identified farmers with breeds such as the Pietrain and Saddleback. The Pietrain originates from Pietrain village Belgium. This breed is known to be an excellent producer of lean meat.

However, it is hampered due to the presence of the halothane gene. Usually, pigs with the halothane gene undergo stress and eventually die when exposed to halothane anesthesia. On the other hand, the Saddleback was the predecessor of the Large White, which inherited the majority of its performance and qualities.

Answers to the word search puzzle on page 35

Saddleback, Pietrain,  
Large white, Landrace, Duroc, Hampshire,

# Common diseases and parasites of pigs: personal experience view

In the recent past, the pig industry in Kenya has taken an upward trajectory, thanks to the industry players who have continued to provide a conducive environment for consumption of pork and pork products. The industry has however faced its fair share of challenges especially on diseases and parasites. As a result farmers have incurred unsurmountable losses to the extent that some have been driven out of business.

When a disease strikes in a pig farm, the farmer is rarely prepared and many a times does not know how to detect the presence of a disease and as such takes long to take the necessary action which might be too late. The goal of any pig farmer should be to prevent rather than be forced to treat a disease. To achieve this, they should be on the lookout for the most common signs exhibited by sick pigs. These are lack of appetite for feed/water, rapid breathing (which is an indication of a fever), droopy ears or ears pointing downwards, dull eyes, skin and hair, reddish skin in case of white coloured pigs, diarrhoea which may sometimes be bloody or blood stained, isolation from the rest of the herd and a limp tail.

## COMMON DISEASES

The diseases frequently encountered in Kenyan pig farms though not rampant include:

**1. Mastitis** – It's a bacterial infection causing inflammation of the mammary organs. The bacteria enters the teats orifice or wounds in the udder. The signs include a swollen and painful udder, reduction of milk from the affected quarters, the sow refuses her piglets to suckle, depression and fever. Prevention entails provision of clean adequate bedding for the sow, keeping the pen dry, clean and free of dampness and practicing teeth clipping to avoid wounds on the udder as a result of bites during suckling.

Treatment is done by gently massaging the udder with lukewarm water, extracting milk from the affected udder and discarding it. Separate the affected sow from its piglets to reduce associated stress (allow a few piglets to suckle at a time). Use recommended antibiotics as guided by a qualified veterinarian.

**2. Anaphrodisias (Failure to breed)** - This is a condition exhibited by sows/gilts not coming on heat due to various reasons like emaciation, mineral deficiency in feeds, overweight and heavy infestation with parasites leading to stress.

Prevention is by feeding the correct diet to the sow and having regular deworming to control of internal parasites. Treatment could involve the use of hormones recommended by a qualified vet. Gilts should not be treated because the condition might persist after every litter if the hormone is used.

**3. Abortions, mummies and still births** – This may happen as a result of a viral infection during pregnancy. It's common at week 42 of gestation when the sow is seen to cycle again. Some sows fail to farrow completely or farrow a combination of dead and weak piglets or mummified piglets. Abortion may also occur upon a slightest form of stress like high severe fever, trauma or even fighting.

This problem can be mitigated by providing supportive care and euthanizing piglets with little survival chance. Aborted fetuses and placenta can be collected in a polythene bag, frozen and availed to a qualified veterinarian for examination to ascertain the cause.

There are vaccines available and a veterinarian should be consulted to give vaccination guidelines on both gilts and sows for protection.

**4. Acute Pneumonia** – It is an infection of the lungs

caused by bacteria or fungi resulting in respiratory symptoms. It affects pigs of all ages but piglets are most affected and it can spread rapidly among the herd. The pigs are depressed, lacks appetite, have exaggerated breathing, fever, barking cough and some are found dead. It's advisable to isolate the affected pigs to a draft free section to prevent spread of the infection. Antibiotic treatment should be sought in severe cases under the guidance of a qualified veterinarian.

**5. Neonatal Deaths** – This refers to death of piglets before weaning and it's common in most farms leading to huge economic losses. This comes as a result of starvation, failure of passive transfer of maternal immunity to piglets through colostrum, trauma due to cold, umbilical infection, lameness, weakness/dehydration or post-partum/pre-partum stress and the sow kills the piglets once born.

Though 100% survival/weaning rate is unrealistic. Experienced producers recognize weak piglets that will not thrive and euthanize them immediately after birth. Commercial producers aim to wean 90% of piglets born alive, but every additional piglet weaned contributes to your financial bottom line. It's advisable to monitor piglets closely to ensure they adequately suckle at any given time. In case of large litters, they should be split into two groups, fostered or fed on milk replacer where possible. The farrowing area should have a warm creep area (>30°C) to allow the piglets to be comfortable and out of the range of the sow. This area must be fully washed, disinfected and dried between litters. It is important to disinfect the umbilical stump (dip the navel with an iodine solution) soon after birth.

## PARASITES

Parasites have been known to cause enormous economic losses to pig producers in many ways including increased harvesting time, reduced feed efficiency and decreased pork value. The swine parasites are classified into two broad categories namely internal and external parasites. The presence of external parasites on pigs are characterised by itching, rubbing, scrubbing, loss of hair and lack of appetite resulting in stunted growth. The most affected areas are neck, inside the ears, inner thighs, jowl and flank.

The main parasites in this category include; mange, lice and myiasis.

**1. Mange** – This is a mite that lives in the skin of a pig and burrows through the skin layers consuming

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and digesting tissues. It's transmitted through direct contact and infected pigs have thick and red skin around the ears, shoulders, stomach and inner thighs. In severe cases, it leads to anaemia in piglets and even death. General cleanliness is highly recommended in the pig unit including washing the sows before farrowing and boars at least four times a year, treating all animals at the same time to reduce spread and treating gilts upon entering the farm before serving. In case of light contamination, herbal treatment (smearing coconut oil) can be effective control. Treatment / control products available in the market are ivermectin 1% and synthetic pyrethroids which can be used as directed by veterinarian.

**2.Lice** – They are blood suckers that cause irritation of the skin. They affect all ages and are commonly found in the folds of the skin, behind the ears and inner thighs. They cause itching, rough hair coat, wound bites and red spots on the skin. General cleanliness and treatment with the correct acaricides is highly recommended.

**3.Myiasis** – This is a disease caused by flies which lay eggs in wounds of the pig. The eggs hatch into larvae that feed on flesh causing even bigger wounds. Infected wounds look wet and dirty and pigs are easily irritable. Good mange control can greatly reduce wounds. Wounds should be cleaned daily with water and disinfectant. Tail docking, ear notching and castration should be properly handled and correct disinfectants applied.

Internal parasites in pigs are mainly worms of different types such as ascarids, whipworms, lung worms, kidney worm, and liver flukes. They affect most ages of pigs without necessarily showing any signs of illness. However, heavy signs of infestation are a rough hair coat, a pot-belly and stunted growth. In other cases, depending on the type of worms, there might be a persistent cough, presence of worms in faeces, lungs or intestines upon slaughter. Deworming as a routine practice with recommended dewormers for both treatment and control is advised.

Other problems in the farms, though not common include, hernia, lameness, rectal prolapse, septicaemia, trauma, bite injuries and water deprivation. These conditions can be managed at the farm as the cases present. They do not necessarily require medical attention but guidance from an experienced person on pig matters is required.

Compiled by *GEORGE MONARI* – Pig Procurement and Extension Services Manager, *Farmers Choice Ltd.*

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## 2019: The Year of the pig

Did you know that 2019 is the Chinese year of the pig? The next 12 months are officially known as the Year of the Pig. Millions of people around the world celebrated the start of the Chinese New Year on February 5 with parades, food and festivities. Also known as Spring Festival, the Chinese New Year celebrations began on the first of the lunar calendar and went on until February 15. This start of the New Year does not align with our Gregorian calendar system which is why the date appears to be completely different. According to the Chinese calendar system, the year of the pig will run from February 5th 2019 to end on January 24th 2020.

So now we know that 2019 is the Year of the Pig, but what does it mean? Twelve animals make up the signs of the Chinese zodiac. In order, the twelve Chinese horoscope animals are the Rat, Ox, Tiger, Rabbit, Dragon, Snake, Horse, Goat, Monkey, Rooster, Dog and the Pig. The Pig is the twelfth in the 12-year cycle of Chinese zodiac sign, it is the twelfth sign of the zodiac animals. Recent and future years of the pig are 1923, 1935, 1947, 1959, 1971, 1983, 1995, 2007, 2019, 2031, 2043...

People born in a certain animal year are believed to have attributes of that animal. It is claimed that having that particular animal's attributes affects how one relates with other people. It is further believed that years represented by the animal reflects people's characters. For example, according to CNN, the year of the pig is considered a positive one, generally indicating wealth and fortune for those born in the upcoming 12 months. Chinesenewyear.net explains that pigs are a symbol of wealth and their chubby faces and big ears denote good fortune. The website also lauds the pig's "beautiful personality."



How did all these come about, you ask? The pig is said to get its last place in the calendar because of poor time-keeping. According to a Chinese website, Jade Emperor said the animals' order would be determined by their arrival to attend his party. One myth indicates that the pig was late because he overslept but yet another story states that the delay was caused by a wolf destroying his home. Another account details that Jade Emperor needed to choose 12 animals to guard his palace. The Cat asked his neighbor Rat to help him sign up. Rat forgot, and the two fell out and became mortal enemies. At the palace, Ox was first in line, but Rat secretly jumped in front of him. Tiger and Dragon thought it was unfair, but then settled behind Ox. Rabbit found it unfair too. He wanted to race with Dragon and succeeded. This angered Dog, who bit Rabbit in a fit of rage and was sent to the back of the line as punishment. Snake, Horse, Goat, Monkey and Rooster fought amongst themselves as well. Pig came late, after all the animals had finally settled in line, and was therefore the last.

And so there, we now know why 2019 till early 2020 is the Chinese Year of the pig. Snort.

# Controlling dog and cat population in Kenya

By Dr. Isaiah Nchagwa Chacha  
cnchagwa@gmail.com

## Introduction

Unlike livestock whose increase in numbers is celebrated, the case is different with dogs, cats and pets in general. Pets come with needs that include feeds, vet bills, accommodation, affection and in return they give emotional attachment, security in some cases and companionship as opposed to food or financial benefits from livestock.

Therefore it becomes critical to keep the numbers of our pets to a manageable level to ensure they have a comfortable stay. In our Kenyan setting, there is still a big challenge of dog and cat responsible ownership. However in urban areas some pet owners practice good pet ownership and are informed

and embrace the importance of pet population control.

## Methods

There are several methods of 'family planning' in dogs and cats although not as advanced as it is in human practice and in other countries. In our Kenyan setting the following three methods are preferred, readily available and regularly practiced.

### a. Confinement

This is whereby mostly a female dog or cat is strictly confined especially when on heat so as to avoid breeding. This method can be difficult since when the females are on heat, they attract males in the



*Overpopulated and poorly managed dogs*



*Overpopulated and poorly managed cats*

vicinity by producing a certain characteristic smell caused by pheromones, and the females too will be attracted to males. Both sexes usually do all within their ability to mutually reach each other for mating.

*Pros*

- The method does not render the pet sterile and can breed when necessary
- It is not costly.

*Cons*

- Difficult to achieve results when there are other dogs or cats in the vicinity
- If the female does not breed throughout her life, there are high chances of developing reproductive complications later on in life
- During estrous or heat, there is a lot of restlessness and unnecessary vocalization (especially at night) which can be annoying
- In bitches (female dogs) there will be 'spotting' during heat whereby they produce menstrual blood spots for a period of about nine days and this can be un-hygienic for house dogs if not well managed (refer to my article, 'Dog maternity', in issue 8 of this magazine for details on spotting).
- You need to keep estrous cycle records or watch over heat especially if there are male dogs in access.

**b. Hormonal treatment**

In this method, hormones are used to manipulate estrous and/or ovulation. The most commonly used method of hormonal treatment is akin to the three months injection in human family planning. In this case, an injection, mostly Depo Medroxyprogesterone Acetate (DMPA), is given to the dog or cat at intervals as prescribed by the veterinarian based on breed, body size and age to mimic the effects of progesterone and thus the pet does not achieve estrous.

*Pros*

- The method does not render the pet sterile and can breed when necessary
- There will be no spotting by bitches
- There will be no restlessness and vocalization that comes with heat.

*Cons*

- More costly in the long run
- If the female does not breed throughout her life, there are high chances of developing reproductive



*Well maintained castrated St Bernard.*



*Well maintained spayed Japanese Spitzer.*

complications later in life

- Have to keep proper records and ensure the intervals of the injections are maintained as prescribed by the vet
- The method may fail if the estrous cycle (refer to 'Dog maternity' in issue 8) is not well timed or if the administration is not done well and thus the dog or cat will get estrous and pregnant if she breeds.

**c. Surgery**

Surgical procedure of dogs and cats population control is whereby the males are castrated (orchietomy) and females are spayed (ovariohysterectomy) commonly referred to as 'spay and neuter'. By castration, both testicles are excised while the ovaries and uterus are surgically removed in females. In this case the pets will have no urge of reproducing/mating and they will remain sterile for the rest of their lives.

### Pros

- No reproductive complications
- There will be no restlessness and vocalization that comes with heat
- There will be no spotting by bitches
- No need for keeping the estrous cycle records or watching over heat.

### Cons

- The pet becomes permanently sterile
- It is costly but a one off.

### Recommendation

The surgical method of population control is the most effective. This does not only work for the pet owner but also helps to control the population in the community. This is possible because by castrating a male, then he will not be able to father a neighbor's bitch and vice versa. The overall effect will be reduced stray dogs and cats and the available few will be responsibly owned. This reduces the menace that comes with irresponsibly owned dogs such as the spread of the deadly rabies disease.

This will also reduce pressure on shelters like Kenya Society for Protection and Care of Animals (KSPCA), and other animal welfare crusaders such as the Kenya Veterinary Association (KVA), relevant government departments and private organizations that go out of their way to uphold animal welfare standards. Once in a while these organizations and veterinarians of good will do carry out Corporate Social Responsibility (CSR) activities by offering free spay and neuter campaigns especially to rural areas and in the slum dwelling populace who may not comfortably afford the services.

The pressure on vaccinations (especially against rabies) will also reduce as the numbers will be manageable.

### Inbreeding

Apart from population control, this method also couples up to check on inbreeding, whereby animals of the same family line or relatives breed akin to incest in humans. Inbreeding is discouraged as the progeny will tend to have inferior characteristics.

In cases where you have two dogs of different gender, both from the same parentage you are advised to keep them off from breeding and any of the above methods can be used depending on the

practicability. Where breeding is required, you can select a non-related partner to avoid inbreeding.

### Disease control

The lesser the animal population the easier it is to control diseases. Of most importance in dogs and cats is the rabies disease.

Rabies is a zoonotic disease (affects both humans and animals) whereby humans are affected mostly from dog or cat bites. Hence if the disease is controlled in dogs and cats, it will be prevented from transmission to humans.

Rabies disease has no treatment once the signs and symptoms are observed. Even its control in humans after a suspected bite is quite expensive. Thus responsible pet ownership, population control and annual vaccination of dogs and cats are the key methods in preventing it.

Other diseases that will be managed by population control and by way of vaccination include: parvo virus and cat flu in puppies and kittens respectively, canine distemper, canine hepatitis, leptospirosis among others.

### What if I want to breed? Why control population?

Dogs and cats are multiparous, that is they produce many offspring at a single whelp (birth) with an average of up to six young ones. These puppies and kittens need space, vaccination per offspring and the vet bills can be costly and above all feeding after they are weaned. It should be remembered that these pets are carnivorous and for you to keep them happy and healthy, their meal must have meat all the time, yet meat is quite expensive.

Therefore if you must breed, be prepared to meet the cost and bear in mind that the young ones will soon each breed. Within two years, a bitch and her young ones allowed to breed without control can produce up to 100 dogs. If intending to sell, then you must ensure you have ready clients and even have them pay upfront before breeding.

This issue of dogs and cats population control is still complex and a big problem in our society and is of animal welfare significance. A lot has to be done to combat the problem with strategic focus on education, research and public policy.

# THE LADY AND THE OWL

We had just opened the doors of the veterinary clinic one bright, sunny Tuesday morning when the dainty lady carrying a cat travel cage made an entrance. She was ushered into the consultation room. Being the first client for the day, she did not need to wait. "Good morning," thundered Dr. Rael Jack Owino in his deep baritone voice to the lady.

Dr. RJ, as we fondly called him, was a partner at the Veterinary practice. "What seems to be the matter with kitty in here?" He continued, pointing at the mahogany-colored cat cage which had by now been set gently onto the consultation table. "Morning to you Doctor." The response came from the middle-aged, white lady Mrs. Bridgeport. "Actually, this isn't a cat in here. It is an owlet. A baby owl whom I have just named Oliver." She offered, opening the cage. "Isn't that just a splendid name for the darling bird?" She expressed in a singsong voice as she delicately brought the owlet out and placed him on the towel-lined table surface. "It is indeed a lovely name," replied RJ.

The clinic not being busy yet, I chose to remain in as Dr. RJ handled the case. And after all, it was turning out to be a rather unique case. We did not see owls in the practice frequently. "I think he has a broken wing. I found him on the ground on my driveway at my house this morning." She continued to explain. "He was struggling to walk and he was dragging his wing on the ground. Immediately I knew something was amiss and so I decided to rush him here." She went on. True to her words, Oliver's right wing was awkwardly drooped to one side.

Holding Oliver in a large towel to stabilize him, and for ease and comfort, Dr. RJ commenced the general physical examination on the bird as was routine. "He appears very dull." He announced as he began the examination. Oliver had slightly

fluffed feathers, a hunched stance, partially closed eyes and he was shivering. Dr. RJ then commenced the specific examination of the drooped wing. As he cautiously tried to extend the wing, the bird winced in pain. "Definitely Oliver has sustained an injury on the right wing. At this point, I think the best way to proceed is to send him for radiography. An x-ray will give us a better picture of what is going on in that wing area." He stated. "Leave the bird with us Mrs. Bridgeport." Requested Dr. RJ. "That's fine Doctor. What time should I come back for Oliver?" Mrs. Bridgeport inquired calmly as she stood to leave. "Since we have your contacts with us, we will call you as soon as Oliver's radiographs are ready, but possibly in an hour." Dr. RJ responded as he saw off Mrs. Bridgeport to the door of the consultation room.

Mwangi Kimani one of the three clinic's assistants was at hand to assist with Oliver's x-ray. Dr. RJ and Mwangi went into the x-ray room with Oliver and proceeded with the procedure. Within fifteen minutes they had finished. "That was a bit of a struggle to get the lateral view. Getting the dorsoventral view wasn't as difficult." Dr. RJ indicated as he emerged from the x-ray room. Having completed the imaging procedure, the radiographs were placed on the x-ray viewer. With our heads put together, we studied the x-rays. It was as clear as crystal, as clear as daylight.

Oliver had a simple fracture of the humerus. The humerus is the long, singular bone that joins the wing to the shoulder joint. "That he may fly again, that will require some repair." I opined thoughtfully. "I think an intramedullary pin in the humerus may be best." I suggested to RJ. An intramedullary (IM) pin is a surgical device placed internally in the bone to support the bone and aid healing. After healing, the pin is removed. "I agree with you. That will be the course of action we shall recommend to

Mrs. Bridgeport." Indicated RJ as he exited the x-ray room. Through the doors, I heard him instruct Mary, our industrious receptionist to inform Mrs. Bridgeport that the radiography had been completed.

Within twenty minutes, Mrs. Bridgeport was at our reception area waiting for Dr. RJ to finish with the two burly-looking, hyper-energetic rottweilers in for routine check-up and vaccination. When they left, which in itself was a rather clumsy affair, Mwangi gave the consultation room a quick sprucing- and freshening-up. He then brought in Oliver. Dr. RJ took great pains to explain to the nervous-looking Mrs. Bridgeport about the fracture and the recommended management. "I love animals and I just want to help Oliver. Perhaps after he recovers he will fly away and I will never see him again. However, all I want is to see him well and out of pain." She explained. "Seeing that a surgical procedure to fix the wing is the best way forward, then I have no choice but to give consent." Mrs. Bridgeport added, agreeing to Oliver's surgery at the drop of a hat. "Ok. We will do the procedure today to alleviate the pain and for healing to start right away." Dr. RJ stated. "Leave Oliver with us for the day. We will ring you when we finish placing the IM pin."

Mwangi who was seasoned at his work at the clinic and certainly worth his salt, prepared the instruments ready for the surgery. As the assistant surgeon, I prepared the patient and the requisite drugs for the procedure. With the instruments, drugs and patient ready, RJ and I scrubbed to the nines. RJ was going to be the head surgeon for the procedure. "All the best to us." I said optimistically as we gloved-up.

In the matter of one and a half hours, we had placed the IM pin into Oliver's right humerus and placed him in a cage under infrared heat for recovery. As we left the surgical theatre for the consultation room to analyze our just completed surgery, RJ instructed Mary to call Mrs. Bridgeport as promised. "Please tell her that the procedure went well. Let her know that she may visit him tomorrow if she likes." He directed. "I will do just that." Quipped Mary.

The following day, bright and early, Mrs. Bridgeport arrived at the clinic. "How is he? She asked. "Come and see him for yourself." I said as I led her in. Oliver was in his cage looking bright-eyed and in fine feather. "He is definitely much better than yesterday." Mrs. Bridgeport expressed jubilantly. She was visibly elated and satisfied with Oliver's progress. I further explained to her that he would stay in the clinic until full recovery, "We want him to stay with us for some weeks for the purpose of observation and daily medication." I said. "I have no qualms with that. I just want him to recover." Mrs. Bridgeport indicated.

Five weeks later, Oliver had made full recovery. His wing was fully healed and we had removed the IM pin. Mrs. Bridgeport came to pick him, "When I get home, I will set him free. He belongs to the wild, I will let him go back to the wild." "I agree with you. That is indeed the right thing to do." RJ commented. "Although Oliver may not speak, I am sure he will be eternally grateful to you for helping him when he was sick." With that, the lady and the owl left the clinic.

### How to take care of an injured bird

1. Protect yourself: Wear gloves. A net is very useful for capturing animals that will try to flee or fly.
2. Prepare a container: A shoebox with air holes in the lid, lined with a small cloth or paper towel works for most songbirds.
3. Put the bird in the box: Cover the bird with a light cloth and gently put it in the box or crate.
4. Keep it warm: If the bird is cold, put one end of the shoebox on a towel over a heating pad set on low. You can also warm up a water bottle and wrap it with a towel to provide warmth. Make sure the bottle is secure and will not roll onto the animal.
5. Transport the bird to a vet.

# Prudent use of antibiotics on farm animals key to animal welfare



By Dr. Victor Yamo,  
victoryamo@worldanimalprotection.org

Since their discovery, antibiotics have played a pivotal role in modern medicine. However, the inappropriate and widespread use of antibiotics in animals and humans has led to antibiotic residues being found in foods of animal origin. Now, the growing threat of antibiotic resistance is being widely recognised as a major global public health problem.

The World Antibiotic Awareness Week (WAAW) marked every November, aims to increase global awareness on antibiotic use, and encourage best practices among the general public, animal & human health workers and policy makers, to minimize the growth and spread of antibiotic resistance and reduce antibiotic residues in livestock products.

Between 40 and 80 per cent of antibiotics used on farm animals are classified as unnecessary and/or highly questionable. A study done in Kenya by the Global Antibiotic Resistance Partnership (GARP) reported that up to 70 per cent of the imported antibiotics are given to chickens, pigs and cows. It further showed that some farmers give antibiotics to their livestock to prevent them from getting sick. This inappropriate use of antibiotics in farming is currently coming under greater international consumer scrutiny and has led to major fast-food restaurants banning products with antibiotic residues within their supply chain.

World Animal Protection (WAP) believes that responsible use of antibiotics in farm animals is essential in tackling the growing resistance. This can be done by putting proper policies and measures aimed at reducing the use of antibiotics on animals by promoting higher welfare production systems in the livestock industry.

Such systems should include good housing conditions, health care and the promotion of natural animal behaviour. They should also provide for improved management, biosecurity, hygiene, sanitation, optimal animal husbandry, nutrition, genetics and use of preventive methods such as vaccination, leading to improved animal health and welfare. By eliminating the worst methods and practices of animal production such as the use of cages, crowded or barren conditions, poorly ventilated production units with wet beddings and inadequate feeding systems, animals shall be less stressed hence less likely to suffer illness, leading to less dependency on antibiotics.

Responsible use of antibiotics means that animals should only be treated when sick. Self-medication of animals on the advice from other farmers, or by calling or visiting agrovet shops without the animal being physically examined to diagnose the actual problem, should be strongly discouraged.

Treatment should only be instituted after clinical examination of the affected animal(s) by a competent and licensed veterinary practitioner and the offending organism being isolated and identified in a laboratory. During treatment one should ensure that an animal gets the full recommended dose and that the withdrawal period is adhered to. The withdrawal period is when the products (milk, eggs and meat) from an animal on antibiotic treatment are not consumed. Failure to observe this results in detectable high levels of antibiotic residues in the meat, milk and eggs which end up in the human food chain.

Antibiotics should never be used as growth promoters, or on routine basis (including repeated prophylactic use), to enable animals to be kept in poor welfare conditions.

We are also concerned about the generally poor



## ANTIMICROBIAL RESISTANCE

preventable infections or even allowing unfettered access to their animal barns for instance can have adverse impact which will only be realized when the next hospital visit with a simple pneumonia will not be cured leading to prolonged hospital stays and even mortalities.

The middle men (vendors) likewise need to understand that adulteration of milk with penicillin and Hydrogen peroxide to lengthen the shelf life will



Fig 1: A veterinarian training small scale dairy farmers on safe and quality milk production as a means to reduce infections and therefore curb unnecessary use of antibiotics.

sooner or later catch up with them when serious allergies occur during treatment with penicillin and its derivatives in the hospitals.

What does this therefore mean?

That though documents are good guides in any undertaking, if whatever is outlined in these documents does not effectively get down to the intended implementers and users, then the objectives will remain as black writings against a white background or any other colour with no impacts realized in the long run and therefore maintenance of status quo. Focus should therefore be geared towards where the 'rubber meets the road', that is the National Action Plan implementing stakeholders and users with each targeted with relevant information that they can understand in order to play their role of AMR fight to the best of their capability.

Fig 1: A veterinarian training small scale dairy farmers on safe and quality milk production as a means to reduce infections and therefore curb unnecessary use of Antibiotics.

### References

1. <https://www.who.int/antimicrobial-resistance/en/>- Online accessed on 11/12/2018
2. Republic of Kenya-NATIONAL ACTION PLAN ON PREVENTION AND CONTAINMENT OF ANTIMICROBIAL RESISTANCE, 2017 -2022.

### Key facts on antimicrobial resistance

- \*Antibiotic resistance is one of the biggest threats to global health, food security, and development today.
- \*Antibiotic resistance can affect anyone, of any age, in any country.
- \*Antibiotic resistance occurs naturally, but misuse of antibiotics in humans and animals is accelerating the process.
- \*A growing number of infections – such as pneumonia, tuberculosis, gonorrhoea, and salmonellosis – are becoming harder to treat as the antibiotics used to treat them become less effective.
- \*Antibiotic resistance leads to longer hospital stays, higher medical costs and increased mortality.

## THE KENYA VETERINARY ASSOCIATION, DONKEY WELFARE PROJECT

*Article by Dr. Richard Barasa, Dr. Samuel Makumi, Ms. Jane Lasoi and Mr. Justus Keton.*

### **Introduction**

The Kenya Veterinary Association (KVA) is a professional membership organization for all veterinarians in Kenya in both public and private sectors registered under the societies Act Cap 108 of the laws of Kenya.

In June 2013, The KVA entered into partnership with Brooke East Africa (BEA) to fund her to implement a donkey welfare project (DWP) in Kajiado County.

Brooke East Africa is a charitable organization with headquarters in United Kingdom. Its work is to raise resources and channel them towards the work of alleviating suffering of working equines i.e. horses, mules and donkeys. In Kenya, BEA offices are at upper hill, Taj towers, Nairobi.

The donkey welfare project has three thematic areas namely:

- Advocacy
- Veterinary Service provision
- Community engagement

The project has four staff — two veterinarians and two community development officers with an office at Isinya in Kajiado East Subcounty. It has presence in Kajiado North, West, South and East Sub counties.

The project's objectives are based on the above thematic areas and include:-

- Improving quality and accessibility of services directly affecting welfare of working equids
- Initiating positive change in knowledge, attitudes, behaviour and practices amongst equine owning communities
- Advocating for increased attention to the importance of working equine welfare as reflected in the National policy and development agendas.

### **Advocacy**

KVA made significant steps in advocacy programs within the DWP Project as follows.

- Development of Kajiado County Animal Welfare bill- KVA worked closely with the county government of Kajiado to develop an Animal Welfare and protection bill for the county through formation of a task force to spearhead the process. The bill is now ready to be presented to County assembly.
- Inclusion of Kajiado County Animal Welfare and protection bill in the County Integrated development plan for the year 2018-2022.
- KVA has been a critical part of the Alliance of Donkey Welfare Organizations of Kenya (ADWOK) which was launched in December 2018. ADWOK has worked closely with Directorate of Veterinary Services and is in the process of developing a donkey value chain strategy.
- The project has supported the discussions on the animal welfare and protection bill with a final stakeholder meeting held at Milele hotel on 14th March 2019 to expose and get inputs from the counties.
- The County government of Kajiado now considers the donkey among other livestock in her disease control programs. Donkeys have been included in the anti rabies vaccination programs.
- The national and county government has also taken an active role in curbing theft and illegal slaughter which had threatened the extinction of donkeys and loss of livelihoods to the donkey owning communities. The chiefs, ward representatives and county administrators have been very active in working with the communities to minimize this vice.

### **Veterinary Service Provision**

The project provides equine veterinary services indirectly and directly.



*Members of Linda punda Ushinde competition panel, an initiative to curb donkey theft pose for a photo after an interview session with donkey owners officials at Masai Cultural hotel in July 2017.*

**Indirect Veterinary Services;**

The project officer is in charge of animal health service provision arm of the project. In this regard the officer is responsible for recruiting private and public animal health service providers in the cadre of vets and paraprofessionals for training on equine medicine.

The project has 52 recruited animal health service providers and 25 of them on a mentorship program known as 'Animal Health Mentorship Framework'. These are practitioners who have been enrolled in the project whose veterinary competencies are improved through one on one experience during handling of donkey and non donkey cases. The process basically follows clinical reasoning from history of the patient up to advice after treatment.

This model entails scoring against specific competency areas using either a 1 or 0.

Also there is an aspect of training of the practitioners to improve on their skills and scope of equine veterinary medicine.

This model therefore seeks to improve competencies of veterinary practitioners especially around equine medicine



*Dr.Kirimi a local service provider in Kitengela treats a donkey in June of 2018 during a mentorship program (animal health mentorship program).*

to carry out their practice confidently.

**Direct veterinary service provision**

Whereas the larger percentage of the veterinary component of the project is indirect, there is a small percentage where the service is direct. This is where vets respond and attend to donkey cases.

Direct veterinary service is undertaken by project staff during donkey emergency cases among them;

- Road traffic accidents (RTA) with consequences like fractures
- Poisoning
- Colic
- Dystocia.

Project vets respond by attending to such cases and providing first aid pending either referral to other practitioners or in such worst instances euthanasia of the affected donkeys. The aim in most cases is to relief pain and discomfort witnessed in affected donkeys.

The project also works closely with agro vet owners and attendants to capacity-build them around effective agro vet service delivery using a tool called ‘Agro vet Quality Monitoring’. Through such interactions awareness on equine drugs is created and also compliance with regulatory bodies like Kenya Veterinary Board (KVB) and Veterinary Medicine Directorate (VMD) is enforced.



*Dr.Barasa in a green lap coat injects a pain relief drug to a mare after dystocia. Local service provider Mr.Kinyanjui helps restrain the mare at Konabaridi in November 2016.*



*Dr.Barasa on the left during agro vet quality monitoring exercise at Oleng'arua agro vet in Sultan Hamud on 31st May 2018*

## KVA PROJECT

### Community engagement

The project works with 66 community groups from four sub-counties (East, Central, west, north) in Kajiado County. The approaches that have been used to reach the above communities are:

- Building the capacity of donkey owners to form cohesive groups
- Training on animal welfare on issues like handling, hoof care and making proper halters among others.
- Peer to peer learning which has been effective in adult learning
- Market outreaches where there is a lot of interaction with the public.
- Field days/joint forums which brings together donkey owners and users with local service providers
- National donkey day celebrations
- School pupils (donkey care clubs). This conveys donkey messages to parents through pupils.
- Chief baraza especially when visiting new areas.

The project has successfully linked forty groups to the financial institutions like youth enterprise fund and other Non-governmental organizations for both financial support and capacity building. Six groups got direct support from KVA/ Brooke on income generating activities and this has improved the livelihoods. A youth group in Oloolotikoshi, Shammah donkey owner's self-help group owns a water project that they supply to the neighborhood. Imparkeneti women group in Mashuuru are running a crop farming project on tomatoes.

Three groups won financial prizes through a competition on donkey protection-Linda punda Ushinde. The project has also funded Olio rum primary school through DCC to establish a drip set for irrigating kitchen garden for the school's nutritional program. The school plants vegetable in the garden. To make sure donkeys and other live-stock also get free access to clean water, the project in collaboration with other stakeholders (TANATHI, Good Hands, and Kajiado County) drilled bore hole, constructed livestock water trough and piped water to the trough at Ormiton village, Kajiado Central Sub County.



*Modern donkey cart  
Courtesy of KVA-DWP/  
Brooke EA being handed  
over to Shammah donkey  
owners' group  
At Birika on 26th Febru-  
ary 2019. In the picture  
is BEA programs officer  
Mr. Elijah Mithigi, KVA-  
DWP project Man-  
ager Dr. Makumi, CDO  
Ms. Lasoi, KVA NEC  
member Dr. Muchibi and  
community members.*

*Community during handing  
over of the water trough  
constructed by KVA-DWP  
in Ormiton Kajiado Central  
Sub County on 26th Febru-  
ary 2019.*



## THE KENYA VETERINARY ASSOCIATION GETS A NEW COUNCILLOR TO THE COMMONWEALTH VETERINARY ASSOCIATION

Following the elevation of Dr Christopher Wanga (PhD, EBS) to serve as the Regional Representative (RR) for the Commonwealth Veterinary Association (CVA) East, Central and Southern Africa (ECSA) Region commencing 2018 during the Golden Jubilee Anniversary of the CVA in April 2017, the KVA has identified a replacement. The new Councillor for Kenya 2019–2022 will be another former Chairman of the Kenya Veterinary Association (KVA), Dr Victor Yamo.

Dr Wanga is currently the Chairman of the Kenya Veterinary Board, Acting Director of the Livestock Policy Research and Regulations Directorate State Department of Livestock, Ministry of Agriculture, Livestock and Fisheries, Kenya and former Chairman of the KVA during which period he won the inaugural World Veterinary Day Award in 2008.

Dr. Victor Yamo is the Campaigns Manager, Animals in Farming at World Animal Protection and Council Chair, Kenya Veterinary Association. Hence this appointment allows Dr. Yamo the opportunity to drive animal welfare agenda within Kenya ensuring that the productivity of the farm animals is tied to their welfare.

The CVA is made up of national veterinary associations or approved bodies of Commonwealth countries, and also some non-Commonwealth countries where membership is deemed to be of value to these countries termed as the Member Countries. National veterinary associations pay a membership contribution based on the number of veterinarians they represent but also tailored somewhat according to what they can afford. Support is also solicited from various outside organisations particularly when it can be associated with a particular project.

The mission of the Commonwealth Veterinary Association is to promote the veterinary profession within and outside the Commonwealth by encouraging the highest professional standards of education, ethics and service in order to advance animal health, productivity and welfare to improve the quality of life of all its peoples.

There are six regions of the CVA representing:

- Asia
- Australasia/Oceania



*Dr Christopher  
Humphrey Wanga  
(PhD, MBA, MPH& E,  
BVM) OGW MBS EBS*



*Dr Victor Yamo  
(BVM, MBA, MKIM)*

- Canada/Caribbean
- East, Central and Southern Africa
- West Africa
- UK/Mediterranean

Each Regional Committee elects a Regional Representative who becomes a member of Executive Council of the CVA.

Dr Wanga is credited during his reign as Councillor for having led the Kenya in successfully bidding to host the Golden Jubilee Celebration of the CVA on Kenyan soil and leading a successful celebration. Subsequently the KVA and the CVA jointly held an International Scientific Conference at Safari Park Hotel, Nairobi, Kenya between 26th and 28th April, 2017 and thereafter marked the World Veterinary Day Celebrations in Kajiado.

The theme of the Celebrations was '50 years of Veterinary Contribution to Sustainable Livelihoods and growth in developing economies'. This event created an opportunity for Kenya to showcase the role the veterinary practice had played globally for humanity since advent of the profession over 250 years back and for the KVA/CVA during the past 50 years of existence.

The KVA through the National Chairman, Dr Kahariri, wishes Drs Wanga and Yamo well in their new assignments.

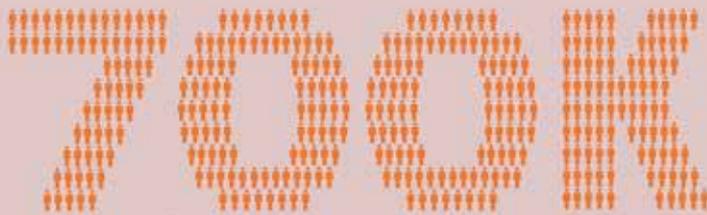


Irresponsible and excessive use of antibiotics is a real and present danger to animals, people and the planet.

**131,000** tonnes

of antibiotics are used every year across all animal farming.

- Massive overuse creates conditions ripe for superbugs: Bacteria that cannot be treated with medicine.



people die from superbugs each year

© World Animal Protection / The battle of factory farming | global report 2019



- Factory farming uses antibiotics as a band aid to prevent stressed animals getting sick.

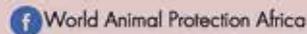
**3/4**

of all the antibiotics used in the world are used in farming

- Superbugs enter the food chain via the meat we consume.

overuse > superbugs > food chain > human health

High welfare systems lead to more robust, less stressed animals with reduced need for antibiotics. Safer for animals, people and the planet.



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### Word Search Puzzle

Created by  
Dr Isaiah N Chacha

S	T	E	C	A	R	D	N	A	L
A	K	F	R	D	F	S	G	N	A
D	A	E	A	R	Z	I	D	I	R
D	O	K	U	V	U	A	R	A	G
L	H	A	M	P	S	H	I	R	E
E	N	R	X	M	N	O	O	T	W
B	M	U	M	C	S	C	J	E	H
A	P	Q	O	U	D	I	L	I	I
C	Y	U	D	L	F	E	R	P	T
K	D	W	T	S	H	P	Q	Y	E

Identify as many pig breeds as you can. The words may flow in any direction. Answers are on page 17.

## The Key That Unlocks Your Destiny

*"Without discipline, there is no life at all."  
- Katharine Hepburn*

Remember being disciplined by your parents when you were a kid? Wasn't much fun was it? Remember the anger? The hurt? The sweaty palms, stomping feet, teary eyes and churning stomach?

For some reason, discipline never made my "Top 10 Favorite Past Times" list. Did it make yours? Discipline, for many of us, is a rather scary word because it is associated with pain. Often discipline requires us to leave our comfort zone and venture out into areas that make us feel tremendously uncomfortable. But, discipline, is one of the greatest keys to success that we possess.

Harry S. Truman, was quoted as saying, "If I want to be great, I have to win the victory over myself through self-discipline." He understood that victory starts within. More importantly, he understood that self-discipline is in fact the key to life itself. We all know what keys are for. We have no problem knowing how to use these keys to unlock our car, home or office. But do we know how to use the keys that will unlock abundant life for us? Unfortunately, most of us have never been taught how to use these keys, or what we should expect to experience from using them, yet this information is so vital.

There are many people who have given up on achieving their destiny through self-discipline simply because they did not understand what using the key would cost them. As soon as things got tough, and their pretty, fluffy, perfect, "no effort" dream came crashing down to cold, stark reality, they gave up because it was not what they expected. Don't be one of those people. Make sure you understand the following before you embark on using the key of self-discipline to unlock your destiny.

### 1) It's going to hurt

Understand that using the key of self-discipline is painful. Sorry, there is no way around this. If you are committed to your dream, you better make friends with pain...that means doing things you do

not naturally want to do. Keep in mind however, that it is pain with purpose. This is much less painful than pain without purpose.

### 2) It might bring out the baby in you

Understand that at first, using this key might rise up emotions in you that are pretty similar to the sweaty palms, stomping feet, teary eyes, churning stomach, and anger you experienced with discipline as a child. Remember, discipline is like a muscle that gets stronger with use. The more you use it, the more the child in you will learn to accept and live with it.

### 3) It will require you to start small

Rich DeVos, multi-billionaire and co-founder of the Amway Corporation said, "Before you set out to clean up the world, first, clean up your room." Most of us dislike small beginnings. We want the big things....now!! But learning self-discipline in the little things is what will pave the way to big successes.

### 4) It's YOUR key, no one else's

Understand that you alone have exclusive rights to this key. Only you can use this key to unlock greatness in your life, so quit looking for someone else to use it for you. Remember, it is not anyone else's responsibility to make you successful. It is up to you to plan your destiny and follow a dot-to-dot plan to success. Delays will happen, unexpected situations will arise, it will be hard, but press on.

### 5) It will require you to quit lying to yourself

"The truth will set you free" - John 8:32 ....and the truth is.....your past does not determine your future, nor does it have anything to do with using this key. You are as worthy of success as anybody. You are "good enough!" This key has the power to override a negative past, so use it. Whatever your definition of success....slowly, surely, you can reach your destiny through self-discipline.

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