

Food is one aspect, but safe food is crucial

The Covid-19 crisis has magnified the incredible public health challenge our world face. Nowhere is this challenge more apparent than in food production. In this time, it is ever more important that people understand that livestock production is a regulated, monitored system with food safety and public health at its core. The knowledge and expertise of the livestock sector can help strengthen the global Covid-19 response and tackle the growing risk of nutrition insecurity.



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"Ensuring the safety of food products is a key challenge, globally," states Dr Peter Oberem, managing director at Afrivet. "For this purpose, it is essential to act during all the stages of the food chain, from production at the farm to consumption by humans and animals."

In the context of the increasing demand for animal protein, controlling the pathogen agents at their source, i.e. farm animals, is the best way to protect human health. In fact, many sanitary risks exist before animals are slaughtered or during the transformation phase from animal to meat product.

These risks can be reduced or prevented by policies on prevention emanating from standards and best practices prescribed by the World Organisation for Animal Health (OIE) and the Codex Alimentarius. Most countries also have stringent laws in place such as the Meat Safety Act (Act 40 of 2000). This act is there to promote the safety of meat and animal products by laying down and maintaining essential national standards. The department of health is also involved further down the chain.

What threatens food safety?

We tend to take safe food for granted. However, foodborne diseases which encompass a wide spectrum of illnesses are a growing public health problem worldwide, especially amongst the very young and very old. "Foodborne diseases can be of any source," says Dr Peter Oberem. "An example is if people with Listeriosis were to process and/or pack meat there is a possibility that they could infect the meat."

A staggering number of the human population fall ill as a result of ingestion of foodstuffs contaminated with bacteria, viruses or parasites. According to the [World Health Organisation \(WHO\)](#):

- Every year about 600 million (almost 1 in 10 people in the world) fall ill after eating contaminated food.
- More than 400, 000 die every year because of foodborne diseases.

Zoonotic diseases are those diseases which transfer between humans and animals. It is not necessarily spread through food, but it can be spread via food. These diseases tend to be spread more readily in areas where intensive animal production takes place. There is a higher risk of the prevalence of these diseases in areas where there is close association between massive numbers of people and massive numbers of animals, like in China.

"There are many examples of zoonoses," explains Dr Peter Oberem. "Bovine tuberculosis, and even human tuberculosis, is when two different species of Mycobacterium spread from humans to cattle and from cattle to humans. Rabies is another example where if a human is bitten by a rabid dog and the virus is transmitted in the saliva of a dog to the victim, the latter will also develop rabies. Many parasites, especially tapeworms, have an animal to human lifecycle and so pass different stages of the parasite from one to the other. The pig tapeworm, taenia solium, can also infect humans and often results in epilepsy in children that are infected."

The [OIE reports](#) that:

- 60% of existing human infectious diseases are zoonotic.
- At least 75% of emerging infectious diseases of humans have an animal origin.
- Five new human diseases emerge every year, three are of animal origin.
- 80% of agents with potential bioterrorist-use are zoonotic pathogens.

This emphasises the importance of medical and veterinary professions to work together. Very often, controlling the disease in the animal population will lead to a decrease in human cases. A good example of this is rabies.

How do we control diseases from farm to plate?

One Health is the interface where animal, human and environmental health intersect and is a platform that encourages a collaborative approach to problem solving. Individual disciplines such as human medicine and animal healthcare are important, however, they are not mutually exclusive, and it is counter-productive for these professionals to operate in silos.

Vets play an important role in ensuring food security as well as food safety. Farm animal vets assist farmers in optimising the productivity of their herds and ensuring that the protein produced by our farmers is safe for the consumers. Companion animal vets play their part too, such as by vaccinating dogs against rabies on a regular basis.

Traceability in the entire production chain – from farm to plate – is another necessary aspect for food safety. **According to the OIE standards, traceability has four main elements:**

1. The identification of animals or groups of animals.
2. Tracing animal movements.
3. Identification of premises where animals/products are kept.
4. A register that stores all this information and makes it available when required.

This concept is captured in a livestock identification and traceability system (LITS). There are several reasons why such a system will be to the advantage of the livestock industry. The main components, as stated by international bodies such as the OIE, are disease prevention and control, food safety and overcoming unfair trade barriers.

The 2019 foot-and-mouth disease outbreak is a powerful illustration of the importance of traceability. With a system in place, the state would have been able to determine the origin of the infected animals more rapidly, as well as pinpointed any animals that had been in contact with them more readily.

Moreover, local consumers want to know exactly where the animal products come from. Treatment records of individual animals, or groups of animals, can be useful to feedlots and abattoirs by making accurate information available regarding medicine withdrawal periods to determine whether meat is safe for human consumption. It can also be useful to ensure that there are no chemical residues in the meat, milk and fibre for human consumption and use.

Is there a link between livestock and the spread of Covid-19?

There is currently no evidence to support transmission of Covid-19 associated with food. Food safety authorities are seeking more information on the potential for persistence of SARS-CoV-2, which causes Covid-19, on foods traded internationally as well as the potential role of food in the transmission of the virus. The coronavirus is generally thought to be spread from person to person, through respiratory droplets. The precise origin of Covid-19 remains under investigation, but ongoing research continues to confirm that domestic livestock production is safe and has not played a role in the spread of Covid-19.

The solution: for society to support the efforts of livestock farms and the value chain, and tap into their knowledge

Food safety, and ultimately food security, is a responsibility that we all share. Government must ensure safe and nutritious food is available for all people. However, government cannot protect consumers from the consequences of their own actions.

“In general, South Africans should become more food safe, as it is the best prevention strategy,” reveals Dr Peter Oberem. Rabies, brucellosis, tuberculosis, tapeworm infestations, including neurocysticercosis, are some of the most critical zoonotic diseases that we have in South Africa. Like the coronavirus, these diseases can be managed if consumers implement the One Health concept including the diagnosis and control of these diseases in animals and strict hygiene and food safety measures.

Consumers need to take responsibility and become informed and knowledgeable about food issues in order to make selective food purchases and practice the necessary safety requirements when handling, preparing and storing food. Consumers can be more food safe by:

1. Washing hands regularly, with soap and water, and thoroughly between handling raw and cooked food.
2. Using different chopping boards and knives when working with raw meat, vegetables and cooked food.
3. Not eating sick animals and/or animals that have died of diseases.

4. Cooking all meat thoroughly before consumption.
5. Not consuming unpasteurised dairy products if the brucellosis and tuberculosis status of the farm of origin is not known.
6. Ensuring that food products are bought from reputable sources.
7. Washing hands thoroughly with soap and water after using the bathroom.

In addition, agriculture and food producers need to adopt good practices and business operators must make sure the food they supply is safe. All consumers have a right to safe, healthy, and nutritious food.

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