

V-Mail

Animal Health and Production Newsletter

Winter 2010

This newsletter contains important information direct from your veterinarian, on animal health and production on a regional and national basis.

This newsletter is the first newsletter arising from the need to promote a closer association between the veterinarian and his client, the farmer, and to assist the farmer to know what specific disease threats are facing him and what are the best solutions available to him at the time.



In this issue

- The prevalence of Rift Valley Fever
- The disease development process
- Disease observation and reporting
- Creation of a vaccination program
- Identified disease problems

The prevalence of Rift Valley Fever

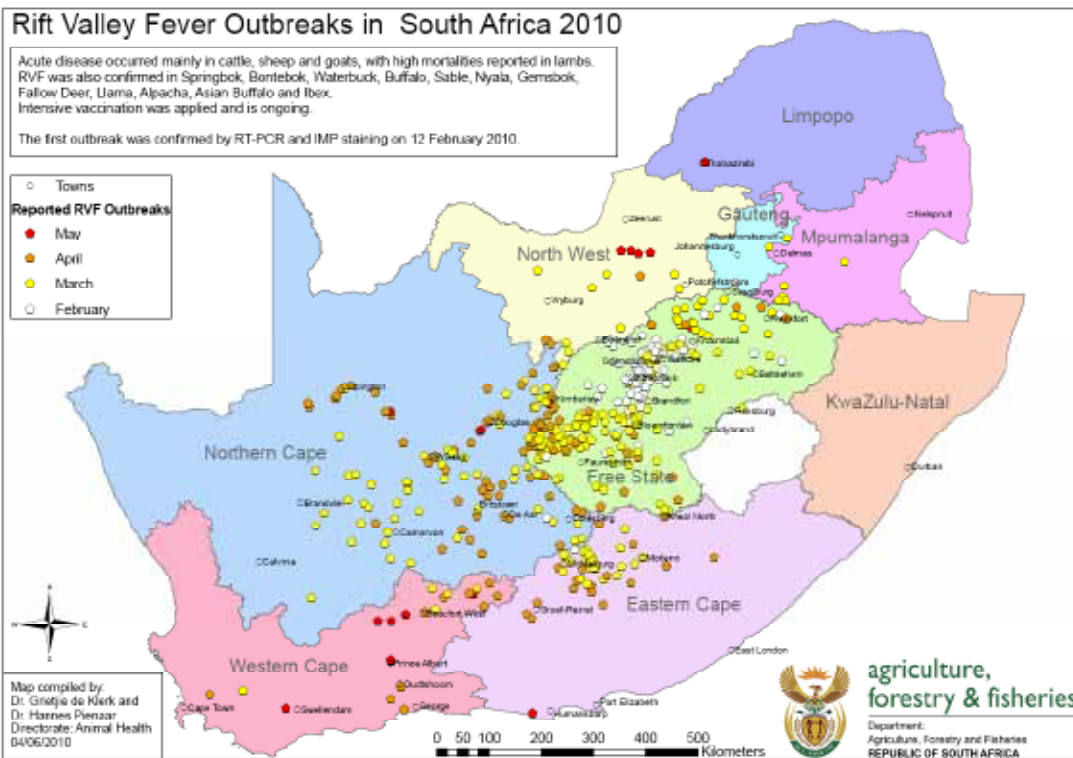
Rift valley fever was responsible for numerous large animal losses and deaths during this year

The disease was also transmitted to humans that came into contact with diseased or dead animals

Many farmers, farm workers, hunters and veterinarians were infected and some have died due to the disease.

The tragedy is that the disease can be prevented if the animals are vaccinated as a preventative measure.

We have learnt a lot from this outbreak of Rift Valley Fever. It has become very clear that a direct and regular communication channel is needed between the local veterinarian and local livestock producers. **The more than 300 veterinarians that are working in the country areas, have direct contact with about 40 000 stock farmers to whom they supply animal health services.** The purpose of this newsletter is to open the communication channels and to make a contribution to animal health in Southern Africa.



When the first cases of Rift Valley Fever occurred this year, it was obvious that there were big differences in how animal producers reacted to disease warnings. Some producers reacted very quickly because they already had a disease prevention program in place, while others only reacted after the disease started to take its toll.

It took veterinarians that already had good communication structures with their farmer, up to 3 years to get all the farmers on their programs to follow a vaccination program and to vaccinate all their susceptible animals. When a disease prevention approach is followed, it is important that all the basic principles of disease prevention are understood and implemented. The basic principles of disease prevention will be explained in the next section of this newsletter.

Disease prevention strategies rely on the farmer understanding the disease development process, good disease observation and reporting, the creation of a tailor-made vaccination with the local veterinarian programme and being aware of the various threats which face our livestock timeously.

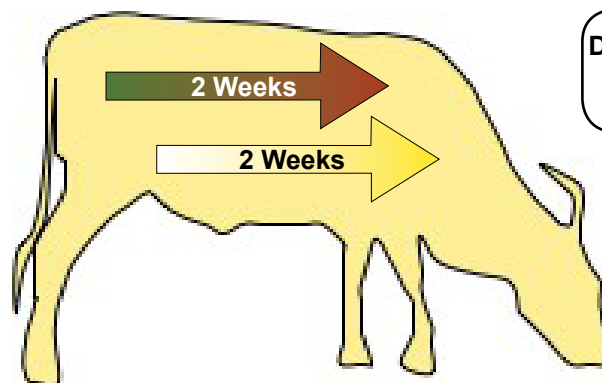
The disease development process

When an animal is infected, there are 2 processes that happen simultaneously. Below, Lumpy Skin Disease (viral disease) is used to explain the two processes.

Damage caused by the disease causing organism

The virus is transmitted by a biting insect. The virus moves to the target cells (skin and mucus membranes in this case) and start to reproduce inside the infected cells. In the process target cells are destroyed and the virus moves into healthy cells to multiply further.

In the case of Lumpy Skin Disease it takes about 2 weeks before there are enough viruses present to cause visible signs of the disease in the animal. The animal is now sick with visible lesions all over the skin and in the mucus membranes, which are not visible.



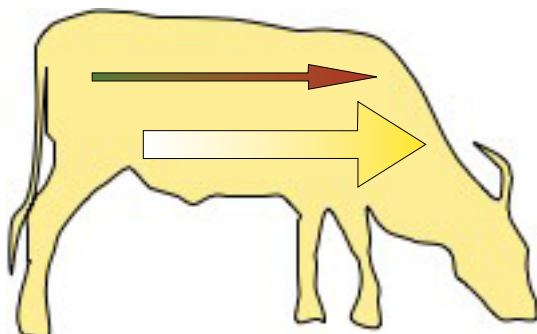
Development of immunity against the disease causing organism

When the virus enters the body it is identified by the large white blood cells as a foreign body (antigen). The virus is now absorbed by the large white blood cells and broken up into pieces. The pieces are then presented on the surface of the large blood cells,

Smaller white blood cells (lymphocytes) read the code off the pieces and get activated by it. They then split and form antibodies against the specific virus, white blood cells that will destroy infected body cells and memory cells. **This process will take about 2 weeks.**

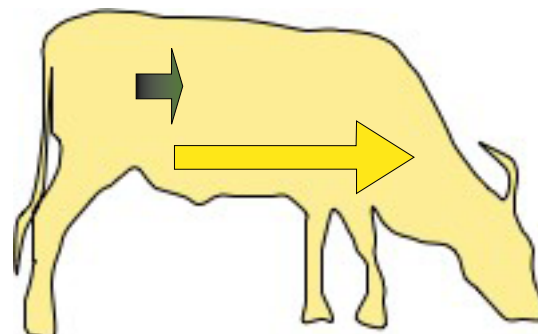
The problem is that by the time that the immune system starts to destroy the disease causing organisms the damage has already been done. In cases where the disease causing organisms multiply faster, like in Rift Valley Fever and Quarter evil (blackleg) losses and deaths will occur long before the animal can develop immunity against the disease.

What is achieved with the vaccination of livestock



The animal is vaccinated with a weakened viral strain. If it is a live vaccine like lumpy skin the virus will split but will cause minimal damage. The immune system will be activated and within 2 weeks the animal will have immunity against the specific disease. With time the active immunity will subside but there will still be memory cells present that will identify the virus immediately as it enters the body in future.

Exposure of a vaccinated animal to the specific disease causing organism



When an animal that was vaccinated with lumpy skin gets bitten again by a carrier insect, the memory cells will immediately identify the virus and antibodies will be formed. The viruses will be traced and destroyed within days, before any damage can take place. The active immunity will also be strengthened and will be present for the rest of the season while the exposure to the disease is at its highest level

The Challenge

Every disease causing organism differs in accordance to the period over which the disease will develop after exposure. Certain organisms can split and multiply without triggering the immune system. Other can be present for months in the body without multiplying. Specific conditions (like pregnancy) will give rise to them multiplying and the damage that it will cause.

Diseases that can only be prevented or controlled by vaccination

1. Diseases that develop quickly and where treatment in most instances is too late - like Quarter Evil
2. Diseases caused by viruses and where no treatment is available
3. Diseases that cause production losses and that can not be controlled by treatment.

Disease observation and reporting

To be able to get a better overview of the diseases that occur at farm level, a new project was launched in April this year, whereby veterinarians will keep record of all the most important causes of diseases that were responsible for deaths and production losses in their practice area.

This information will be processed at a central point and the veterinarian will receive a monthly report of all the observations made. This disease report is in addition to reporting by the state veterinarians, and the focus on the problems and diseases that occur on farm level.

Veterinarians in the country areas are continuously busy with herd visits and emergency cases. This review of diseases that occur on a regional and national basis will give veterinarians the opportunity to offer a better and more complete disease prevention service to livestock farmers

TENDENCIES ALREADY IDENTIFIED

- **Shortage of specific vaccines (Redwater, ORF and Enzootic Abortion)**
- **The spreading of diseases into areas where they did not occur previously e.g. Heartwater, Redwater, Swelled Head and Johnne's disease**
- **Basic diseases that still occur because the vaccination protocol is not followed e.g. pulpy kidney and pasteurellosis**
- **Feed related diseases due to drought feeding e.g. acidosis for which a new treatment and prevention product has recently arrived on our market**
- **Increased risk of diseases that can be transferred from game to farm animals, e.g. Corridor disease.**

Creation of a “tailor made” Vaccination Program

The most important service that a veterinarian can offer stock farmers is to put a disease prevention vaccination program in place for each individual farm.

The veterinarian has the scientific knowledge on all the possible diseases as well as all the various vaccines that can be used.

It is important that stock farmers make an appointment with their veterinarian to discuss the diseases and have the program compiled.

This type of appointment will take about 1 hour and will involve the following:

1. **A short summary of the risk factors that can give rise to diseases on that specific farm**
2. **Summary of diseases that occur on the farm as well as the vaccinations already done as disease prevention on that farm**
3. **Identification of other diseases that are seen on regional and national level that may be a threat to the farm**
4. **Compilation of a vaccination program according to the production cycles for each age group. (Animal numbers per age group are needed for this program)**
5. **Supply of the correct, quality vaccines.**

Seasonal vaccination and order

Vaccination is a management action on a planned basis and therefore it is important for the veterinarian to remind farmers on a seasonal basis of the vaccinations that need to be done.

This will only be possible if the veterinarian was involved with the completion of the program. In this case the veterinarian will take the responsibility of reminding the farmer of the vaccinations that need to be done and will also assist with which vaccine to order.

Keep the cold chain

Unlike most other veterinary medicines, vaccines are very sensitive to temperature fluctuations and the effectiveness can be lost if the cold chain is not maintained at all times.

It is therefore important to order your vaccines from the veterinarian as the cold chain is well supported and checked on a continuous basis, even over weekends.

Early Disease Warnings

If a vet is involved with the vaccination program and the seasonal orders are handled by the practice, farmers can be assured that all important disease warnings will be sent through to them.

This service is invaluable for the stock farmer. Only veterinarians that are fully aware of the disease tendencies on regional and national level can deliver this service effectively.

Identified Disease Problems

REDWATER

The most important disease that was reported during the previous autumn on a national basis was Redwater, especially Asiatic Redwater, probably as a result of the favourable weather conditions leading to the spread of the vector ticks and a shortage of the vaccine from the only supplier.

In cattle this disease is responsible for more deaths and production losses than was caused by any of the other diseases seen during the Autumn.

There is no uniform approach in the management of or for the prevention of Redwater.

The Livestock Health and Production Group decided at their last meeting that a panel of experts on the disease needs to come together to investigate the situation.

Uniform principles for the prevention and handling of the disease will be put together and passed on to the veterinarians, during the next congress.

This information will also be shared with cattle farmers in this newsletter, or during farmer information days specifically arranged for this reason by the veterinarians.

RIFT VALLEY FEVER

If we look back into the veterinary reports of 1975 and 1976, we can expect to see the same tendency again next year. After the huge outbreak of Rift Valley Fever in 1975 large numbers of animals were infected during the following rainy season in 1976. The disease is carried over from one season to the next in the eggs that were produced by mosquitoes that fed on sick animals in the previous season.

We therefore expect that susceptible livestock that are expose to the disease in 2011, will lead to new outbreaks. (Consult your local veterinarian on preventative vaccination)

Contrary to scientific evidence, some question the safety of the current Rift Valley Disease vaccine. In response to this a new Rift Valley Fever Vaccine (clone 13) has been developed by the Pasteur Institute in France, which is safe for use in pregnant animals. It is currently with the Registration Authority and is not yet available.

Livestock farmers will be informed when this vaccine becomes available. However, we strongly recommend livestock owners vaccinate their cattle, sheep and goats with the current vaccines if they wish to protect their animals from the threat of RVF during the rainy season of 2011.



This newsletter is compiled by Dr Danie Odendaal and is brought to you by the Livestock Health and Production Group of the South African Veterinary Association

The information in this newsletter is for you to take note of but application of the information in this newsletter, should only be on the recommendation of your local veterinarian, who has the information about the region and the situation on the specific farm.



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