

Biosecurity BASICS

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When I ask the questions: “What is biosecurity?” and “Does anyone have examples of biosecurity measures?”, I usually get blank stares and averted faces at conferences and farmer days. Veterinarians like to use this word as the answer to all farming problems, but rarely do we go into depth as to what options or types of biosecurity should be applied.

The Oxford dictionary defines biosecurity as: “procedures or measures designed to protect the population against harmful biological or biochemical substances”. Millions of Rands are spent in South Africa on personal security, and justly so as can be deduced from crime statistics in South Africa. However, we should apply the same fervour in improving biosecurity on our farms. The recent outbreaks of Foot-and-mouth disease and Anthrax in Lesotho has reiterated the importance of implementing and maintaining good biosecurity, especially in the red meat industry.

The biosecurity topic is extremely broad, but here are a few basic aspects to consider when improving your biosecurity measures:

1. PERIMETER FENCE

What does the fence of your property look like? Is it in tact? Is it inspected on a regular

basis? Can animals leave or enter your property without you knowing about it? Is your perimeter fence adequate for the species being kept on the farm? A good perimeter fence is the most basic but still the most important component of biosecurity.

2. CAMPS ON THE FARM

If a property is subdivided into smaller camps it provides the farmer with the opportunity to move animals between different camps. This can be done before or after treatments against a disease or to facilitate rotational grazing. Different camps give you more management and biosecurity options.

3. QUARANTINE FACILITIES

It is important to have camps or facilities on your farm where sick animals can be quarantined. These areas should be easy to disinfect and a distance from the core herd. There should also be camps separate from the core herd where new animals that arrive on the farm, or animals that have returned from shows/auctions can be kept for a period of time to ensure that they are not bringing new diseases onto your farm or infecting your core herd(s). It is important to know which diseases pose a risk on your farm and then to keep animals in the quarantine facility for at least the length of the specific

incubation period. This can become complicated in diseases such as brucellosis, tuberculosis and Johne’s disease which have very long incubation periods.

4. ANIMAL IDENTIFICATION

There are various methods of animal identification. Branding of cattle and tattooing of small stock is enforced by the Animal identification act (Act 6 of 2002) in South Africa. These methods alone do not adhere to international trade standards and as was seen with the recent Foot-and-mouth disease outbreak, RSA needs a better livestock identification



and traceability system (LITS). Ways to improve this is to make use of visual identification tags, backed-up by thorough manual record keeping by the farmer; or, radiofrequency identification (RFID) or electronic identification (EID) tags can be used. The RFID/EID tags integrate with computer systems and so more data about individual animals are stored electronically. Afrivet and Datamars, have recently launched the AfriTag range which includes visual as well as EID tags.

Animal identification must also include temporary methods of identifying individual animals during treatment procedures, the colour marking crayons (elephant lipstick) for example. It will assist in identifying animals that were missed during a treatment. This is especially important when dealing with diseases such as Sheep scab. One animal that missed treatment sets the whole herd back 7 - 10 days and leads to unnecessary treatment costs.

5. WATER AND FEED SOURCES

Water and feed are important potential sources of infection and disease. It is vital that feed is procured from good resources. Pathogenic bacteria, fungi and toxic plants mixed in the feed can be consumed by animals. It is important to evaluate the source and quality of the water sources on the farm. *Cryptosporidium sp.* and other important pathogens can be transferred in water. There are several laboratories in South Africa that can determine the quality of water on the farm. Cleaning of feeding and drinking troughs are also important.

6. VACCINATION AND DEWORMING

There are several diseases in South Africa that are preventable by vaccination. Anthrax vaccination is enforced by law. However, there are numerous other important diseases such as brucellosis, bluetongue, clostridial diseases (e.g. blackquarter and pulpy kidney), respiratory diseases (e.g. pasteurellosis), lumpy skin



disease, but to name a few. Contact your local veterinarian to discuss which vaccines are of particular importance for your individual scenario. This will help prevent you from buying unnecessary vaccines, but also prevent you from losing animals to preventable diseases.

Apart from vaccinating animals, it is important to make sure that you adhere to the vaccine application instructions, storage and transport. In many instances vaccine failure is due to incorrect administration and failure of maintaining the cold-chain. If vaccine was purchased from a fridge it should stay cool during transport, with an ice-pack and be kept refrigerated on the farm. Stick to the protocol in the packet insert as far as possible.

Deworming animals is also an integral part of any farming and biosecurity programme. New animals can bring anthelmintic resistant worms onto your pastures. It is important to not just buy the cheapest dewormer at the cooperation. Before deworming the current worm burden should be determined. This is done by submitting faecal samples to your local veterinarian or veterinary laboratory. They will identify the specific type of worms as well as do worm counts. They can also identify coccidia on faecal egg counts. A week after deworming the test should be repeated to determine if the dewormer had the desired effect. This is called the faecal egg count reduction test. Looking at Famacha results in conjunction with other clinical signs before deworming will also decrease the unnecessary

overuse of anthelmintics. There is a new vaccine against wireworm available through your veterinarian - it is called Wirevax and forms part of a strategic worm control system. Contact your local veterinarian or Afrivet agent for more information.

7. DIPPING

Ticks transmit important diseases, such as redwater and corridor disease, and toxins, e. g. sweating disease, but also cause damage to the hides of animals. There are one-host and 3-host tick species in South Africa and the way in which they should be approached differs. It is important to do daily inspection for ticks. Dipping cattle every 7 days should be sufficient, but if adult/engorged ticks are seen during the 7-day interdipping period, one needs to re-evaluate the dipping products and methods.

There are different types of tick remedies and it is important to use the correct one for your problem. Tick greases can be used in ears of cattle with a brown ear tick infestation or can be applied to the affected feet of sheep with three-host tick burdens. Pour-on dips are good for mixed one-host and three-host problems. Make sure that the pour-on is applied from the poll of the animal. Plunge dipping with amitraz and/or pyrethroids would also treat both three- and one-host ticks.

Flies are insects that can also transmit disease, dipping



animals with deltamethrin containing products such as Deltapor 5, Deltapor 10 or Deltaforce 100 will assist in keeping flies at bay. Compost or dung heaps can be treated

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with insect growth regulators such as Novaluron which is found in Eradifly granular. These products are safe for wasps and earthworms. Environment-friendly fly traps, such as Flybuster buckets, also have a large impact on the adult fly populations.

8. FARMER, FARM WORKERS AND ANIMAL HANDLERS

People can assist in the transmission of various organisms. It is important to know where and how people are moving on the farm. It might be necessary to implement access control. If you cannot have separate teams of workers (one for the healthy animals and one for the sick animals) it is best to start work in the morning with the healthy animals and then move to the sick. Providing different coloured overalls for the different sections of the farm, is an easy way to see when someone is not where they are supposed to be. Disinfection of clothing and using foot baths when leaving areas where sick animals are quarantined helps. Ensure that staff use designated toilets and that they wash their hands appropriately afterwards.

9. VISITORS

Visitors should be given limited access to sensitive areas of the farm, e.g. visitors should not have access to young animals. They are more prone to disease and visitors can guilelessly contaminate the property. Veterinarians count as visitors; it is important that they do not bring diseases from other farms they have visited. Responsible

veterinarians will maintain good biosecurity between farms, but if you are concerned you can provide protective clothing for your veterinarian and other visitors which they can leave at your property.

10. RECORD KEEPING

None of these biosecurity methods will be worth the effort without good record keeping of any management practices. This includes vaccinations, deworming, dipping, visitors to restricted areas, etc. It will also improve management and production efficiency by identifying problematic animals, e.g. animals with chronic worm burdens despite appropriate treatment. These animals should be removed from the herd.

11. NEIGHBOURS

Good community buy-in is an integral part of biosecurity. Your best efforts come to nothing, if neighbouring farms are not applying biosecurity measures themselves.

12. VETERINARY RELATIONSHIPS

Have healthy relationships with your local state veterinarian as well as a private veterinarian and/or veterinary herd health consultant. State veterinarians will assist with information and training regarding controlled and notifiable diseases. It is law in South Africa to report the suspicion of any controlled or notifiable diseases to your local state veterinarian. If any controlled disease breaks out on your farm, the state veterinarian will assist you to bring the disease under control as soon as possible. This however requires cooperation from both parties. Your private veterinarian and herd health consultant will assist with the day to day issues, but also in the development of herd health programmes tailored to your individual farm's need. Having a good herd health strategy will curb expenses and improve production in the long run.

13. DISEASES

There are several so-called Trojan horse diseases present

in South Africa that are not that obvious to detect when animals are first bought. These include diseases such as tuberculosis, brucellosis and John's disease. They have long incubation periods, which means that the animals can take up to 2 years and longer to show symptoms, but in the interim the infected animals are infecting other animals and contaminating your property. By the time that the disease is detected a large proportion of the herd will be subclinically infected and it will take an extended period of time, at immense costs, to control the disease. Therefore, it is best to make sure that animals are purchased from reputable sources, accompanied by valid health certificates and if possible, vendor declarations. Annual testing for diseases such as tuberculosis and brucellosis should be part of basic farming practices, if not compulsory.

A foot-and-mouth specific biosecurity programme is available on the National Animal Health Forum's website (www.nahf.co.za). Biosecurity is not rocket science and simple aspects such as these will make a large difference in your farming system.

For more information and more integrated biosecurity measures suited to your individual needs, contact your private veterinarian who will be eager and ready to assist you in being more pro-active than reactive in disease prevention and production enhancement.

Deltapor 5 (G4252), Deltapor 10 (G4255), Delta force 100 (G4367), Eradifly granular (L10328), Wirevax (G4200)

