Monthly report on livestock disease trends as informally reported by veterinarians belonging to the Ruminant Veterinary Association of South Africa (RuVASA), a group of the South African Veterinary Association

March 2016

Previous disease reports can be seen on the RuVASA website www.ruvasa.co.za

Click on Disease Reports

The following practices and laboratories (134) submitted reports during March 2015:

Mpumalanga (13)
Balfour – Dr. Louis van Jaarsveld
Bethal – Dr. Hardus Pieters
Delmas – Dr. Johan Jooste
Ermelo – Dr. Ben Potgieter
Grootvlei – Dr. Neels van Wyk
Karino (Nelspruit) – Dr. Silke Pfitzer
Lydenburg – Drs. Trümpelmann and Steyn
Nelspruit – Dr. André Beytell
Middelburg – Drs. Fourie, Malan and Erasmus
Piet Retief - Drs. Niebuhr and Weber
Standerton – Dr. Kobie Kroon
Standerton – Drs. Nel, Swart, Van der Merwe, Van den Berg and Geral
Volksrust – Drs. Watson and Solomon

Gauteng (6)
Bronkhorstspruit – Drs. De Bruin, De Bruin, Rudolph and Slabber
Krugersdorp – Dr. Clare Speedy
Magaliesburg – Dr. Ryan Jeffery
Nigel – Dr. Cindy van der Westhuizen
Onderstepoort Veterinary Academic Hospital – Proff. Annandale, Prozesky, Shakespear, Holm and Drs. Esposito, Gratwick, Hamman, Harmse and O'Dell
Pretoria – Dr. Hanneke Pienaar

Limpopo (7)
Bela Bela – Drs. Du Toit and Herbst
Lephalale (Ellisras) – Dr. Brigitte Luck
Makhado (Louis Trichardt)– Drs. Harris, Klopper and Jacobs
Modimolle (Naboomspruit)– Drs. Huber, Bredell and Barnard

Mokopane (Potgietersrus) - Dr. Henk Visser
Polokwane (Pietersburg) – Drs. Watson, Viljoen, Jansen Van Vuuren, Van Rooyen, Snyman and Cremona
Vaalwater - Dr. Hampie van Staden

North West (10)
Brits – Drs. Boshoff and Coertze
Christiana - Dr. Pieter Nel
Klerksdorp – Drs. Van den Berg and Theron
Klerksdorp – Drs. Coetzee and Venter
Leeudoringstad - Dr. Ian Jonker
Lichtenburg – Dr. Fritz Ras
Lichtenburg – Dr. Nelmarie-Krüger-Rall
Rustenburg – Drs. Gaigher, Grobler, Sparks, Van Edom, Van Rooyen, Goosen and Van Rensburg
Stella - Dr. Magdaleen Vosser
Ventersdorp/ Koster – Drs. Marais and Benadé

Free State (25)
Bethlehem – Drs. Strydom and Strydom
Bethlehem – Dr. J.C. Du Plessis
Bloemfontein – Dr. Stephan Wessels
Bothaville – Dr. Johann Blaauw
Bultfontein – Dr. Santjie Pieterse
Clocolan – Dr. Liezel Wasserman (Marwick)
Dewetsdorp – Dr. Marike Badenhorst
Ficksburg – Drs.Kotze and Coetzer
Frankfort - Drs. Lessing, Cilliers and Janse van Rensburg
Harrismith - Drs. Pretorius, Bester and Nel
Hoopstad - Dr. Kobus Pretorius
Kroonstad – Drs. Daffue, Eksteen, Van Zyl and Van der Walt
Ladybrand/Excelsior - Drs. De Vos and Nel
Memel – Drs. Nixon and Nixon
Parys – Drs. Wessels and Wessels
Phillipolis – Dr. Stephan Vermeulen
Reitz - Dr. Murray Smith
Trompsburg/Springfontein – Dr. Wyn Irwin
Viljoenskroon - Dr. Johan Kahts
Villiers – Drs. Hattingh and Hauptfleisch
Vrede – Drs. Myburgh and Bester-Cloete
Vrede- Dr. Rudolph Fourie
Wesselsbron –Dr. Johan Jacobs
Winburg – Drs. Albertyn and Albertyn
Zastron – Drs. Troskie and Strauss

KwaZulu-Natal (19)

Bergville - Dr. Ariena Shepherd
Bergville – Dr. Jubie Muller
Camperdown – Dr. Anthony van Tonder
Dundee – Drs. Marais and Fynn
Eshowe – Drs. Pryke and Hoffman
Estcourt – Drs.Turner, Tedder, Taylor, Tratschler, Van Rooyen and Alwar
Greytown – Dr. Mike Caldicott
Ingogo – Dr. Trish Oglesby
Kokstad- Drs. Clowes and Shrives
Mooi River - Drs. Fowler, Hartley, Waterman and Mallet
Mtubatuba – Dr. Trever Viljoen
Newcastle – Dr. Barry Rafferty
Pietermaritzburg – Dr. Rick Mapham
Pietermaritzburg – Dr. Phillip Kretzmann
Pongola – Dr. Heinz Kohrs
Ulundi – Dr. Ben Muller
Underberg - Drs. Collins, King and Delaney
Underberg – dr. Pete Dommett
Vryheid – Drs.Theron and Theron

Eastern Cape (18)
Alexandria - Drs. Olivier and Dreyer
Alexandria – Dr. Thys Potgieter
Aliwal North/Zastron – Drs. Troskie and Strauss
Bathurst – Dr. Jane Pistorius
Colesberg – Drs. Rous and Rous
Cradock – Dr. Frans Erasmus
Cradock – Dr. Ilse Jenkinson
Graaff- Reinet - Dr. Roland Larson
Graaff-Reinet – Drs. Hobson, Strydom and Hennesy
Humansdorp - Drs. Van Niekerk, Jansen Van Vuuren, Barker and Kotze
Jeffreys Bay – Drs. Hoek, Lategan and McFarlane
Kareedouw- Dr. Marten Bootsma
Port Alfred – Dr. Leon de Bruyn
Queenstown - Drs. Du Preez, Godley, Klopper, Jansen van Vuuren, De Klerk and Catherine
Riversdale – Drs. Du Plessis, Taylor, Du Bruyn and Van der Merwe
Somerset East – Drs. Farrell, Louw and Rass
Stutterheim - Dr. Dave Waterman
Uitenhage – Drs. Mulder and Krüger

Western Cape (21)
Beaufort West - Drs. Pienaar and Grobler
Caledon – Drs. Retief and Rissik
Ceres – Drs. Pieterse, Wium, Freeman, De Villiers and Scheepers
Darling – Drs. Van der Merwe, Adam and Senekal

George - Drs. Strydom, Truter and Pettifer
Heidelberg – Dr. Albert van Zyl
Malmesbury – Dr. Otto Kriek
Malmesbury – Dr. Markus Fourie
Malmesbury - Drs. Bosman and Groenewald
Malmesbury – Dr. John Liebenberg
Malmesbury – Dr. N.J. Heyns
Oudtshoorn – Dr. Glen Carlisle
Oudtshoorn – Dr. Adriaan Olivier
Piketberg – Dr. André van der Merwe
Plettenberg Bay – Dr. André Reitz
Plettenbergbay – Dr. Stephan Nell
Riversdale – Drs. Du Plessis, Taylor and De Bruyn
Stellenbosch – Dr. Alfred Kidd
Swellendam – Drs. Malan and Venter
Vredenburg - Dr. Izak Rust
Wellington – Dr. William van Zyl

Northern Cape (7)
De Aar – Dr. Donald Anderson
Calvinia – Dr. Bertus Nel
Jan Kempdorp – Dr. Jan Brand
Kathu – Dr. Jan Vorster
Kimberley – Drs. Van Heerden and Swart
Kimberley – Dr. Trudie Prinsloo
Upington – Drs. Vorster and Visser

Feedlots (2)
Drs. Morris and Du Preez
Dr. Andy Hentzen

Laboratory reports (6)
Dr. Mark Chimes - Deltamune laboratory
Dr. Marijke Henton - Idexx SA Johannesburg
Dr. Liza du Plessis – Idexx SA Onderstepoort
Dr. Alan Fischer – Queenstown Provincial laboratory
Dr. Rick Last – Vetdiagnostix, Pietermaritzburg
Dr. Emily Lane – National Zoological Gardens

Summary of disease report for March 2016

134 Reports from veterinary practices and laboratories were received (Mpumalanga (MP) 13; Gauteng (G) 6; Limpopo (L) 7; North West (NW) 10; Free State (FS) 25; KwaZulu-Natal (KZN) 19; Eastern Cape (EC) 18; Western Cape (WC) 21; Northern Cape (NC) 7; Feedlots (FL) 2 and Laboratories (Lab) 6).

Prevention is better than cure

When studying the monthly disease reports one comes to the conclusion that most of the infectious diseases that were reported could have been prevented if animals had been properly vaccinated. Reports that struck me were: “70 cattle died due to blackquarter, animals were not vaccinated”, or “booster vaccination was not given”.

The aim of studying the monthly disease reports is to sit down with your veterinarian and draw up an **animal health management programme** for your farm taking into account what diseases were reported. **This programme should regularly be updated as new risks are identified!**

What is a vaccine?

A vaccine is a product that contains a dead or a live weakened disease-causing organism or toxic substance (agent). When the product is administered to the animal, the animal wil build up a resistance or antibodies against that specific organism or toxin. The immunised animal is then protected against the organism (disease) or poisonous substance (toxin) when exposed to it.

What is immunisation (vaccination)?

Immunisation is the process of administering a vaccine to an animal for protection against a specified disease. If the animal is protected against the disease for which it was immunised, it is then immune.

Vaccines

The use of vaccines for animals as a preventative measure, is based on the principle that the animal possesses the ability to build up protective antibodies and cellular immunity against disease-causing organisms or their products.

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The use of vaccines for animals as a preventative measure, is based on the principle that the animal possesses the ability to build up protective antibodies and cellular immunity against disease-causing organisms or their products.

The disease-causing organism or its product is altered in such a way (artificially, genetically or naturally) that it no longer causes the disease in the animal, but still has the ability to stimulate the animal’s immunity so as to protect it against that disease. The animal is then said to be “immune”, implying that the animal will not contract the disease for which it was immunised.

Development of resistance after vaccination

After a particular vaccine has been administered to an animal for the first time, it takes 14 to 21 days for antibodies that offer resistance against the disease in question, to develop. After administering a booster vaccination, be it after four weeks or one year, it generally takes 24 to 36 hours for the antibodies to increase dramatically in number, due to the presence of cells in the bloodstream that can ”recall” previous exposure.

Preventative measures and the use of vaccines

Carefully read the directions for usage written on the package insert and use the vaccine only as prescribed. Warnings regarding the use of the vaccine as indicated on the insert must be followed to the letter. For example, if pregnant cows or ewes are immunised against brucellosis (strain 19 vaccine) or blue tongue respectively, then cows may abort or abnormal foetuses may be produced by the ewes.

Equipment: Sterilise syringes and needles by boiling them in water for at least 15 minutes. Do not use disinfectants or methylated spirits to sterilise syringes and needles. Use a separate needle for each animal as far as possible. Should a number of animals be injected with one needle, disease-causing viruses or bacteria can be transferred from sick to healthy animals.

Vaccine: Shake the vaccine bottle each time before filling the syringe with vaccine. Vaccines which are mixed/prepared (such as lumpy skin disease) by mixing the freeze-dried material (pill) with water, must be injected immediately following preparation. Such a vaccine must not be stored in a fridge and used again after a day or two.

Sunlight: Avoid exposing the vaccine to high temperatures and direct sunlight in storage or when vaccinating. The sun’s ultra-violet rays damage and/or destruct the active agents in the vaccine. All vaccines are damaged by heat and care must be taken to keep vaccines cool during transport and use. A cooler with cooling/ice packs must be used for this purpose.

Mixing vaccines: Different vaccines, such as those for lumpy skin disease and blackquarter, must not be mixed in the same syringe. Vaccines must also not be mixed in a syringe with other preparations such as antibiotics, vitamins or deworming substances for vaccination and injection. When more than one vaccine is given at the same time they should not be be administered close to each other in the animal but preferably at both sides of the neck.

Protection of person who vaccinates the animals: Special care must be taken by the person who administers the vaccines to ensure that he/she does not accidentally inject him/herself, ingest vaccine or become contaminated with it through cuts or cracks in the skin, or mucous membranes. The live brucellosis vaccine poses a possible health risk for humans and must be handled with the utmost care, as infection with the anthrax vaccine can cause extensive localized swelling and discomfort. Infection with brucellosis vaccine can cause brucellosis (Malta fever). Consult your general practitioner, should you accidentally inject yourself.

Vaccination during disease outbreaks: Vaccination of animals during a disease outbreak will not immediately stem the course of the disease, as it takes 2 to 3 weeks before an immunity in the animals actually develops. Should an animal be immunised during the disease’s incubation period, it will still develop the disease and the vaccine will not prevent the disease from occurring.

Transfer of disease during vaccination: Ensure, if at all possible, that each animal is immunised with a separate sterile needle. Dirty (non-sterile) needles can transfer diseases such as lumpy skin disease, Rift Valley Fever and anaplasmosis if animals are immunised during the disease's incubation period. Especially during disease outbreaks, one must ensure that every animal is immunised with a separate sterile needle.

- Do not vaccinate calves or lambs of immunised mothers before the age of ten weeks. The colostrum-derived immunity will protect the calf or lamb, except where the product information indicates otherwise.

- Animals immunised for the first time with, for example, an inactive vaccine against blackquarter, botulism and malignant oedema, must be immunised again with the same vaccine three weeks after the first vaccination (booster vaccination) so as to ensure the development of a protective immunity.

- A small percentage of animals in a herd/flock (about 1%) may develop only a weak or no immunity after vaccination. These animals die if they are infected with the causative organism of the disease concerned.

Next month reasons why immunisation fails will be discussed.

Reference:
Du Preez, J.H. and Malan, F.S. 2012. Vaccines and immunisation of farm animals. AgriConnect. ISBN: 978-0-620-38932-7.
Hierdie boek is ook in Afrikaans beskikbaar en kan bestel word by helene@mpo.co.za

Internal parasites

The following reports were received from practices regarding internal parasite infestations:

Internal parasites	MP	G	L	NW	FS	KZN	EC	WC	NC
Roundworms	x	X	x	x	x	x	x	x	
Resistant roundworms	x	X		x	x	x	x	x	
Wireworm	x	X			x	x	x	x	x
Brown stomach-worm							x	x	
Large-mouthed bowelworm									
Nodularworm									
Lungworm									
Eyeworm					x				
Parafilaria		X	x			x			
Tapeworms	x	X		x	x	x	x		
Liver fluke	x				x	x	x	x	
Conical fluke	x			x	x	x	x	x	
Cysticercosis (measles)	x				x	x			
Schistosomiasis (bilharzia)									
Coccidiosis	x	X	x	x	x	x	x	x	

An increase in the number of animals affected by internal parasites was reported during March. Mortalities due to wireworm infestation were reported.

Be on the alert for signs indicating internal parasitism: anaemia, bottle jaw, weight loss and diarrhoea. Animals under stress and lack of protein and energy, are more susceptible to parasites.

As resistance of worms, especially wireworm, to many of the anthelmintic groups are reported, control and preventative measures against parasites should be discussed with your veterinarian to prevent serious losses of livestock.

External parasites

The following reports were received from practices regarding external parasite infestations:

External parasites	MP	G	L	NW	FS	KZN	EC	WC	NC
Blue ticks	x		x	x	x	x	x	x	
Resistant blue ticks	x					x			
Heartwater ticks	x	x	x	x		x	x		
Brown ear-ticks	x	x	x			x		x	
Bont-legged ticks	x	x	x	x	x	x	x	x	
Red-legged ticks	x		x	x	x	x	x		
Paralysis ticks	x				x	x	x		
Biting lice	x				x	x		x	
Sucking lice		x			x	x			
Itch mites						x			
Sheep scab	x				x	x	x		
Mange mites			x						
Nuisance flies	x		x		x	x	x	x	
Midges	x		x	x	x	x	x	x	
Mosquitoes					x	x			
Blowflies	x		x		x	x			
Screw-worm	x		x			x	x		
Gedoelstia (uitpeuloogsiekte)							x		
Nasal bot		x			x	x			

Reports of an increase in tick numbers were received. As many animals are in poor condition, bloodloss due to blue ticks taking in blood meals could result in serious losses.

In most areas severe infestations of brown ear-tick and bont-legged tick infestations were reported.

Be aware of wounds that are caused by ticks with long mouth parts (bont and bont legged-ticks) as the screw-worm fly lays its eggs in these wounds leading to myiasis (screw-worm larvae in wounds) and even deaths.

The *Gedoelstia* fly has its natural hosts as wildebeest, blesbok and hartebeest. It deposits its larvae in the eyes causing no harm. When it deposits its larvae in the eyes of cattle and sheep it will cause the disease known as uitpeuloogsiekte and these animals could lose an eye.

http://landbou.com/wp-content/uploads/2014/03/6cf916ed-771a-4cbd-9257-1b71e2531b17.pdf

Selection for resistant blue ticks are an ever increasing problem, discuss your ectoparasite control program with your veterinarian. Tick resistance to the various actives is increasing and it is advised that blue ticks on your farm should be tested for resistance!

Tick borne diseases

The following tick borne diseases were reported by practices in the provinces:

Tick borne diseases	MP	G	L	NW	FS	KZN	EC	WC	NC
African red water	x		x	x	x	x	x	x	
Asiatic red water	x	x	x		x	x	x	x	
Anaplasmosis	x	x	x	x	x	x	x	x	x
Heartwater	x	x	x	x		x	x		
Lumpy skin disease	x	x	x	x	x	x			
Corridor disease						x			
Theileriosis									

Tick borne diseases are rife due to tick numbers increasing during the summer months. Susceptible animals are also moved into red water and heartwater areas. Infected ticks are also transported with grass bales from infected areas. Vaccines are available to control most of these tick transmitted diseases. **Discuss preventative measures with your veterinarian.**

The following tick toxicoses were reported by practices in the provinces:

Tick toxicosis	MP	G	L	NW	FS	KZN	EC	WC	NC
Sweating sickness			x	x	x				

Sweating sickness is caused by the toxin secreted by the bont-legged tick. They like to attach in the tail brush and therefore this area should be treated as well.

Paralysis due to the toxin secreted by the Karoo paralysis tick was also reported.

Insect transmittable diseases

The following insect transmittable diseases were reported by practices in the provinces:

Insect transmittable diseases	MP	G	L	NW	FS	KZN	EC	WC	NC
Lumpy skin disease	x	x	x	x	x	x			
Ephemeral fever (Three day stiff sickness)	x	x		x	x	x	x		x
Blue tongue	x	x	x	x	x	x	x	x	x
Rift Valley Fever									
Wesselsbron									

Nagana						**x**			

An increase in the occurrence of insect transmissible diseases were reported. This was due to an increase of midges and biting flies which are carriers of viruses.

Do not neglect vaccinating animals! As good rains are forcasted for the next season, plan now to order vaccines in time.

Venerial diseases

The following venereal diseases were reported by practices in the provinces:

Venereal diseases	MP	G	L	NW	FS	KZN	EC	WC	NC
Trichomonosis	**x**	**x**	**x**	**x**	**x**	**x**	**x**	**x**	
Vibriosis				**x**	**x**		**x**	**x**	
Pizzle disease							**x**		

New cases of **trichomonosis** are reported every month and this disease is out of hand. This month it was reported that the disease was brought into the herd by buying in bulls. Make sure that you buy bulls from farmers where biosecurity measures are in place!

Make sure that fences are in tact and gates closed so that bulls cannot escape to neighbouring cows that may be infected with *Tritrichomonas* and become infected.

Cattle study groups should discuss preventative and control measures with their veterinarians. **Be sure to test bulls regularly for these diseases**.

Beware when buying in or sharing bulls! Remember female animals may also be infected.

Bacterial diseases

The following bacterial diseases were reported by practices in the provinces:

Bacterial diseases	MP	G	L	NW	FS	KZN	EC	WC	NC
Blackquarter	**x**	**x**	**x**	**x**	**x**	**x**	**x**	**x**	**x**
Botulism	**x**		**x**	**x**	**x**	**x**			
Pulpy kidney	**x**	**x**	**x**	**x**	**x**	**x**	**x**	**x**	**x**
Lamb dysentery					**x**				
Swelled head	**x**	**x**	**x**		**x**		**x**		
Red gut (cattle)					**x**	**x**	**x**	**x**	
Blood gut (sheep)	**x**			**x**	**x**		**x**	**x**	
Tetanus				**x**		**x**	**x**		
Salmonellosis	**x**					**x**	**x**	**x**	
Bovine brucellosis	**x**		**x**	**x**	**x**			**x**	
Ovine brucellosis							**x**		**x**
Actinobacillus seminis									
Bovine tuberculosis									
Johne's					**x**		**x**		

Leptospirosis									
Listeriosis							x		
Pseudomonas						x			
Fusibacterium necrophorum				x	x				
Septicaemia					x	x			
E. coli	x			x	x	x	x	x	x
Enzootic abortion					x	x			
Lumpy wool									
Uterine gangrene									
Bovine dermatophilosis (Senkobo disease)	x	x							
Wooden tongue									
Lumpy jaw									

A few comments on bacterial diseases:

Seventy cattle died due to blackquarter in one practice area – they were not vaccinated.

Brucella mellitensis, a zoonosis, is still present on a farm in the Western Cape. Two cattle tested positive, hopefully this disease will soon be something of the past on this farm.

Small stock are given additional concentrates and feed during the drought. Make sure that animals are vaccinated against pulpy kidney as many deaths were reported.

New brucellosis and *E. coli* outbreaks are reported every month.

Study the presence of diseases in your area and update your vaccination programme and order vaccines and booster doses in advance!

To control and eradicate brucellosis is a top priority for all of us!

According to law all heifers must be vaccinated between the ages of 4 to 8 months!

Viral diseases

The following viral diseases were reported by practices in the provinces:

Viral diseases	**MP**	**G**	**L**	**NW**	**FS**	**KZN**	**EC**	**WC**	**NC**
BMC (snotsiekte)	x		x	x	x	x	x		
Rabies					x				
BVD			x		x				
IBR	x		x		x	x	x	x	
BRSV									
PI3					x				
Rotavirus / Coronavirus									
Enzootic bovine leucosis (EBL)	x					x	x	x	
Sheep leucosis									
Jaagsiekte									
Orf	x			x	x	x	x	x	

Warts	**x**	**x**	**x**	**x**	**x**	**x**	**x**	**x**	

There is no treatment for viral diseases with the result that animals have to be protected by vaccinations if they are available.

There is not a vaccine available against snotsiekte. This deadly virus is associated with wildebeest but remember there is also a sheep associated strain. Wildebeest sheds the virus especially during their calving season, when calves are weaned and during the hunting season when they are stressed.

Discuss vaccination programmes with your veterinarian.

Fungal diseases

The following fungal disease was reported by practices in the provinces:

Fungal diseases	**MP**	**G**	**L**	**NW**	**FS**	**KZN**	**EC**	**WC**	**NC**
Ringworm		**x**		**x**	**x**	**x**	**x**	**x**	

Protozoal diseases

The following protozoal disease was reported by practices in the provinces:

Protozoal diseases	**MP**	**G**	**L**	**NW**	**FS**	**KZN**	**EC**	**WC**	**NC**
Besnoitiosis (olifantsvelsiekte)									

Toxicities

The following toxicities were reported by practices in the provinces:

Toxicities	**MP**	**G**	**L**	**NW**	**FS**	**KZN**	**EC**	**WC**	**NC**
Cardiac glycoside		**x**		**x**			**x**		
Slangkop				**x**					
Crotularia									**x**
Gifblaar				**x**					
Gousiekte						**x**			
***Cestrum* (ink berry)**					**x**		**x**		
Tulip				**x**	**x**	**x**	**x**		**x**
***Cynanchum* (bobbejaantou)**							**x**		
Facial eczema					**x**		**x**	**x**	
Lantana				**x**		**x**	**x**		
Prussic acid					**x**		**x**		
Senecio	**x**					**x**	**x**		
***Cotula nigellifolia* (stagger wood)**							**x**		
Geeldikkop (duwweltjies)				**x**	**x**				**x**
Vermeersiekte	**x**								
Hertia pallens									
***Solanum incanum* (maldronksiekte)**									

Gomphocarpus (Asclepias) fruticosus **(milkweed)**									
Bracken fern			x						
Kikuyu									
Ryegrass									
Ganskweek									
Paspalum staggers							x		
Photosensitivity (unknown cause)						x			
Lusern									
Mycotoxicosis								x	
Diplodiosis									
Lupins									
Harpuisbos									
Syringa berries									
Kraalbos									
Crotolaria									
Radish									
Carrot poisoning									
Onion poisoning									
Bracken fern									
Pollen beetle (*Astylus atromaculatus*)									
Water contamination									
Nitrate					x		x		
Urea	x			x			x		
Snake bite				x	x		x		
Moth cocoons (impaction)									x
Blue green algae									
Copper					x				
Selenium									
Zinc									
Fluoride									
Lead									
Paraquat									
Phosamine									
Pyrethroid									
Amitraz									
Levamisole									
Tilmicosin									
Ionophor									

As grazing conditions become poorer, toxic plants are usually greener and farmers should be aware of these plants and which clinical signs are seen when they are eaten.

Beware of bracken fern poisoning during the drought period in the Mokopane area. Cattle had a bloody diarrhoea.

http://landbou.com/kundiges/vra-vir-faffa/adelaarsvaring-en-vergiftiging/

An interesting case was recorded in the Northern Cape where moth cacoons caused severe problems when they were eaten.

http://landbou.com/kundiges/vra-vir-faffa/molopomotte-se-kokonne-verstop-beeste/

Nutritional deficiencies

The following nutritional deficiencies were reported by practices in the provinces:

Deficiencies	MP	G	L	NW	FS	KZN	EC	WC	NC
Energy	x			x	x	x	x	x	x
Protein	x			x	x	x	x		x
Phosphate	x			x	x	x			
Calcium				x	x				

Lack of roughage due to the drought is going to be a big challenge for many farmers until the next rainy season starts. **Plan now!!!!**

Micro-nutritional deficiencies

The following micro-nutritional deficiencies were reported by practices in the provinces:

Deficiencies	MP	G	L	NW	FS	KZN	EC	WC	NC
Iodine									
Copper								x	
Zinc							x		
Selenium				x	x	x	x	x	
Magnesium					x				
Manganese									
Vitamin A				x	x	x			
Vitamin B 1									

There are antagonists such as calcium, iron and sulphur which hamper the uptake of micro-minerals. Have water and soil samples analysed to see what the levels of these antagonists are. Arrange with your veterinarian to have liver samples analysed to determine the status of these micro-minerals in your herd or flock.

With the drought and lack of proper grazing, mineral deficiencies will increase.

Supplement animals with vitamin A.

Multifactorial diseases and other conditions

The following conditions were reported by practices in the provinces

Multifactorial diseases and other conditions	MP	G	L	NW	FS	KZN	EC	WC	NC
Abortions	x			x	x	x	x	x	
Stillbirths					x				
Abscesses	x	x	x	x	x	x	x	x	
Intestinal ulcers									
Bladder stones							x		
Blindness					x	x		x	
Bloat		x		x	x	x	x		
Blood gut (sheep)							x		
Blue udder	x				x		x	x	
Diarrhoea	x		x	x	x	x	x	x	
Epididymitis									
Eye cancer					x	x	x		
Eye infections	x	x	x	x	x	x	x	x	x
Joint ill	x	x		x	x	x	x	x	
Lameness/foot problems	x	x	x	x	x	x	x	x	x
Lung infection	x	x		x	x	x	x	x	x
Mastitis	x	x	x	x	x	x	x	x	
Navel ill						x		x	
Red gut (sheep, torsion of gut)					x		x		
Rectal prolaps									
Trauma	x	x	x		x	x	x	x	
Plastic bags (ingestion)					x				
Downer	x				x	x			

Discuss the origin, treatment and prevention of these diseases with your veterinarian

Metabolic diseases

The following diseases were reported by practices in the provinces:

Metabolic diseases	MP	G	L	NW	FS	KZN	EC	WC	NC
Acidosis		x		x	x	x	x	x	
Displaced abomasums		x			x	x		x	
Ketosis		x			x			x	
Milk fever					x	x		x	

There is an increase in the reporting of acidosis. Many farmers are feeding their animals due to the drought. Make sure that you adapt animals to feed containing concentrates.

Discuss the etiology, treatment and prevention of these diseases with your veterinarian.

Reproductive diseases

Reproductive diseases	MP	G	L	NW	FS	KZN	EC	WC	NC
Dystocia (difficult births)	x	x	x	x	x	x	x	x	
Endometritis					x	x		x	
Metritis		x		x	x	x	x	x	

Poor conception	x			x	x	x	x	x	
Retained afterbirth		x		x	x		x	x	
Sheath prolaps						x			
Uterine prolaps	x				x	x		x	
Vaginal prolaps	x				x	x		x	
Penis injury		x							

The drought and heat experienced play a huge role in fertility. Fertility of animals is one of the most important factors determining the success of farming. Discuss all issues with your veterinarian.

Environmental conditions

	MP	G	L	NW	FS	KZN	EC	WC	NC
Exposure to cold					x	x			
Heat stress				x	x		x		
Lightning	x			x	x	x	x		x
Drought				x	x	x	x		x

Other conditions: Drug residues (KZN), predators (FS); theft (FS), electrocution (EC), and trauma (NW, EC and WC) and numerous cases of traumatic pericarditis – wire penetrating the heart sack from the reticulum.

Cattle were electrocuted at a pivot when it was not earthed correctly. This is the second case this year that this has happened.

Comment:

In the CODE OF CONDUCT of the RPO the following standard operating procedures are documented. The local veterinarian should be your partner to help you achieve the necessary standards. http://www.rpo.co.za/BestPractices/English.aspx

PRECAUTIONARY MEASURES TO SUPPORT BIO-SECURITY.

Precautionary measures are required to protect the herd against diseases acquired because of external contact. The following categories are of concern:

1. DIRECT LIVESTOCK PURCHASES (and own animals returning):
The following should be ***verified*** before importing new animals into the herd:
How long animals have resided at the purchase or previous location?
Have there been any recent disease outbreaks in the location?
Do brand marks clearly confirm ownership?
Was a vaccination program followed (need paper or veterinarian proof). What are the local prevalent external parasites and the routinely implemented control program?
Is a veterinarian supported control program against transmittable diseases followed?
Dates and sufficient number of tests for reproductive diseases of both male and female
Dates and tests for zoonotic diseases
The above should also be verified with the purchaser's own veterinarian.

2. PURCHASES FROM SALES OR SPECULATORS
Purchase only in areas which are not in close proximity to scheduled areas
Visually inspect the animals before purchasing for:
* brand marks
* parasite infestation

3. TRANSPORT TO THE FARM
Use only reputable transporters
Has the truck been cleaned and disinfected?
Truck to follow the shortest uninterrupted route
Truck to take the shortest route to the handling facilities
Do not allow the truck personnel to get in contact with the farm herd

4. ARRIVAL ON THE FARM
Off-load the livestock to limit stress and to be visually evaluated for any unnatural conditions
Isolate them from the farm herd and shared facilities for at least 21 days (quarantine)
Retest for diseases of concern if needed, before mixing with the rest of the herd
Process new arrivals within 24 hrs after arrival (unique ID tag brand, dip, dose, vaccinate)
Inspect regularly

5. FEED PURCHASES
Ensure bales of hay are sourced from areas that are not bordering scheduled areas
Purchase feed from reputable dealers only
Avoid buying feed in second hand bags
Ensure feed trucks are also disinfected and cleaned, especially if also used to transport animals to abattoirs

6. VISITORS
Do not allow strangers or their vehicles amongst the livestock
Ensure fences are well maintained and preferably jackal and warthog proof

7. EMPLOYEES
Do not allow the employees to eat in feed stores
Supply employees with sufficient ablution facilities
Regularly arrange to let employees be medicated for tape worm and have health check-ups
Keep record of all employee livestock on the property
Treat employee livestock with separate but dedicated health programs
Ensure employees understand the reason behind the implemented bio-security measures to help ensure compliance.

GENERAL AND REPRODUCTION MANAGEMENT

Record keeping: All animals are individually identified and recorded.
To prove ownership: All animals are marked with the registered brand mark according to the Animal Identification Act, No 6 of 2002.
A defined breeding season is the basis of effective management: The breeding season coincides with the rainy season, i.e. the period when nutritive value of the pasture is at its best.
Sufficient energy reserves in the herd as measured by condition scoring are vital, especially for effective breeding, and when inadequate the herd is supplemented in consultation with a

nutritionist: Condition scoring of bulls and cows are regularly done, particularly at the onset of the breeding season and supplemented if necessary.
Bull - cow ratios are maintained: A ratio of 1 to 25 is maintained in every separate herd.
Fertility of breeding bulls: All breeding bulls are tested for mating ability and semen quality before the breeding season.
Sexually transferable diseases: Sheath washes or scrapes on bulls are performed annually.
Diseases that can cause poor conception, abortion or weak calves: Cows are vaccinated against such diseases in consultation with the veterinarian.
Breeding success monitored by a veterinarian: Rectal pregnancy or scan diagnosis is done by the veterinarian 8 weeks after the breeding season.
Twenty percent of cows or more not pregnant: Further tests are done to determine cause of low pregnancy rate.
Culling of non-pregnant cows: Non-pregnant cows are removed from the herd and considered a necessary bonus to supporting herd income.

HERD HEALTH AND BIO-SECURITY
Maintenance of herd health is key to a successful enterprise: A veterinarian should visit the farm bi-annually at least.
Calf mortality before 3 months of age is an important reason for poor weaning percentage: Good management practices are applied to limit early calf deaths.
Some diseases and parasites (internal and external) are more often encountered in specific areas: Annual vaccinations and a parasite control program should be applied according to regional requirements and in liaison with the veterinarian.
Farmers selling weaned calves to feedlots may want to have a market advantage compared to others: A specific vaccination program is applied before weaning for that purpose.
Herds may be at risk of being exposed to CA and TB: The herd is tested annually for CA and all heifers are vaccinated against CA between 4 and 8 months of age with an efficient, approved remedy. The herd is tested at least every 5 years for TB
Precautionary measures are required to prevent diseases being imported into the herd: A quarantine program to keep incoming animals separate is followed. All incoming animals have a suitable certificate of negative test results or are of a certified clean, closed herd.
Stock remedies and medicines should be registered, correctly stored and used before the transpire date: All medicines and stock remedies are registered, stored and applied according to prescription.
Prescribed medicines with a specific application are under the control of the veterinary profession: All prescription medicines are obtained and applied under prescription from a veterinarian.

Practices that had nothing to report

Karino (Nelspruit) – Dr. Silke Pfitzer
Lephalale – Dr. Brigitte Luck
Vaalwater – Dr. Hampie van Staden
Pietermaritzburg – Rick Mapham
Jan Kempdorp – Dr. Jan Brand
Malmesbury – Dr. N.J. Heyns
Plettenberg Bay – Dr. Stephan Nell

Ostriches

Western Cape

Oudtshoorn – Ostrimed

Condition	Comments
Bont-legged ticks	3 High tick insidence which leads to down grading at abattoir due to export regulations. Bad season for ticks so far.
Cryptosporidium	2 See as prolaps of the cloaca. High water intake/ increased urination, wet soils = pica = exposure to oocycts. Immune compromise – low feed intake during hot weather = prolapses
Mycoplasmosis	2 Change in season – temperature fluctuations and wind. Increased dust. Most chicks have a sinusitis/ rhinitis and tracheitis. High morbidity increasing production losses – slower growth. Dusty environment due to high heat and dry environment. Wind every afternoon. Dust bowl effect. Together with challenges on nutrients and stress. Opens door for *Mycoplasma*.
Diarrhoea	2 Soil pica, wet soil triggers opportunistic bacterial infections. Heat triggers *Clostridium* due to overflow of nutrients into the hind gut fermenting system.
Protein /Energy deficiency	2 Rain and sudden drop in temperature. Leads to feed refusal of badly managed feed troughs and feedng. Increased soil pica, high energy demand for chicks that have been placed late in the season. Reduced feed intake, all contribute to diarhoea – sand irritation and fecal bacteria. Insufficient nutrient intake, stress on immune system and growth. Opportunistic bacteria or other infections, chronic low grade *C. perfringens* infection. Gut damage. Poor growth partly due to low feed intake but significantly due to poor quality raw material being bought in for complete feeds. Soya 40% protein vs specified at 47%
Opthalmia	2
Sinusitis	3
Cold and wet	Birds have significantly reduced feed intake, resulting in energy and protein deficiency – poor growth and any stress e.g. handling or slightly cold weather causes acute mortalities due to PED (protein and energy deficiency)

Equines

Gauteng

Magaliesburg

African Horse sickness – 1

Muldersdrift

African Horse Sickness – 2 cases

Encephalosis virus – 3 cases

Limpopo

Mokopane – Dr. Henk Visser

Midges – 1

Makhado

African Horse Sickness - 2

Free-State

Bethlehem
Babesiosis - 1
Colic - 1
Parys
African Horse Sickness – Saddle horse, filly 1,5 years old

KwaZulu-Natal

Ulundi
One farmer said his mare aborted, have not had time to go around and look at her.
Planning on helping the CCS vet from Allerton bleed all the local horses in the area for **Dourine**, she has already picked up 3 positive cases in Southern KZN.

Eastern Cape

Humansdorp
Babesiosis - 1

Port Alfred
Babesiosis - 2 cases Bathurst
Colic – 1 Clumber

Western Cape

Swellendam
Babesiosis – 2 cases

Swine

Gauteng

Onderstepoort Academic Hospital
Mastitis - 1

Eastern Cape

Humansdorp
Circavirus – 1
Somerset East
Intestinal roundworms – 2 Sable
Paralysis tick – 1

Rabbits

Nigel
Unknown deaths – awaiting culture results
Coccidiosis

Game

Mpumalanga

Ermelo
Wireworm – 3 Blesbuck and springbuck
Capture myopathy

Gauteng

Pretoria -A nimavet
Tapeworms - 1
Brown ear-tick – 3
Bont legged-tick – 3
Coccidiosis - 1
Arthritis – 2
Abscesses – 2 Secondary to tick infestation

Limpopo

Bela-Bela
Intestinal roundworms – 2
Conical fluke – 1 Blesbuck
Theileriosis – 1 Sable calf
Dystocia – 1 Buffalo
Lungs – 1 Springbuck
Eye problems – 2 Nyala
Mokopane
Heartwater tick – 3
Brown ear-ticks - 3
Bont-legged ticks - 2

North West

Klerksdorp
Intestinal roundworms – 2
Bont-legged ticks – 2
Red-legged ticks – 2 sable
Blowflies – 1
Screw-worm - 3
Warts – 2
Capture myopathy – 2 animals died a couple of days after capture. Animals most likely caught in nets
Lichtenburg
Intestinal roundworms – 1
Heartwater ticks - 2
Rabies – 1 jackal
Rabies – 1
Capture myopathy – 1
Cold exposure - 1
Stella
Blue ticks - 3

Free-State

Hertzogville
Botulism – 3 Sable, 15 animals died
Parys
Roudworms and coccidiosis – sable (routine check animals not treated)

KwaZulu-Natal

Memel
Cold exposure - 1
Pongola
Brown ear-tick - 1
Protein deficiency – 1 (terrible drought)
Energy deficiency - 1 (terrible drought)
Drought – 3
Ulundi
Corridor disease - No game but my area borders on uMfolozi game reserve. I expect some possible corridor outbreaks where grazing pressure will force animals to graze on the fence line. In fact I have witnessed cattle grazing in the park with my own eyes. My neighbouring area in Hluhluwe has had a massive confirmed corridor outbreak due to farmers grazing next to Isimangaliso and Mkuze game reserve fences.

Eastern Cape

Alexandria
Red gut – sable calf
Cradock
Fasciola eggs in faecal egg count – 1 Sable
Port Alfred
Shipping fever pneumonia – 1 Sable
Verminosis – 1 Sable
Predation – 1 Sable calf

Western Cape

Oudtshoorn
Capture myopathy - 1 Sable
Red gut – 1
Trauma - 1

Northern Cape

Kimberley
Suspected TB – 1 Buffalo

Monthly report on Livestock and Wildlife isolations for March 2016 from IDEXX Laboratories supplied by dr. Marijke Henton (marijke-henton@idexxsa.net)

Respiratory disease of feedlot cattle yielded *Mannheimia haemolytica* [4], *Pasteurella multocida* [3], *Mycoplasma* [2] and one each of *Mannheimia* biotype 9, *Mannheimia* biotype 10, *Histophilus somni* and *Trueperella pyogenes*. Enteritis in calves yielded 6 cases of colibacillosis, one of which was an ESBL [Extended Spectrum Beta Lactamase] producer, which means that none of the penicillins nor

any of the cephalosporins would be effective when used for treatment. *Trueperella pyogenes* was isolated from a case of a persistent uterine discharge in a cow.

Both *Pasteurella multocida* and *Actinobacillus pleuropneumoniae* were isolated from pigs with pneumonia.

Respiratory disease in a horse yielded both *Actinobacillus equuli* and *Pseudomonas aeruginosa*., and another horse showing a nasal discharge yielded *Streptococcus dysgalactiae [equisimilis*].

Both *Trueperella pyogenes* and *Corynebacterium striatum* were isolated from abscessation in a roan. Conjunctivitis in a nyala yielded *Moraxella bovoculi* and *Corynebacterium striatum*. Although *Moraxella bovis* is the most common cause of Infectious Bovine Keratoconjunctivitis, *Moraxella bovoculi* has also been associated with IBK. *Corynebacterium striatum* acts as an opportunist in animals and man. A leopard cub showing enteritis yielded *E. coli*.

M M Henton

Monthly report on Livestock and Wildlife isolations for March 2016 from IDEXX Laboratories supplied by dr. Liza du Plessis (Liza-DuPlessis@idexx.com)

Condition	Comments and Specie
Intestinal roundworms	C 1
Heartwater	C 1
Campylobacter abortion	O 1
Abortion	B 1, G 1
Lungs	P 1
Opthalmia	C 1

Feedlot report received from Dr. Shaun Morris and Dr. Eben du Preez for March 2016 (edupreez1@telkomsa.net)

Sheep feedlots

General conditions occurring:

Enteritis

Pulpy kidney

Blood gut

Injuries – mostly weak animals during transport.

Mal adaptation – especially lighter calves

Pneumonia

Severe wireworm infestation

Coccidiosis

Few *Salmonella* infections

Blue tongue caused a few morbidities and deaths.

Foot rot in wet kraals

Prolapses and urolithiasis (bladder stones)

Cattle feed lots

Morbidities rose after change in weather patterns

Increase in pneumonia cases

Numeous anaplasmosis cases

Heartwater and red water cases

At abattoirs the following were seen: measles, liver fluke, pneumonia, enteritis, pericarditis and liver abscesses.

Foot rot

Arthritis

Vitamien B1 deficiency causing nervous signs

Acidosis and red gut

Warts and ringworm

A case of dermatsparaxis (loosening of the skin) was seen in a Drakensberger

Feedlot report received from Dr. Andy Hentzen for March 2016 (andyvet@mweb.co.za)

Condition	Comments and Specie
Blue ticks	B 3
Brown ear-ticks	B 3
Bont-legged ticks	B 2
Red-legged ticks	B 3
Nuisance flies	B 3
Blowflies	B 1
Midges	B 3
African red water	B 3
Asiatic red water	B 3
Anaplasmosis	B 3
Three day stiffsickness	B 1
Blackleg	B 1

Red gut	B 3
Pulpy kidney	O 1
Ringworm	B 3
Leptospirosis	B 1
BVD	B 3
IBR	B 3
Warts	B 3
Water contamination	B 3
Protein deficiency	B 3
Energy deficiency	B 3
Phosphate deficiency	B 2
Copper deficiency	B 2
Zinc deficiency	B 2
Selenium deficiency	B 2
Vitamin A deficiency	B 2
Combination of trace mineral deficiencies	B 3
Retained afterbirths	B 2
Lameness	B 3
Lungs	B 3
Diarrhoea	B 3
Opthalmia	B 3
Abscesses	B,C 3

Monthly report for March 2016 from Dr R D Last (BVSc; M.Med.Vet(Path); MRCVS)

Specialist Veterinary Pathologist, Vetdiagnostix - Veterinary Pathology Services

Contributors

Mr Butch Bosch
Ms Ntando Magoso
Mrs Beverley Williams
Ms Nicole Gengan
Dr Rick Last

LIVESTOCK DISEASE SURVEILANCE			
LIVESTOCK SPECIES	**DISEASE AGENT**	**NO. CASES**	**LOCATION**
Bovine, Holstein Cow	Suspected stephanofilariasis	1	Humansdorp, E.Cape
Bovine, Aborted Fetus	Neospora	1	Howick, KZN

LIVESTOCK DISEASE SURVEILANCE			
LIVESTOCK SPECIES	**DISEASE AGENT**	**NO. CASES**	**LOCATION**
Sable, Antelope	Infectious hepatitis and in-utero growth retardation	1	Phalaborwa,

Fetus			Mpumalanga
African Penguin	Candidiasis	1	Durban, KZN
Sable Antelope, Adult	Fatty liver - negative energy balance state	1	Grahamstown, E.Cape
Sable Antelope, Calf	*Chlamydophila pecorum*	1	Modimole, Limpopo

Monthly report for March 2016 from Dr. Lucy Lange: PathCare Vetlab

(lange@pathcare.co.za)

Disease condition	Animal specie	District	Comment
Pneumonia/*Pasteurella*	Cattle	Free State/Eastern Cape	
Campylobacter	Cattle	Country wide	Confirmed with PCR
Tritrichomonas	Cattle	Country wide	Confirmed with PCR
Cryptosporidium	Cattle	Boland	
Cardiomyopathy	Cattle	North Western Cape	
Ketosis	Cattle	Boland	
Liver necrosis	Cattle	Eastern Cape	
Proud flesh	Horses	Eastern Cape	
Sarcoid	Horses	Country wide	
Pneumonia	Horses	Boland	
Thrombosis ovf navel cord	Horses	Western Cape	
Septicemia	Sheep	Free State	
Purulent enteritis	Sheep	Free State	
Nekrotic placentitis	Sheep	Eastern Cape	
Pasteurella pneumonia	Sheep		
Liver necrosis (plants)	Sheep	North West	
Bacterial pneumonia	Boer Goats	Western Cape	
Game:			
Muscle necrosis / Capture myopathy	Nyala, Sable,Bontebok Blesbok	Namibia/Western Cape	
Steatitis	Lion	Free State	
Oreign body pneumonia	Sable	Kimberley	
Necrotic enteritis	Sable	Kimberley	
Abomasal ulcers	Nyala	Namibia	
Fungal pneumonia	Aardvark	Namibia	
Bacterial hepatitis	Black wildebeest	Namibia	
Hepatotoxicosis	Impala	Western Cape	
Capture myopathy	Bontebok	Western Cape	
Pox virus	Turkey	Eastern Cape	

There were many more histological samples received from game in comparison to samples received from production animals. Brucellosis still a huge problem.

Monthly report for March 2016 from Queenstown Provincial Veterinary Laboratory as supplied by Dr. A.D. Fisher (alan.fisher@drdar.gov.za)

Condition	Area	Comments and Specie
Intestinal roundworms		B,O,C 3
Resistant roundworms		O 3 (moxidectin, derquantel)
Asiatic red water	Queenstown	B 3

Anaplasmosis		B 1
Hartwater	East London	C 2
Blue tongue	Sterkstroom, Cofimvaba	O 3
Pulpy kidney		O 2
Rabies	Libode Mthatha Port St Johns Willowvale Ngcobo	Canine 3 cases Canine 2 cases Canine 1 case Canine 1 case Bovine 1 case
Lameness	Cathcart	O 1
Eye problem		C 1

B – bovine; O – ovine; C – caprine; P – pigs; G – game

1 = one case; 2 = 2 to 9 cases; 3 = more than 10 cases

Monthly report for March 2016 from Deltamune laboratory Oudtshoorn as supplied by Dr. Mark Chimes (mark@deltamune.co.za)

Disease condition	Specie
Mastitis – All over RSA	B 3
Trichomonosis – Queenstown	B 2
Vibriosis – Queenstown	B2

B – bovine; 2 = 2 to 9 cases; 3 = more than 10 cases

Wildlife Pathology Research Programme – National Zoological Gardens. Information supplied by Dr. Emily Lane (Emily@nzg.ac.za) 31 st January 2016 to 22 nd March 2016

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DAFF Import/Export Policy Unit Subdirectorate

Monthly report: Cases sent to referring veterinarians between 31 st January 2016 to 22nd March 2016. Cases from State vet Skukuza or Orpen Cases imported with master permit and CITES permits (none)

PM Date	Species	Final	PM No
04-Jan-16	Eastern White Pelican	Pyelonephritis	16Z001
05-Jan-16	Leopard tortoise	None possible (autolysis)	16Z002
05-Jan-16	Blue Crane	Complications of foot amputation and foreign body ventriculitis	16Z003
07-Jan-16	Addra gazelle	Suspected complications of severe weight loss	16Z004
07-Jan-16	Black and white ruffed Lemur	Iron storage disease, chronic kidney disease	16Z005
09-Jan-16	Cheetah	Salmonella pleuritis (reported to State Vet)	16Z006
11-Jan-16	Snouted Cobra	Suspected viral pneumonia	16Z007
12-Jan-16	Cheetah	Septicaemia post orthopaedic surgery	16Z008
13-Jan-16	Leopard	Cranium malformation	16Z009
15-Jan-16	Brown hyaena	Canine distemper virus infection	16Z010
15-Jan-16	Cheetah	Renal fibrosis, hepatic amyloidosis, oxalate nephrosis	16Z011
20-Jan-16	Ring tailed Lemur	Suspected bacterial pleuritis	16Z012
20-Jan-16	Black eared Marmoset	Cardiomyopathy	16Z013
21-Jan-16	Lion	Fibromatous periodontal ligament epulis	16Z014B
28-Jan-16	Axolotl	Bacterial enteritis	16Z015
28-Jan-16	Civet	Result pending Rabies/canine distemper tests	16Z016
28-Jan-16	African Wild Dog	None possible (autolysis)	16Z017
28-Jan-16	Impala	Oral foreign body	16Z018
28-Jan-16	Leopard	None possible (autolysis)	16Z019
28-Jan-16	Impala	Pulmonary mineralisation	16Z020