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

July 2020

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

These reports include data from individual practices

Click on Disease Reports

The following practices and laboratories (148) submitted reports during July 2020:

Mpumalanga (11)
Balfour – Dr. Louis van Jaarsveld
Bethal – Dr. Hardus Pieters
Ermelo – Dr. Ben Potgieter
Grootvlei – Dr. Neels van Wyk
Hendrina – Dr. Anja Steinberg
Lydenburg – Dr. Marietjie Malan
Lydenburg – Drs. Trümpelmann and Steyn
Malalane – Drs. Van Sittert an Van Sittert
Nelspruit – Dr. André Beytel
Standerton – Dr. Kobie Kroon
Volksrust – Dr. Johan Blaauw

Gauteng (12)
Bapsfontein – Drs. Engelbrecht, Olivier and Nagel
Bronkhorstspruit – Dr. De Bruin, De Bruin and Labuschagne
Hammanskraal – Dr. Hentie Engelbrecht
Krugersdorp – Dr. Danie Odendaal
Magaliesburg – Dr. Ryan Jeffery
Muldersdrift – Drs. Speedy and Enslin
Nigel – Dr. Cindy van der Westhuizen
Nigel – Dr. Henry Labuschagne

Onderstepoort Veterinary Academic Hospital – Proff. Holm and Leask and Drs. Fitte, Grobler, Hentzen, Koeppel, Leask, Magadu, Magagula, Marufu, Mokoele, O'Dell, Tagwirreyi, Tshuma, Van den Hurk and Van der Leek
Pretoria – Dr. Hanneke Pienaar
Rayton -Dr. Frans Malan
Vanderbijlpark – Dr. Kobus Kok

Limpopo (8)
Bela-Bela (Warmbaths) - Dr. Nele Sabbe
Bela-Bela – Drs. Du Toit, Hansen, Bester, Herbst and Malan
Hoedspruit – Dr. Llana van Wyk
Modimolle (Nylstroom) – Drs. Huber, Bredell and Barnard
Mokopane (Potgietersburg) – Dr. Henk Visser
Polokwane (Pietersburg) – Drs. Watson, Viljoen, Jansen van Vuuren, Van Rooyen, Snyman and Cremona
Tzaneen – ZZ2 - Dr. Danie Odendaal
Vaalwater – Dr. Hampie van Staden

North West (17)
Beestekraal – Dr. Alwyn Venter
Bloemhof – Dr. Cizelle Naudé
Brits – Dr. Boshoff and Coertze
Brits – Dr. Gerhardus Scheepers
Christiana – Dr. Pieter Nel
Klerksdorp – Drs. Geral, Van den Berg, Van den Berg and Greyling
Leeudoringstad – Dr. Ian Jonker
Lichtenburg – Dr. Nelmarie-Krüger-Rall
Ottosdal – Dr, Sharnelle Ferreira
Potchefstroom – Dr. Martin Ferreira
Potchefstroom – Dr. Martin Jordaan
Rustenburg – Drs. Goosen, Grobler, Sparks, Van Egdom, Van Rensburg and Van Rooyen
Schweizer-Reneke – Dr. Pieter Venter
Stella - Dr. Magdaleen Vosser
Ventersdorp/ Koster –Drs. Benadé and Van der Merwe
Vryburg – Dr. Jurie Kritzinger
Vryburg – Drs. De Jager and Rautenbach

Free State (30)
Bethlehem – Drs. Strydom and Strydom
Bethlehem – Dr. J.C du Plessis
Bloemfontein – Dr. Stephan Wessels
Bloemfontein – Dr. Lizanne Meiring

Bultfontein – Dr. Santjie Pieterse
Clocolan – Drs. Wasserman and Kleynhans
Dewetsdorp – Dr. Marike Badenhorst
Excelsior/Ladybrand – Dr. Dedré Nel
Ficksburg – Dr. Woody Kotzé
Frankfort – Drs. Lesssing, Cilliers and Janse van Rensburg
Harrismith – Dr. Slabber
Hoopstad – Dr. Kobus Pretorius
Hoopstad – Dr. Cassie van der Walt
Kroonstad – Drs. Daffue, Eksteen, Van Zyl and Van der Walt
Memel – Drs. Nixon and Nixon
Oranjeville - Dr. D'Wall Hauptfleish
Parys – Drs. Wessels and Wessels
Philippolis – Dr. Stephan van Niekerk
Reitz – Dr. Murray Smith
Senekal – Dr. Jan Blignaut
Senekal – Dr. Theo Kotze
Smithfield – Dr. Nienke van Hasselt
Viljoenskroon – Dr. Johan Kahts
Villiers – Drs. Hattingh, Krüger, Maree and Muller
Vrede – Drs. Bester-Cloete, Myburgh and Roos
Vrede – Dr. Rudolph Fourie
Warden – Dr. Paul Reynolds
Wesselsbron – Dr. Johan Jacobs
Winburg – Drs. Albertyn and Albertyn
Zastron – Drs. Troskie and Strauss

KwaZulu-Natal (11)
Bergville – Dr. Jubie Muller
Bergville – Ariena Shepherd
Camperdown – Dr. Anthony van Tonder
Dundee – Drs. Marais and Fynn
Eshowe – Drs. Pryke and Hoffman
Kokstad – Drs. Clowes, Shrives and Lees
Mooi River – Drs. Edmunds, Fowler and Still
Mtubatuba – Dr. Trevor Viljoen
Newcastle – Dr. Barry Rafferty
Underberg - Drs. King, Delaney and Huysamen
Vryheid – Drs. Theron and Theron

Eastern Cape (19)
Adelaide – Dr. Steve Cockroft

Alexandria – Dr. Charlene Boy
Alexandria – Dr. Johan Olivier
Aliwal North – Drs. Troskie and Strauss
Bathurst – Dr. Jane Pistorius
Cradock – Dr. Frans Erasmus
Elliot – Drs. Clowes, Shrives and Lees
Graaff- Reinet - Dr. Roland Larson
Graaff-Reinet – Hobson, Strydom and Hennesy
Grahamstown – Drs Mendez and Dreyer
Humansdorp – Drs. Van Niekerk, Jansen van Vuuren and Davis
Jeffreys Bay - Drs. Lategan and Hoek
Kareedouw – Dr. Martin Bootsma
Port Alfred – drs. De Bruyn and Jonk
Queenstown – Drs. Du Preez, Klopper, De Klerk, Catherine en Wentzel
Steynsburg – Dr. Johan van Rooyen
Stutterheim – Dr Dave Watermann
Uitenhage – Drs. Mulder and Krüger
Witelsbos – Dr. Elmien Kotze

Western Cape (20)
Beaufort West - Dr. Jaco Pienaar
Beaufort West – Dr. Bennie Grobler
Caledon – Drs. Louw and Viljoen
Darling – Drs. Van der Merwe, Adam, Jenkins and Lord
George – Drs. Strydom, Truter and Pettifer
George – Dr. Riaan Putter
Heidelberg – Dr. Albert van Zyl
Malmesbury – Dr. Otto Kriek
Malmesbury – Drs. Bosman and Groenewald
Malmebury – Drs. Heyns and Zolner
Malmesbury – Dr. Francois de Villiers
Oudtshoorn – Dr. Glen Carlisle
Oudtshoorn – Dr. Adriaan Olivier
Paarl – Dr. Carla van der Merwe
Piketberg – Dr. André van der Merwe
Plettenberg Bay – Dr. André Reitz
Stellenbosch – Dr. Alfred Kidd
Swellendam – Drs. Malan and Fourie
Vredenburg – Dr. Izak Rust
Worcester – Dr. Kobus Rabe

Northern Cape (9)

Calvinia – Dr. Bertus Nel
Colesberg – Drs. Rous and Rous
De Aar – Dr. Donald Anderson
Kathu – Dr. Jan Vorster
Kimberley – Drs. Swart, Smith and Hyslop
Kimberley – Drs. Van de Wateren and Van de Wateren
Kuruman – Dr. Gerhard van der Westhuizen
Postmasburg – Dr. Boeta van der Westhuizen
Upington – Drs. Vorster and Visser

Feedlots (2)
Dr. Eben Du Preez
Dr. Shaun Morris

Mastitis consultant (1)
Dr. Theo Kotzé – Moqhaka district (Kroonstad municipality)

Laboratory reports (8)
Dr. Marijke Henton - Vetdiagnostix, Johannesburg
Dr. Rick Last – Vetdiagnostix, Pietermaritzburg
Dr. Liza du Plessis – Idexx SA – Johannesburg
Dr. Annelie Cloete – Elsenburg
Dr. Sophette Gers – Pathcare, Cape Town
Prof. Emily Mitchell – University of Pretoria
Dr. Mark Chimes – Dairy Standards, George
Amanda McKenzie – Vryburg Veterinary Laboratory

Brucella health status for the sale of breeding animals

Brucellosis steering committee August 2020

Brucellosis is a highly contagious disease of cattle caused by the bacteria *Brucella abortus*. The disease can have a very long incubation period (time from exposure until disease is present) which makes diagnosis difficult. Brucellosis is considered a herd disease as cattle that test negative in an infected herd may still be in the incubation period of the disease and not yet test positive.

- Cattle in the incubation period can easily be sold as “negative” to another farmer, and when on the new farm they calve or abort and each release around 46 million bacteria into the environment to infect other cattle.
- If a heifer calf is infected in utero when the mother is infected, the heifer will not test positive (known as latent infection) until she is at least 4-5 months pregnant, or only after calving. This is because the pregnant uterus forms the sugar erythritol from around 4 months pregnancy, and

the bacteria require this sugar to grow. This growth will result in the formation of antibodies that are measured in the blood tests.

- Beware of heifers that individually test "negative" for brucellosis prior to calving if they do not originate from a brucellosis negative herd.
- If there is no herd history of annual negative Brucella testing then individual cow or bull testing is worthless.

Only if the following conditions are adhered to will the testing of individual animals before a sale be sufficient:

1) Up to date and regular herd tests that are negative.
2) No cattle of unknown health status should be introduced into the herd, only cattle from tested brucella negative herds can be introduced.
3) Basic biosecurity measures should be applied (e.g. proper fencing, no contact with other cattle of unknown disease status, quarantine and test newly introduced cattle for disease before letting them join your herd)

With the above in mind, the following "rules" should be adhered to when sending cattle to an auction or sale:

- In your cattle herd, all (i) bulls, (ii) female cattle that have calved and (iii) heifers that are >4 months pregnant must be tested for brucellosis with negative results. This herd test should be done annually.
- Heifers should be re-tested 14 to 30 days after calving.

All heifers should be vaccinated between the ages of 4 and 8 months using a registered Brucella vaccine (S19 or RB51). Female cattle older than 8 months may not be vaccinated with S19 as it can cause false positive test reactions. Booster vaccination of female cattle is only allowed with RB51 with permission of State Vet (according to Table 2 of the Animal Diseases Regulations). Bulls should not be vaccinated as they can become sterile.

It is a very good biosecurity measure to once a new animal(s) is introduced onto a property, to keep it completely separate (in quarantine) and have it tested for disease, and treat for external and internal parasites before introducing the animal(s) into your herd. This will help you to ensure that your new animals are healthy and it will protect your existing herd from accidental introduction of diseases and parasites.

The Veterinary Strategy 2016 -2026 is 4 years down the line

How are we doing?

http://nahf.co.za/wp-content/uploads/Vet-strategy-final-signed.pdf

The core strategies are depicted in the table below:

CORE STRATEGIES		OBJECTIVES
Foundation	Strengthening of the veterinary authority for better governance and service delivery	Restore national chain of command for all aspects of veterinary services and form the legislative and procedural basis to effectively further animal health and welfare, food safety, food security and market access in South Africa.
Pillar 1	Strengthening competencies for animal health	To strengthen animal disease surveillance, prevention, control and eradication programmes to improve animal production, market access and contributing to the one health initiative.
Pillar 2	Strengthening competencies for veterinary public health, feed and food safety	To strengthen control systems for enhanced public health, feed and food safety and trade.
Pillar 3	Strengthening competencies for veterinary laboratory diagnostics	To strengthen competencies and accreditation for food safety and animal health diagnostic laboratories and research.
Pillar 4	Development and implementation of an Animal and Products Identification, Recording and Traceability (AIRT) System	To improve animal identification and traceability, which will aid in the control of animal diseases, promote food safety and the quality of livestock data for trade purposes.
Pillar 5	Strengthening competencies for animal welfare	To improve animal welfare legislation and standards and ensure that animal keepers fulfil their responsibilities.

CRITICAL SUCCESS FACTORS

Critical to the success of the implementation of this strategy is to ensure:

(a) A clear chain of command for animal disease management.

(b) Establishment of an animal identification and traceability system.

(c) Ensuring overall ownership and participation of government and all industry stakeholders irrespective of level of development and the necessary awareness creation.

(d) Obtaining the necessary financial support for the identified improvement areas.

(e) Preparation of supporting legislation and regulations.

With reference to surveillance, the VS should maintain and improve the current passive surveillance programmes and progressively extend the passive surveillance systems to the private veterinary network. VS should consult with private veterinarians, industry, smallholders and their representatives in the development of official delegation to private veterinarians. VS should train producers and veterinarians in their responsibilities in relation to recognition and reporting of controlled/notifiable and other diseases and develop and implement a comprehensive national disease reporting system from field to national level. The system should specify consistent reporting procedures (consider the utilisation of mobile devices and apps), data management and collation and include formal inputs from private veterinarians and abattoirs. Veterinary services should have their own courier service for the submission of samples.

5.5.2 Animal identification

5.5.2.1 Animal identification and movement control[36]

For a progressive livestock industry, the VS need to standardise all private sector identification systems (such as those currently used for the purposes of trade, breeding etc.) through developing an accreditation process. These ID systems should be easily aligned with future longer term planning for a national ID system. The VS must ensure that data collected at all levels are collated to actualise the national livestock census and develop and implement a national livestock property identification system. The VS should undertake a thorough planning, including cost analysis, for national compulsory lifelong individual identification of livestock, especially considering:

- relevant legislation and regulations, and their economic and social impact
- the complexity and cost of ongoing database management, including recording and data entry for all movements/births/deaths etc
- the human resources and the conditions under which animal identification should be implemented (farmers, private veterinarians, government AHTs),
- the way the overall system might be financed (cost recovery system)

The VS should further consult and request business plans from farmer groups to ensure that the process to standardise systems also incorporates their needs and perspectives on a national compulsory life-long identification system. The VS should develop and implement legislation/regulations to standardise existing private individual identification systems and explore requirements for a legislative framework to impose a national standardised compulsory identification system for permanent individual identification of all livestock including farmed game. If initiated, there will be a need to progressively train staff, farmers or private veterinarians in tagging and data entry for livestock identification. The VS should develop a stakeholder communications plan relating to both standardised and compulsory livestock identification and explore the development of a database to record all identified animals, updating their movements, treatments, deaths etc. This will also need to ensure compatibility for other aspects such as animal production/management/breeding etc. It was further suggested that a cell phone application could be developed to load information into the database.

An independent agency/organisation may be needed to administer the animal identification system. Cattle should be used as the species to pilot the programme.

CHAPTER 8: CONCLUSIONS AND RECOMMENDATIONS

Prioritisation of the objectives of this strategy can be divided into short, medium and long term as shown in the table below:

	Core Strategy	Short term (1-3 years)	Medium term (3-5 years)	Long term (5-10 years)
Found ation	Strengthening of the veterinary authority for better governance	- Establish specialised legal support team - Establish national risk analysis unit - Develop system of authonsation - Veterinary and para-veterinary professional development	- Develop joint programmes with stakeholders	- Restore national chain of command for all aspects of veterinary services (changes in structuring)
Pillar 1	Strengthening competencies for animal health	- Address the challenges of implementation of the Animal Diseases Act (Act 35 of 1984) - Improve animal disease surveillance system	- Run pilot project for brucellosis control in cattle (develop model) - Develop and implement control programmes for other animal diseases	- Establish effective and efficient administration for animal disease control
Pillar 2	Strengthening competencies for veterinary public health, feed and food safety	- Define veterinary services' contribution to the national antimicrobial resistance strategy framework - Consult and implement VPH strategic implementation plan (Incl IMI)	- Develop a single Veterinary Medicine Act - Revise Meat Safety Act (Act 40 of 2000)	- Establish effective and efficient administration for food safety system
Pillar 3	Strengthening competencies for veterinary laboratory diagnostics	- Laboratory approval plan, including SANAS accreditation, to be further developed and consulted	- Expand laboratory capacity under veterinary services	- Expand laboratory capacity under veterinary services
Pillar 4	Development and implementation of an Animal and Products Identification, Recording and Traceability (AIRT) System	- Policy for individual animal identification and value chain traceability to be developed and consulted - Draft legislation - Provide framework for animal identification - Develop government controlled database	- Implement legislation - Establish effective and efficient administration for AIRT system - Run pilot project on cattle	- Comprehensive animal movement recording and relevant controls
Pillar 5	Strengthening competencies for animal welfare	- Update/revise legislation - Establish national animal welfare unit - Animal Welfare Strategic Implementation Plan further developed and consulted	- Develop welfare guidelines for the keeping of various animal species and industries - Develop welfare guidelines for the various types of slaughter for the various	- Implementation of all animal welfare legislation and standards

BIOSECURITY

Biosecurity should not be just a word but should be an action. All of us (producer organizations, farmers and their employees, politicians, veterinarians, co-op personnel, representatives, auctioneers, agricultural writers and inhabitants of the Republic of South Africa) should be protecting our national herd becoming infected with organisms which could harm them and the people consuming products of animal origin.

We have been talking and writing, participating in TV and radio programmes, farmer's days and meetings on brucellosis, foot and mouth disease, Rift Valley fever, trichomonosis, Asiatic red water, cryptosporidiosis, *E. coli*, snotsiekte, rabies, fear of East Coast fever, sheep scab, ram's disease, listeriosis, tuberculosis, African swine fever, bird flu to name a few important diseases that we were confronted with during the last year or two. Stock theft and farm murders are on the increase. Water sources are polluted. Welfare issues were problematic.

Farmers had been hit by export restrictions, falling of meat prices and production losses – when will we ever learn to protect our investments with all our might!

We are not doing what we should! Identifying our animals, controlling movement, vaccinating our animals and demanding vendor declarations when buying animals - Buyer beware!

As was recently experienced, an auction could be the most dangerous place to buy animals **if** biosecurity measures are not heeded. All animals should be branded with a registered brand mark and or tattoo, health certificates in place and seller's home address (not post box number, should be available. Take note that foot and mouth disease, bovine brucellosis, tuberculosis, Johne's disease, trichomonosis, vibriosis, sheep scab (to name a few diseases) and parasites resistant to certain antiparasiticides are **herd and flock** diseases! Contact your veterinarian to assess your risk bringing in animals onto your farming unit. As an additional precaution, quarantine animals for at least 28 days.

All is not doom and gloom – many farmers, although in the minority, are doing the correct thing. Following a closed herd policy, identifying their animals, testing their animals for brucellosis, movement control, animals that are bought and showed are quarantined before introducing them into the herd. Joint action by government and private sector during disease outbreaks through the National Animal Health Forum proved to be successful.

Our main goal now, should be to get a Livestock Identification and Traceability System (LITS) in place. This will enable us to establish certain disease-free compartments and help to contain an outbreak within a short time period.

In unity lies our strenghth – join your producer organization!!

What to do to pe prepared for future outbreaks

Get a traceability system in place

Biosecurity guidelines

http://nahf.co.za/wp-content/uploads/FMD-Basic-Biosecurity-Guidelines-2019-11-19-Ver-3-1.pdf

1. During a FMD outbreak it is the producer's responsibility to keep their animals from getting infected.

2. Although FMD does not pose a food safety or public health concern it has a major impact on animal health and international trade.

3. Each commercial farm should appoint a biosecurity manager.

4. A written biosecurity plan is a basic requirement.

5. Development of a plan must be done by the biosecurity manager with assistance from a veterinarian.

6. The biosecurity plan must include a line of separation/demarcation of the biosecurity area.

7. Training:

a. Train all personnel in biosecurity principles at least annually.

8. Access: a. Access points to the area must be identified and demarcated clearly.

b. Loading site must be identified away from animals.

c. A cleaning and disinfection station needs to be made available and should be away from any animals and an SOP for cleaning of all vehicles entering the biosecurity area must be adhered to.

d. Parking areas away from animal areas must be provided.

e. Vehicle movement pathways must be mapped.

f. Draw up a map demarcating all these areas.

g. The control boundary should always be respected and identified to all personnel.

h. No access of vehicles or personnel to the biosecure area unless via proper decontamination protocols. People with any suspected contact with infected animals (or having been in an affected area) should stay away from "clean animals for at least a week.

i. Access points should be respected, well demarcated and procedures of access described. Biosecurity Guidelines-FMD 2019-11-19 2

j. Animals arriving on the farm should only be directly from a guaranteed healthy herd accompanied by signed and dated veterinary health certificates.

k. Personnel entering the biosecure area should shower and change clothing before entering the area.

l. Logbooks of all persons, vehicles, equipment etc entering or leaving the biosecure area should be kept.

m. No entry of persons, vehicles or products should be allowed if not expressly permitted by the biosecurity officer.

n. Feed brought into the biosecure area should only be from sources determined by the biosecurity manager.

o. For further information go to www.securebeef.org

9. Quarantine:

a. For extra security cattle should be quarantined at least 100 meters for 21 days away from the herd.

b. There will be absolutely no contact with the herd either directly or indirectly.

c. They should only be introduced after clinical (and preferably serological) evaluation.

It is now the time that we take ownership of our own industry!!!!!!!!

The basis of Disease Control is Animal Identification and Tracebility

Visit: https://www.icar.org/index.php/certifications/animal-identification-certifications/

Summary of disease report for July 2020

148 Reports from veterinary practices and laboratories were received (Mpumalanga (MP) 11; Gauteng (G) 12; Limpopo (L) 8; Northwest (NW) 17; Free State (FS) 30; KwaZulu-Natal (KZN) 11; Eastern Cape (EC) 19; Western Cape (WC) 20: Northern Cape (NC) 9; Feedlots (FL) 2; Mastitis consultant (MC) 1 and Laboratories (Lab) 8)

A list of diseases and conditions reported by veterinarians in 5 or more provinces

Disease or condition	Number of provinces reporting
Resistant roundworms	9
Wireworm	9
Orf	9

Abortions	9
Abscesses	9
Eye infections	9
Mastitis	9
Dystochia	9
Coccidiosis	8
Anaplasmosis	8
Warts	8
Ringworm	8
Energy deficiency	8
Diarrhoea	8
Eye cancer	8
Lameness/foot problems	8
Lung infection	8
Poor concption	8
Retained afterbirth	8
Uterine prolaps	8
Roundworms	7
Blue ticks	7
Trichomonosis	7
Blackquarter	7
Pulpy kidney	7

Tetanus	7
E. coli	7
Pasteurellosis	7
Protein deficiency	7
Stillbirths	7
Joint ill	7
Navel ill	7
Trauma	7
Milk fever	7
Tapeworms	6
Cryptosporidiosis	6
Biting lice	6
African red water	6
Vibriosis	6
Enzootic abortion	6
BMC (snotsiekte)	6
Tulip toxicity	6
Traumatic reticulo-peritonitis	6
Downer	6
Metritis	6
Exposure to cold	6
Bont-legged ticks	5

Asiatic red water	5
Red gut (cattle)	5
IBR	5
Urea	5
Calcium deficiency	5
Selenium deficiency	5
Blue udder	5
Acidosis	5
Theft	5
Trauma (fractures)	5

Bovine Brucellosis

Although we have made positive steps in controlling Bovine brucellosis, the model disease stated in the Veterinary Strategy, we as a country is far from achieving our goal!

If farmers will just comply by vaccinating their animals against brucellosis, according to law, the incidence of brucellosis will drop dramatically as shedding of bacteria will drop!

Many farmers are still shrugging their shoulders and saying: “Why should I test my animals as it will only cost me money and what if there are positive animals? My farm will be placed under quarantine, so I am not going to test my animals!”

Dr. Trudie Prinsloo a veterinarian and legal advisor has compiled legal aspects regarding brucellosis control and it is VERY IMPORTANT that you should avail yourself with the content of this document.

It is available in English and Afrikaans.

http://nahf.co.za/brucellosis-legal-aspects-2018-12-11/

When buying cattle this Vendor declaration can help you to minimize risk!

VENDOR DECLARATION BOVINE BRUCELLOSIS

I hereby declare that I am the legal owner or authorised representative of the cattle on sale and am competent to make this declaration

1	The cattle for sale are clearly and permanently identified		Yes	No
2	The cattle for sale/slaughter were born on my farm		Yes	No
3	The farm has a closed herd policy i.e. I do not buy in cattle, rent out grazing or speculate with cattle		Yes	No
4	I practice bio-security on my farm to a level that is **	Poor	Moderate	Good
5	I vaccinate my heifer calves against Bovine Brucellosis once between the ages of 4 – 8 months		Yes	No
6	In addition, I vaccinate my cattle older than 8 months with RB51		Yes	No
7	I have all the cattle on my farm tested for Bovine Brucellosis		Yes (date)	No
8	My herd has been tested negative within the past year		Yes	No
9	I did not buy in cattle since my last negative brucellosis test		Yes	No
10	I/my vet investigates any abortions on my farm		Yes	No
11	To the best of my knowledge, my immediate neighbours and farms in my area are free of Bovine Brucellosis		Yes	No
12	I use a veterinarian to advise me on my cattle's herd health		Yes	No
13	The cattle handling facilities on my farm are	Poor	Average	Good

Note: Vaccination does not mean freedom from Bovine Brucellosis as cattle can still be carriers
Please attach the most recent *Brucella* blood test certificate

Owner or authorised representative: ……

Signature: ……

Date: …….

** * Biosecurity

Poor – speculates with cattle, does not vaccinate, poor fences, cattle come into contact with other cattle

Medium – Vaccinates heifers, does not buy in cattle of unknown health status

Good – closed herd/never buys in cattle, vaccinates heifers and no contact with other cattle, follows a herd health plan as advised by his veterinarian, does not allow transport trucks onto property, washes and disinfects truck after returning from the abattoir or auction grounds.

Compiled by: Dr. Sewellyn Davey, Chairman of the Brucellosis Steering committee of the National Animal Health Forum

OVINE JOHNE'S DISEASE VENDOR DECLARATION

ON THE SALE OF SHEEP

(Updated Draft May 2015)

1. I hereby declare that I am the owner or authorised representative of the sheep on sale and am competent to make this declaration.	**YES**	**NO**
2. The sheep for sale are clearly identified in the accompanying description.	**YES**	**NO**
3. The sheep for sale were born on my farm.	**YES**	**NO**
4. The farm has a closed flock policy. (No live sheep are brought onto the farm from elsewhere)	**YES**	**NO**
5. I know the signs of the disease and to the best of my knowledge, all of my properties are free of cases of Ovine Johne's Disease.	**YES**	**NO**
6. I have actively looked for Ovine Johne's Disease and have had tests done for this.	**YES**	**NO**
7. To the best of my knowledge, my immediate neighbours and farms in my magisterial district of my farm(s) are free of cases of Ovine Johne's Disease.	**YES**	**NO**
8. The sheep on my properties have been vaccinated against Ovine Johne's Disease and are clearly marked with the approved ear tag.	**YES**	**NO**
9. All lambs born are vaccinated	**YES**	**NO**
10. If vaccinated, the number of years that the vaccinations have been done is		**years**

NOTE: Vaccination does not mean freedom from OJD, vaccinated animals can still be carriers.

Statement 8 and 9 apply only to already infected flocks, and such sheep can only be sold to other infected flocks by law.

Buyers should consult their veterinary advisor before any purchases.

_____ _____

Signature Date

_____ Farm: _____

NAME

_____ District: _____

OWNER OR AUTHORIZED REPRESENTATIVE

The use of this declaration is supported by the following organisations:

Dohne Merino NERPO UNIVERSITEIT VAN PRETORIA UNIVERSITY OF PRETORIA YUNIBESITHI YA PRETORIA RUVASA

SOP for the control of Bovine Brucellosis

Audit date:_____

Authorised person:_____

		Y/N	Comment
1	Fences and gates in good condition		
2	Gate control - log in		
3	Disinfection of vehicles coming onto the farm		
4	Protective clothing and boots given to people visiting the farm (cattle area) coming from high risk areas eg. veterinarians, nutritionists, representatives, truck drivers, workers, etc.		
5	Sterilizing equipment coming in contact with cattle		
6	Run off water/ streams from neighbouring farms		
7	All animals identified with a brand mark and ear tag		
8	Data base of all animals		
9	Closed herd		
10	When last were animals bought in or moved from another farm?		
11	Only buy in animals from a farm which has a recent negative tested brucellosis herd certificate		
12	Origin(s) of acquired cattle? Bought at an auction?		
13	Keep heifers separate from herd until they have calved and tested negative for brucellosis		
14	Quarantine camp available		
15	Separate calving camps		
16	Were all heifers vaccinated between 4 and 8 months vaccinated with Strain 19 or RB51?		
17	Any cattle vaccinated with Strain 19 over 8 months of age? History over last few years.		
18	Were there any abortions on the farm – samples taken, diagnosis?		
19	All sexually mature cattle in herd tested for bovine brucellosis (provide proof)		

20	Bovine brucellosis is a State controlled disease. Positive cattle are branded with a C on the right side of the neck.		
21	Isolation of infected animals & separate handling facilities		
22	Prohibition of movement of animals off quarantined property except under cover of a Red cross permit for slaughter at an abattoir		
23	Prohibition of use and on-farm disposal of unboiled, unpasteurised or unsterilised milk on quarantined property		
24	Disinfection of places where infection is a possibility.		
25	Neighbours/ recent buyers informed of infected herd status		
26	Fly, crow and predator control		
27	Destruction of afterbirths/abortions in a responsible manner		
28	Beware of livestock, game interface		

Websites that are there to help you with information regarding animal health:

National Animal Health Forum

www.nahf.co.za

Read what the Forum is all about:
http://nahf.co.za/about/

This website will become the information centre of animal health in Southern Africa.
On the toolbar click on **Stakeholders** and you will find links to producer organizations and other organizations who are participating in the NAHF
http://nahf.co.za/stakeholders/

Provincial Animal Health Forums have their own site – click on **Provinces** http://nahf.co.za/provinces/

Important is to study the Veterinary Strategy (2016 -2026) as it gives direction to where we are going with Animal Health in South Africa.
http://nahf.co.za/wp-content/uploads/Vet-strategy-final-signed.pdf

Click on **Info centre** for more information on the "war" we have against Bovine Brucellosis. Please be up to date on the role all have to play to control this zoonotic disease.
http://nahf.co.za/category/diseases/brucellosis/

Information on other controlled diseases (Foot and Mouth Disease, Ovine Johne's Disease, Pest of small stock – PPR, and African Horse Sickness) is available.

This link will continuously be updated.

Information on **antibiotic resistance** is also available at this address:
http://nahf.co.za/category/antibiotic-resistance/

Rural Veterinary Association of South Africa

www.ruvasa.co.za
Click on **Disease reporting** where maps and information can be sourced on the prevelance of diseases in all provinces. Abattoir reports are available. Use the information available to update management programmes

Landbouweekblad's webpage

www.landbou.com
Kundiges
Vra vir Faffa
Lees alle antwoorde
Beeste
Siektes
Brusellose

The following can be typed in the "Soekblokkie"

Stop Brusellose

Gevaar om Beesbrusellose (BBR) deur vendusies en skoue te versprei
Rapportering aan bure of ander eienaars oor die voorkoms van brusellose

Inligting oor brusellose op die NAHF se webblad

Kuddebestuur voor die dekseisoen

Bees Brusellose handleiding

Teenliggaamwaardes om beesbrusellose in koeie te bepaal

Veterinêre Strategie 2016 -2026

'n Dosyn dinge wat jy moet weet van beesbrusellose

Vyf kernfeite wat jy van beesbrusellose (Besmetlike misgeboorte – BM) behoort te weet

Veiligheid van vleis en biltong afkomstig van 'n bees met brusellose

Vervoer van diere uit 'n positiewe brusellose kudde

Beheer van brusellose in ‘n beeskudde

Boerderypraktyke wat die gevaar van die voorkoms van brusellose verhoog

Pak brusellose by die horings

Brucellose kan jou lewe verwoes

Brusellose in wild

Bestuur van positiewe besmetlike misgeboorte beeste

Aankoop van beeste wat besmetlike misgeboorte het

Antwoorde oor brusellose

Behandeling van besmetlike misgeboorte

Besmetlike misgeboorte uitbreek in ‘n kudde

Gevaar van brusellose onderskat

RB51-inenting teen brusellose in dragtige koeie

Alles oor Besmetlike Misgeboorte (BM)

Kompensasie vir BM en TB positiewe beeste?

Nóg vrae oor besmetlike misgeboorte

Koeie positief getoets vir besmetlike misgeboorte

Vrae, antwoorde oor besmetlike misgeboorte

Brucellose: Wat staan ons te doen?

Internal parasite control

www.wormx.info

Farm gates, Fences and Forsight, the 3 F’s!

Bear this in mind as this is where most disease-causing organisms enter or exit farms!

Major examples are: Foot and mouth disease, brucellosis, Johne’s disease, TB, cryptosporidiosis, trichomonosis, vibriosis, sheep scab, resistant parasites such as red lice, blue ticks and internal parasites (Buyer beware programmes).

Insist on VENDOR'S DECLARATIONS when buying animals.

Quarantine

Immunization programmes

Speak to your veterinarian

Abide the law- vaccinate cattle against anthrax and heifers against brucellosis!

For the detailed report and previous reports go to www.ruvasa.co.za and click on Disease reporting

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	
Resistant roundworms	x	x	x	x	x	x	x	x	x
Wireworm	x	x	x	x	x	x	x	x	x
Brown stomach-worm							x	x	
Long-necked bankruptworm									
White bankruptworm									
Large-mouthed bowelworm									
Nodularworm					x				
Lungworm									
Eyeworm				x	x				
Parafilaria									
Tapeworms	x	x		x	x		x		x
Liver fluke	x				x		x	x	
Conical fluke	x				x	x	x		

Cysticercosis (measles)				x				x	x
Schistosomiasis (bilharzia)									
Coccidiosis	x	x		x	x	x	x	x	x
Cryptosporidiosis	x			x	x	x	x	x	

As can be seen from the reports, wireworm, cryptosporidiosis and coccidiosis were the main internal parasite problems. Most farmers tink that parasites are not a roblem in winter, but these reports prove ths to be wrong. Alarming was the reporting of internal parasite resistance to anthelmintics. He Presently 10 groups of anthelmintics (numbers are on the lables of drugs) are registered, make sure by doing regular evaluations whether the anthelmintics used are still effective in your flock. Contact your veterinarian to assist you in making the correct active group choice!

As animals graze in vleis during the winter months, be aware of liver fluke outbreaks. Water and mud snails are the intermediate hosts of liver flukes.

HOLISTIC INTERNAL PARASITE MANAGEMENT FOR SHEEP AND GOATS

Gareth Bath, Jan van Wyk and Faffa Malan

INTRODUCTION

Over the past ten to fifteen years there has been a radical rethink on our previous worm control strategies and assumptions due to the ever-accelerating failure of anthelmintics globally. This has caused a quiet but drastic revolution in many of the “received wisdoms” which governed advice to farmers for close to a century.

For a start, we have to abandon the underlying philosophy that internal parasites are an evil plague which should be maximally suppressed, or preferably eradicated. We have to learn to live with parasites, and prevent only the unacceptable production losses, while simultaneously breeding animals fit for the environment, rather than making the environment fit for existing animals. By regarding parasites as part of the natural order of things, we will be able to see them simply as potential problems to be managed in order to achieve optimum productivity and profitability.

Only well integrated, holistic planning has a long-term chance of success, and unless all elements of our potential armamentarium are harnessed, the results will not match the expectations.

While this paper applies to helminths, and mainly nematodes, the parallels and inferences which can be made for ectoparasites, and indeed other organisms, should be obvious.

I WORM MANAGEMENT PRINCIPLES

A FLOCK MANAGEMENT REQUIREMENTS

- **Separation of Groups**
  Since different classes of animals vary in their susceptibility to worm infection and its effects, they should be separated into groups, which are grazed, treated and managed as distinct entities. If these distinctions are not made one may be forced to treat the flock according to the most susceptible group. The most susceptible groups can still be managed and treated more intensively in a mixed flock, but this becomes more difficult.

- **Identify the groups most at risk**
  Research has shown that the more susceptible animals are lambs/weanlings; and pregnant/lactating ewes. The former are susceptible because they cannot yet mount an effective immune response to infection, the latter are prone to infection because of a temporary suppression of immunity. (PPRR). These groups must get special attention.

- **Separation of pastures**
  Unless pastures can be divided by fencing or herding, all sheep will be exposed to a similar challenge, regardless of whether they are susceptible or resistant to infection and its effects. This will prevent any differentiation in management and treatment. Diversion of pastures is not only good for internal parasite control, it also aids pasture management. Electric fences can be used as temporary pasturage dividers. In communally farmed areas, herding or tethering can achieve the same result without fencing.

- **Resting of pastures**
  If pastures can be separated, it is then possible to rest them effectively, which has decided advantages to pasture management and improvement. If such pastures can be rested long enough, this will also have a significant effect on the survival of worm larvae and therefore the infection rate of the flock. Although the time needed for effective resting of pastures will vary with the climate, weather and worm species, a useful rule of thumb for effective resting is at least 3 months in subtropical for temperate climates, but as little as 1 month in the tropics. The longer the rest, the better it is for worm management.

- **Alternation of host species**
  Sheep and goats share the same worm species and alternation with one another is ineffective for worm management. However, other species like cattle, horses and ostriches are generally not susceptible to the worms of sheep and goats. If they are used to graze pastures before or after sheep or goats, they act as "vacuum cleaners" on the pasture, as they ingest many larvae which cannot develop further into egg-laying adults. The other advantage is that the pasture can still be utilised in its growing season, which prevents the grass from becoming senescent, and optimises its usefulness. This aids in maintaining the profitability of the farm.

- **Mend water leaks**
  Water points (troughs, windmills) should not be allowed to leak, as this encourages the growth of grass. Since this is where sheep concentrate, the area can become lethally contaminated by larvae.

- **Avoid grass in pens**

Where sheep or goats have to be penned for lengthy periods (usually at night, to combat theft or predation) there can be a fatal buildup of larvae on the grass growing there. Sheep become hungry overnight and will eat these morsels of food. In consequence they will ingest massive numbers of larvae. It is therefore necessary to remove all grass from such pens.

- **Fence off moist areas**
  Areas particularly prone to high moisture and therefore the survival of worm larvae, like streams and marshes, should be separated to reduce the challenge of the flock.

- **Strategic movement of flocks**
  The aim should be to create "safe" (not necessarily "worm free") pastures. By planning changes in camps or paddocks, stock will be subject to lower challenges and need less chemical treatment. Any grazing system where a significant proportion of the pasture is rested for a full growing season will be particularly effective.

- **Quarantine and treatment**
  Do not simply introduce purchased animals into the flock or herd. They must be quarantined in a worm-unfriendly pen (bare earth or concrete) and treated intensively using the best drugs and schedule. If financially feasible, do an FECRT to ensure minimum carry-over of drug-resistant parasites. Then place them on infected pasture if there is no multiple resistance.

B GENETIC SELECTION

- **Selection for resistance**
  Resistance (the acquired or innate ability to prevent or minimise infection by parasites) is heritable and can be selected for, by measuring the faecal egg counts and using only those sheep with the lowest FEC's for breeding. For practical and economical reasons, this is usually only done for rams. Some successful breeding programmes have been undertaken but they require good organisation and meticulous record keeping. Culling of bad ewes and their offspring is also practical and recommended.

- **Selection for resilience**
  Resilience (the ability to withstand the effects of infection and produce satisfactorily in spite of it) is also heritable. At present, only two proven methods, FAMACHA© and Haematocrit determination exist, although preliminary results suggest that Body Condition Scoring may also be useful. The FAMACHA© System can be used only where wireworm is the major parasite. By treating according to clinical anaemia (an indicator of poor resilience), only those sheep unable to cope with wireworm are treated. This reduces selection pressure for anthelmintic resistance and at the same

time allows the farmer to cull the non-copers, in the long term thus being able to breed an animal better adapted to the environment.

It is also possible to select rams by a system of allocation of selection indeces. This is currently under investigation and will require measuring individual ram FECs and FAMACHA© scores (or haematocrits) to make the measurement more accurate.

C MONITORING SYSTEMS

- **FEC**
  Regular (monthly or 2 - monthly) monitoring of faecal egg counts on a group or flock basis will help to indicate when dosing is really needed, and equally important, when it can be delayed or even omitted. A bulk (composite) FEC comprising a single count of faeces pooled from equal samples from 10 to 20 sheep is certainly cheaper than dosing the whole flock unnecessarily. Keep graphs or tables of changes to indicate when parasite buildup is likely.

- **FECRT**
  Every farmer should have the flock tested for drug resistance in the worm population on his farm, at regular intervals of not less than two years. Only by knowing exactly what the state of anthelmintic resistance on a farm is, can appropriate action be taken. Generalisations like "benzimidazole resistance is found on most farms" are not much use since they cannot tell us what the situation is on a particular farm. Just as important, we must know not only that resistance is present, but also how bad it is. Can we still use the drug group at all? Separate bulk faecal samples from each drug group will reduce the cost to acceptable levels.

- **FAMACHA© evaluation**
  Apart from selection and culling, this system also allows frequent, cheap and easy monitoring of the current situation as regards worm infection, but applies only to haemonchosis.

D OPTIMISE ANTHELMINTIC USE

- **Establish the important parasites species present**
  Unless the prevalence and importance of worm species is known, worm management becomes dangerous and unpredictable guesswork. It can also be ineffective and very costly.

- **Use the most suitable drug**

If the parasites are ranked in order of economic importance and their susceptibility to groups of anthelmintics is known and combined with knowledge on the anthelmintic resistance situation on the farm, it is then possible to decide which drug(s) and formulations will be the most suitable in each situation. This includes their cost and a cost/benefit analysis. Neither the cheapest nor the most expensive drug is necessarily the best one to use. Beware of generic drugs sold by an unknown company.

- **Avoid too frequent treatment**
  The old approach of "dosing clean" must be completely abandoned, although not by reducing the dosage rate per animal. The aim has to be to treat only sufficient times and enough individual animals to maintain the equilibrium between parasite, host and environment (that is, worm management). Overtreatment ensures that only resistant parasites can survive. Minimal treatment programmes must be the new watchword, but is must be ensured that every treatment is effective.

- **Treat all and stay**
  This is a major departure from the recommendations made for close to a century. If **all** sheep are to be treated, they should remain in the camp (paddock) where they were grazing before treatment. This will prevent sheep from contaminating a new pasture with only those resistant parasites which survived treatment, thus in the process unwittingly causing the selection for resistance parasites. In most cases they should remain in the paddock for at least 2-3 weeks after treatment to pick up unselected larvae for propagation of the susceptible worms in the new camp/paddock. However, should a long-acting anthelmintic be used, this period will have to be longer (2 to 3 weeks after the effective residual action ends). Particularly bolus (slow release) formulations should be used with great caution.

- **Treat selectively**
  It is preferable to treat only those sheep or goats unable to cope with the current infection challenge, provided the percentage of non-copers remains below 20%. This can be done with the FAMACHA© system for haemonchosis, or possibly with Body Condition Scoring for other parasites. If clinically unaffected animals are left untreated, an immediate move to new pasture will not be detrimental. In the absence of such selective treatment, just leaving a small percentage (10-25%) of the flock intentionally untreated can be beneficial to slow AR development.

- **Move then treat**

  Another way of achieving the same result as "treat all and stay" is to move the flock to a new "safe" pasture and delay treatment for 2-3 weeks, to allow the seeding of the new pasture with unselected worms, before treating the flock.

- **Herbal Remedies**

  These are often touted as the answer to worm control. However, unless they have been properly tested an proven by an independent body, they may be useless or even harmful.

E IMPROVED ANTHELMINTIC EFFICACY

- **Dose over the tongue**

  By placing the tip of the gun towards the back of the mouth, over the tongue, closure of the oesophageal groove does not occur and thus the full dose lands in the rumen where it is absorbed more slowly - this is particularly important for anthelmintic groups which rely on prolonged blood levels for their effect, like the benzimidazoles and macrocyclic lactones.

  This prolonged level of activity (a long so-called "killing zone") means that the drug against which worms have developed a moderate degree of resistance can be made more effective, although of course the resistance of the worms is not reduced, but rather partially overcome. However, dosing (drenching) over the tongue, if done carelessly, can result in two very severe consequences:

1. the dose can land up the lungs, and cause pneumonia
2. the nozzle of the dosing gun can penetrate he pharynx and cause severe, fatal infection.

If the sheep jumps forward, the operator must let the gun 'ride' with the sheep, and not oppose it, and the dose must be delivered by a measured, steady pressure rather than a single squeeze.

- **Reduce feed intake**

  It has been shown in the case of benzimidazoles and closantel that reducing feed intake (i.e. starvation) for 24 hours prior to treatment will improve the absorption of the remedy because of the lower rate of flow of ingesta. As in the previous case, this results in a more effective exposure of the parasite to the drug.

  In turn, this means that the drug is clinically more effective and can partially overcome drug resistance.

- **Repeat the dose**

  This only applies to benzimidazoles and macrocyclic lactones. Two doses given 12 hours apart will again increase the "killing zone" of these drugs, allowing more time for a cumulative killing effect. Thus, resistant worms can still be killed, although this is achieved at a cost since two normal doses rather than one are needed. A double dose, given at one time, will have **no** beneficial effect with these two groups of anthelmintics.

- **Increase the dose**

  This only applies to drugs which rely mainly on peak concentrations for their effect. In this case, a double amount of drug given at one time can overcome drug resistance in worms. This is useful for the imidasothiazoles (levamisole). There is however a relatively low safety margin, only 2x – 3x the therapeutic dose may sometimes cause problems of toxicity.

- **Correct dosage**

  It may seem too obvious, but a lot of problems are caused by not weighing sheep, not calibrating and checking the dosing gun for accuracy and repeatability, and not reconciling the amount of drug used with the number of sheep treated. Underdosing may be a factor leading to anthelmintic resistance, but it is more likely to be the cause of ineffective treatment.

- **Drug combinations**
  Combining drugs from different activity groups in one dose may temporarily improve the effective clinical action of these drugs, but only if each drug concerned is unaffected by resistance. However, many authorities believe that this will not slow the development of resistance and could even enhance it. If drugs are mixed, this can only be done if the formulation has been fully tested and carried by experts, in registered products. Home made combinations are dangerous and illegal. Such combinations often just give temporary relief and disguise the emergence of AR until it is severe and multiple.

- **Sustained delivery**
  Medicated blocks or controlled release capsules will increase the clinical efficacy of those drugs which rely on prolonged action for their effectiveness. However, we have to bear in mind that prolonged exposure to a drug at low levels will increase selection for resistance. This approach will therefore not be permanent, and should only be used for very specific, limited purposes (e.g. weaners on green pasture) and not the entire flock in all circumstances.

- **Goats are different**
  Because of differences in the rate of metabolising drugs, goats must be treated as different to sheep. This means that goats must often be given a higher dosage rate than sheep except where there is a possibility of toxicity. Note that many anthelmintics may not be registered for use in goats, or that the recommended dose given is the same as for sheep. Unfortunately, therefore if the product is not registered for use in goats, or the dosage rate is increases, the user has no legal redress if the product is used and fails, or causes losses.

F EFFECTIVE PLANNING

- **Use the expert**
  Knowledgeable veterinarians, who know the area, farming systems and risks can construct a simple, practical, economic and effective holistic worm management strategy. They can consult helminthologists where necessary.

- **Use a programme**
  Unless a basic planned system is in place and is used, actions will inevitably be largely reactive and based on *ad hoc* or panic decisions. But this does not imply a rigid adherence to the basic plan.

- **Flexibility**
  The programme must be flexible to allow for changes in weather, management and farming systems, drug costs or other factors.

- **Treatment strategy**
  It is probably true that on most farms animals are either dosed too often, or with inappropriate drugs, or at the wrong times, or with no coherent plan. By setting up a well thought out dosing plan, we can cut out ineffective doses which only add to the selection pressure for parasite resistance. This is one of the areas in which the knowledge and skills of the local vet are vital for success.

II OTHER MEASURES AND FACTORS

- **Protein supplementation**
  Since resistance and resilience are dependent on adequate nutrition, and the most important factor identified is protein, it is possible to ameliorate the effects of parasites by feeding animals better. We need to know when and how much of what supplement must be supplied to which class of animal, and what the cost / benefit ratio would be before this aspect can be fully integrated into our overall approach.

- **Condition scoring**
  The early indications are that this may be useful for identifying individual animals for treatment against some non-haematophagous worm species. The principle is that animals with a condition score which is more than half a score **below** the flock or herd average are treated. If the animals have a condition score below 2 and the risk of worm infestation is high, then treatment should be given.

- **Weather monitoring**
  Factors which affect the survival, development and infectivity of larvae on pastures must be considered. Temperature, rainfall, rainfall pattern, humidity and could cover will all have an effect and must be considered when making worm management decisions.

- **Flock/Herd history**
  Without knowing details of numbers, types, ages, reproductive stages, treatment, stocking rates, grazing pressures and livestock movements, decision making is at best arbitrary and at worst potentially disastrous.

- **Veld/pasture assessment and history**
  Coupled with livestock data, the advisor has to consider details of the veld or pasture type, its condition, growth stage, the soil cover, soil moisture, slope land the grazing history.

- **Assessment and decision support computer programmes**
  A few of these are available internationally, others are under development. Using computer power, they evaluate all the known risk factors and advocate alternative actions based on the given situation and data provided. The evaluation is of course only as good as the inputs given and these programmes cannot substitute entirely for the skills, knowledge and assessment of the advisor or the farmer.

III CONTROL MEASURES UNDER DEVELOPMENT

- **Predacious fungi**
  Nematophagous fungi in the soil can severely constrain larval survival by immobilizing and killing them. Practical implementation is, however, still a long way off.

- Dilution of resistance
  By the re-introduction of susceptible strains to a farm where a parasite strain has become resistant to anthelmintics, it is possible to significantly reduce the degree of resistance by a dilution effect. There is some indication that this can be effective on severely affected farms, by the process is slow, labour-intensive and costly.

- **Vaccination**
  Although this "holy grail" of worm control still remains a mirage as a practical, economical solution to worms, it is theoretically attainable and may be a potent factor when the problems which have prevented its commercial implementation are eventually overcome.

- **Condensed Tannins**
  Plants containing higher levels of tannins suppress worm egg counts, but also have problems with palatability and digestibility.

- **Cupric oxide**

Needles of oxidised copper wire dosed into the rumen will reduce worm egg counts, but the longterm toxic effects (especially with sheep) have to be considered, especially if the diet is high in copper.

- **Change in body weight**
  Lack of satisfactory weights gain, or even weight loss, can be considered as indicators for the treatment of individual animals in a flock. However, weighing is time consuming and may not be applicable in a given situation.

IV INTEGRATED PARASITE MANAGEMENT

If any of the foregoing principles are used exclusively, failure will be certain. It is only by using a prudent mix of strategies that sustainable, cost-effective measures can be established. The decision on which measures are to be used in a given situation can only be made by an expert who is conversant with local conditions. This programme will of course have to be drawn up in close consultation with the livestock owner(s).

Whether the farming system is based on communal ownership, subsistence farming, small-scale farming, commercial farming or stud farming, the principles remain the same. Only the mixture and weighting of measures used to manage parasites will vary according to circumstances.

V ACTION CHECKLIST

To implement the holistic use of all the available worm control strategies and principles, the veterinary advisor needs to go about setting up a sustainable programme methodically. The starting point is always the basic management programme, although even this may need to be modified to accommodate sustainable parasite control. Once the key activities like lambing, mating and shearing have been established, and the basic grazing programme has been decided, the requirements of effective parasite management may be superimposed. Planning is a dynamic and never-ending activity, and plans need to be revised each year as necessary.

By following the checklist, advisors can ensure that all appropriate measures have been considered and used.

- Make sure that the farmer understands and supports the need for change

- Ensure that all measures are practical, integrated and financially defensible
- Use an incremented approach, do not try to do everything at once
- Evaluate and use knowledge in stock flow, reproductive programme, grazing systems, pasture or veld conditions and weather to decide on appropriate and integrated worm management actions.
- Are the groups/classes of animals properly separated? If not, implement this if possible.
- Give weanlings and late pregnant/lactating ewes most attention and the best circumstances
- Are the pastures properly fenced, and are there enough camps for effective management?
- Implement a satisfactory pasture resting programme. Keep well rested pastures for susceptible groups
- Graze camps sequentially by cattle, small stock and other host species if available
- Make sure that animals are getting the right nutrition, especially protein, and avoid putting animals in poor condition onto high risk pastures
- Mend water leaks and fence off moist areas
- Remove all grass from pens where animals are routinely held for long periods
- Buy rams selected for resistance (FEC) and/or resilience (FAMACHA©/haematocrit)
- Cull the minority of ewes which are unable to cope with prevailing parasite burdens
- Institute a planned programme for FECs to monitor the parasite situation
- Ensure that the FECRT is done every second year
- Introduce TST and Institute the FAMACHA© system for haemonchosis or BCS for other worm species
- Ensure that the types and relative importance of parasites have been established on each farm as well as when they are likely to occur
- Select and use the best drug for each situation
- If all animals are treated, do not move to new pastures for 2-3 weeks or longer depending on the drug and formulation used
- Ensure that the drug used is given in the most effective way
- Quarantine and treat all introductions and put them onto infected pasture
- Stick to what is possible in a given situation

(Revised: August 2006)

FAMACHA cards can be obtained through your veterinarian (famachasystem@gmail.com)

Serious problems due to diarrhoea in lambs and calves were received from many areas. In many instances *Cryptosporidium* and pathogenic strains of *E. coli* were involved. Consult your veterinarian for help!

https://www.google.co.za/search?hl=en&tbm=isch&source=hp&biw=1344&bih=608&ei=PyxyXOO7OcutkwXinK3oCA&q=cryptosporidium+parvum&oq=Cryptosporidium&gs_l=img.1.1.0l10.2885.9850..16402...0.0..0.708.5719.2-4j4j3j2j1.....0....1..gws-wiz-img.....0.o66yefU7Ric

Prevention of Cryptosporidiosis

Prevention is the best control method.
Animals with a well-developed immune system will generally overcome *Cryptosporidium* thus this must be the main aim in controlling *Cryptosporidium*.
A consistent, vet approved and farm appropriate vaccination program for other diseases.
Ensure no nutritional deficiencies especially vitamin A and Selenium
Excellent bio-security
Ensure clean pathogen free water sources
Hygiene training of personnel
Consult your veterinarian

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		x
Resistant blue ticks					x	x			
Heartwater ticks	x	x				x	x		
Brown ear-ticks						x			
Bont-legged ticks	x	x		x	x				x
Red-legged ticks	x			x	x				
Paralysis ticks						x			
Tampans									
Biting lice		x		x	x	x		x	x
Sucking lice				x	x		x		x
Fleas									

Itch mites					x		x		
Sheep scab	x	x			x				
Mange mites	x	x		x	x				
Nuisance flies					x	x		x	
Midges									
Mosquitoes									
Blowflies					x				
Screw-worm									
Gedoelstia (uitpeuloogsiekte)									
Nasal bot	x			x	x				

Blue ticks (African and Asiatic blue ticks) are able to transmit red water, anaplasmosis and lumpy skin disease.

Make sure to assess the blue tick resistance status on your farm before buying tickicides. Your veterinarian will be able to collect engorged blue ticks to be tested for resistance.

Actives to be tested for resistance are: organophosphates, pyrethroids, amidines, fipronil. Actives registered only for controlling blue ticks are: macrocyclic lactones, fluazuron (acaracide growth regulator).

Discuss your tick control programme with your veterinarian. Immature stages of multi-host ticks are prevalent in winter, especially in the ears. By treating cattle where brown ear-ticks are a problem, fewer adult ticks will be seen in summer!

Lice and mange infections increase during the colder winter months. Immunity to these parasites decreases as protein and energy become less available due to malnutrition.

Now is the time to update your management programme with the help of your veterinarian!

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	
Asiatic red water	x				x	x	x	x	
Anaplasmosis	x	x	x	x	x	x	x	x	
Heartwater	x	x				x	x		
Lumpy skin disease					x	x		x	
Corridor disease									
Theileriosis							x		

Asiatic red water is spreading and is one of the deadliest diseases in cattle.

Numerous mortalities were reported!

Anaplasmosis outbreaks were reported from 8 provinces. Biting flies are the main transmitters of this disease.

Red water and analasmosis can be confirmed by examining blood smears under a microscope.

The keyword is vaccinate your animals! Contact your veterinarian.

Tick toxicosis

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

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	
Pseudo Lumpy skin disease (Allerton virus)									
Ephemeral fever (Three-day-stiff sickness)									
Blue tongue				x				x	x

Rift Valley Fever									
Wesselsbron									
Nagana						**x**			

Due to colder weather conditions insct numbers have died down. Vaccines are available, the only reason why there were so many outbreaks of lumpy skin disease, blue tongue and three-day-stiff sickness could be that animals were not vaccinated or that the cold chain was broken! Now is the time to plan your vaccination programme!

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**
Vibriosis				**x**	**x**				
Pizzle disease					**x**			**x**	
***Actinobacillus seminis* plus HPA**									

New cases of **trichomonosis** are reported every month and this disease is out of control.

Make sure to buy bulls from farmers where biosecurity measures are in place and bulls are tested for these diseases at regular intervals. Trichomonosis (7 provinces) and vibriosis were also reported from 6 provinces.

Venerial disease is a HERD disease! Calculate your losses if these diseases are not eradicated on your farm!

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 or infected neighbouring bulls are jumping fences.

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.

Study the Good management SOP's for cattle farmers on the RPO website

http://www.rpo.co.za/wp-content/uploads/2016/04/nuutRPO-NERPO-Code-Addendum.pdf

http://www.rpo.co.za/wp-content/uploads/2016/04/nuutRPO-NERPO-Code-Addendum-4-Good-management-practices-and-SOPs-for-cattle-farmers-1.pdf

Consider Trichomonosis as an area disease, farmers should work together to keep areas free from diseases such as trichomonosis, brucellosis, tuberculosis, Johne's disease and sheep scab.

Bacterial diseases

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

Bacterial diseases	MP	G	L	NW	FS	KZN	EC	WC	NC
Anthrax									
Blackquarter	x	x		x	x	x	x	x	
Clostridial disease				x					
Botulism				x		x			
Pulpy kidney		x		x	x	x	x	x	x
Lamb dysentery	x								x
Swelled head	x	x			x	x			
Red gut (cattle)	x	x	x		x	x			
Blood gut (sheep)		x			x			x	x
Tetanus		x		x	x	x	x	x	x
Salmonellosis							x		
Klebsiella									
Bovine brucellosis	x			x	x	x			
Brucella melitensis (goats)									
Ovine brucellosis (Ram's disease)					x				
Bovine tuberculosis									
Johne's							x		

Leptospirosis	x								
Listeriosis						x			
Pseudomonas	x							x	
Pasteurella multocida									
Pasteurellosis (see pneumonia -lungs)	x	x		x	x		x	x	x
Fusibacterium necrophorum					x			x	
Septicaemia	x				x			x	
E. coli	x			x	x	x	x	x	x
Klebsiella								x	
Coxiella **(Q-fever)**					x				
Mycoplasma									
Enzootic abortion		x		x	x		x	x	x
Lumpy wool (*Dermatophilus*)								x	
Bovine dermatophilosis (Senkobo disease)									
Uterine gangrene								x	x
Wooden tongue				x					
Lumpy jaw									
Interdigital dermatitis									

Multiclostridial vaccines should be used if blackquarter outbreaks still occur when only using a vaccine containing *Clostridium chauvoei*. Remember to give a booster vaccine when using an inactivate vaccine for the first time. Read the packet insert!! Study the table above and determine the risk for animals on your farm.

Get advice from your veterinarian on *Cryptosporidium*/*E. coli* outbreaks in your area and what to do to prevent losses in lambs and calves.

Enzootic abortion contributes to the disappearance of foetuses in sheep and goats scanned pregnant. Vaccinate replacement ewes with the live vaccine before putting them to the ram!

Pulpy kidney (*Clostridium perfringens* type D – e*psilon* toxin) is still the biggest killer of sheep. There are various factors that could lead to pulpy kidney such as: the intestinal tract stops functioning (stasis), sudden change from poor veld to lush artificial pastures; sudden change in diet; grazing of fodder crops such as lucerne, green wheat and green oats, diet high in protein, overeating of concentrates or fertile pastures, deworming and coccidiosis infection. Sudden changes in the weather and grazing in wilted pastures, may also play a predispositional role.

Be sure to vaccinate animals against botulism especially if chicken litter is going to be fed to animals.

Q-fever, a zoonosis, seems to be more prevalent, beware! An abortion storm in sheep should make farmers aware of Q-fever!

Challenging farmer's unions and study groups to eradicate brucellosis in their area!! Many success stories are received!

Ask for vendor's declarations before buying in animals and quarantine them before releasing them onto the farm!!!!

A positive heifer is a TROJAN HORSE!!! This latent carrier of brucellosis may only test positive after calving!!!!!

PREVENTION IS BETTER AND CHEAPER THAN TREATMENT!

Do not save yourself bankrupt!

Q-fever, enzootic abortion, brucellosis, are all zoonotic diseases and should be handled with utmost care!

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 (cattle)									
BVD	x				x				
IBR	x	x			x	x		x	

BRSV						x			
PI3						x			
Maedi visna virus									
Rotavirus				x		x		x	
Coronavirus									
Enzootic bovine leucosis (EBL)					x	x	x	x	
Sheep leucosis									
Jaagsiekte						x			
Orf	x	x	x	x	x	x	x	x	x
Warts	x	x		x	x	x	x	x	x
Herpes mammillitis - goats									

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

Preventative vaccinations are the best way to protect animals against viruses and bacteria causing pneumonia.

Keep cattle and wildebeest well separated especially when wildebeest are under stress to prevent snotsiekte outbreaks! There is also a sheep associated form of the disease.

Snotsiekte was reported from 6 provinces!! Have a dialogue with your neighbour if wildebeest are in the area.

BMC is a notifiable disease and have to be reported to the State Veterinarian.

http://nahf.co.za/controlled-and-notifiable-diseases/

Discuss vaccination programmes and biosecurity measures with your veterinarian.

Orf is a zoonosis.

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	x	x

Protozoal diseases

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									
Crotalaria									
Gifblaar				x					
Gousiekte									
Cestrum (ink berry)		x			x		x		
Tulip	x			x	x	x	x	x	
Cynanchum (bobbejaantou)									
Facial eczema									
Lantana		x				x			
Prussic acid	x				x				
Damkweek (cyanide)									
Acacia nilotica									
Senecio					x				
Cotula nigellifolia (stagger wood)									

Geeldikkop (duwweltjies) and dikoor									
Vermeersiekte									
***Hertia pallens* (Nenta, krimpsiekte)**							**x**		
***Chrysocoma ciliata* (bitterbos)**									
Crotolaria (stywesiekte bossie)									
***Solanum incanum* (maldronksiekte)**									
***Gnidia burchelli* (Januariebos, besembossie, harpuisbos))**									
***Gomphocarpus (Asclepias) fruticosus* (milkweed)**									
***Heliotropium* (potato weed)**									
Bracken fern									
January bush (*Gnidia polycephalatus*)									
Chinkerinchee								**x**	
Ceylons rose									
Datura	**x**			**x**					
***Sarcostemme viminale* (melktou, caustic bush)**									
***Malva parviflora* (kiesieblaar)**									
Bitou									
***Cotula nigellifolia* (Stagger weed, stootsiektebossie)**									
Eucalyptus (bloekom) bark									
Kikuyu									
Ryegrass									
Grass staggers									

Lush pastures (Dikkop)									
Lasiospermum (Ganskweek)									
Paspalum staggers									
Phalaris aquaticum **(Phalaris staggers)**									
Photosensitivity (Turknael, *Erodium moschatum*)								**x**	
Photosensitivity (Stellenbosch)									
Photosensitivity									
Swelled head (toxicity)								**x**	
Lusern									
Mycotoxicosis								**x**	
Apergillus									
Aflatoxin									
Diplodiosis					**x**				
Lupins									
Soya									
Syringa berries									
Acorn									
Cycad									
Kraalbos, Geelbos (*Galenia africana*)									
Radish									
Carrot poisoning									
Onion poisoning									
Bracken fern									
Pollen beetle (*Astylus atromaculatus*)									

Water contamination									
Oxalates								**x**	
Nitrate									
Amaranthus									
Tannins									
Urea		**x**		**x**	**x**	**x**			**x**
Salt									
Snake bite					**x**				
Moth cocoons (impaction)									
Blue green algae					**x**				
Copper									
Selenium						**x**			
Zinc									
Zinc sulphite									
Fluoride									
Lead									
Alcohol poisoning									
Paraquat									
Phosamine									
Aldicarb									
Organophosphate									
Zinc phosphide									
Xanthium									
Pyrethroid									

Amitraz									
Levamisole									
Ivermectin									
Moxidectin									
Oxytetracycline									
Tilmicosin									
Bromoxynil nitrate									
Ionophor									
Monensin									
Hypo									
Diazinon									
Glyphosate									
Chicken litter									
Medicated maize seed									

Beware when buying in animals or moving them into rested grazing camps as they are the animals which usually eat toxic plants such as tulp (6 provnces) and ink berries (*Cestrum*).

Geeldikkop, due to sheep eating wilted duwweltjies have been reported.

Do have activated charcoal on the farm as the antidote for tulip poisoning! Dosage: 2 gram per Kg body weight, 1 Kg charcoal for 500kg animal. Toxic plants are sometimes eaten by young animals that do not know these plants. Be aware of this situation and know where these plants are growing on the farm.

Urea poisoning occurs every month on some farms – make sure of the dosage rate and rain wetting urea..

Every now and then goats die when thet are injected in the neck area, rather inject them in the tail fold.

Make sure that licks containing urea are mixed and formulated properly. Many mortalities were reported wher mixng instructions and calculations were not followed correctly!

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	x
Protein	x		x	x	x	x	x		x
Phosphate				x		x			x
Calcium	x	x			x	x		x	

Nutritional deficiencies were reported. It is important that ewes and cows receive sufficient supplementation so as to have optimal colostrum quality for their offspring!

Micro-nutritional and vitamin deficiencies

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

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

Members of RuVASA's hearts go out to our colleagues and their clients in drought-stricken areas!

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.

Selenium is a powerful anti-oxidant and necessary for immunity. Check the status of the herd.

Beware of fluoride poisoning as borehole water levels drop.

Supplement animals with vitamin A and Zinc during winter and drought conditions.

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	x	x	x
Stillbirths	x	x			x	x	x	x	x
Abscesses	x	x	x	x	x	x	x	x	x
Intestinal ulcers									
Bladder stones –urolithiasis	x		x	x	x				
Blindness	x	x			x				x
Bloat	x	x			x			x	
Blue udder	x		x		x	x		x	
Diarrhoea	x	x		x	x	x	x	x	x
Epididymitis	x				x			x	x
Eye cancer	x	x		x	x	x	x	x	x
Eye infections	x	x	x	x	x	x	x	x	x
Skin lymphoma									
Joint ill	x	x		x	x	x	x	x	
Cystitis									
Icterus									

Lameness/foot problems	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	x
Navel ill	x	x		x	x	x	x	x	
Umbilical hernia									
Red gut (sheep, torsion of gut)							x	x	
Rectal prolaps									
Rumen stasis									
Abdominal impaction									
Abdominal hernia									
Floppy kid synrome									
Swelsiekte									
Traumatic reticulo-pericarditis	x		x	x	x		x	x	
Trauma	x	x	x		x	x		x	x
Teeth wear									
Plastic bags (ingestion)									
Downer	x	x			x	x		x	x
Poor condition									
Anaphylactic shock									
Vestibular syndrome (middle ear infection)									x
Hernia									
Deformaties									
Wet carcases at abattoir				x				x	

Yellow carcases at abattoir								x	

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

The cause of abortions should be established: brucellosis, enzootic abortion, Q-fever, leptospirosis, Rift valley fever, etc. The necessary preventative measures can then be taken.

Lung diseases are killers in the winter. Excellent vaccines are available!

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	
Displaced abomasum						x		x	
Ketosis (Domsiekte)		x			x			x	x
Milk fever	x	x			x	x	x	x	x

Make sure that you adapt animals to feed containing concentrates as more and more cases of acidosis are reported when grazing animals on harvested maize fields.

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	x
Endometritis					x			x	
Metritis	x	x		x	x	x		x	
Hydrops									
Poor conception		x	x	x	x	x	x	x	x
Retained afterbirth	x	x		x	x	x	x	x	x

Sheath prolaps					x	x			x
Uterine prolaps	x	x	x		x	x	x	x	x
Vaginal prolaps	x	x		x	x	x	x	x	x
Penis injury									
Orchitis									

Secret of making money is to have an offspring of EACH heifer, cow, ewe or doe on the farm and wean that calf, lamb or kid EVERY YEAR!!

Vitamin A deficiencies occur in winter and supplementation may be worthwhile

A poor conception rate on many farms is a huge issue. Visit your veterinarian to rectify this problem.

Environmental conditions

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

Other conditions

	MP	G	L	NW	FS	KZN	EC	WC	NC
Dermatospraxis									
Genetic disorders					x		x		

Drug residues (milk, meat, liver, kidney etc)									
Preditors		**x**			**x**			**x**	
Theft/Sabotation	**x**	**x**			**x**		**x**	**x**	
Trauma (fractures etc)		**x**	**x**	**x**	**x**			**x**	
Trauma (veldfires)	**x**	**x**			**x**				

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

Adelaide _ Dr. Steve Cockroft
Beestekraal – Dr. Alwyn Venter
Cape Town – Dr. Sophette Gers
George – Dr. Mark Chimes
Grahamstown – Dr. Mendez
Harrismith – Dr. Wim Slabber
Kareedouw – Dr. Marten Bootsma
Malalane – Drs. Van Sittert and Van Sittert
Ottosdal – Dr. Sharnelle Ferreira
Stellenbosch – Dr. Annelie Cloete
Vanderbylpark- Dr. Kobus Kok

Ostriches

Western Cape

Oudtshoorn

Tapeworms	1
Red gut	3 - Feed intake up and down/ leads to gastro-intestinal tract disturbance and red gut – clostridial enteroxaemia
Mycoplasma	3 - Airsacculitis, wind cold, poor body condition Temp fluctuations/ dust/ cold – increased moist rales, rhinitus and sinusitis, more pronounce post cold spell.
Selenium deficiency	2
Lameness	3
Diarrhoea	3
Soil pica and rectal prolaps	3 - Adaption to intensive feeding in cold wet weatehr = moist areas in camps and soil pica
Protein, Energy deficiency, poor growth	3 - Energy playing an important role, insufficient eating time with shorter days, last chciks of season severe heato f late summer and now cold spell and rain– becomes a negative/ catabolic downard spiral
Cold exposure	3
Rectal prolaps/ Cryptosporidium	3 -Soil pica and heat stress = cryptosporidium overgrowth
Cloacal prolaps	1
Weakness	3 - Protein and energy deficiency – late chicks more severely affected, insufficient time to feed (daylight/ high temp), high demand for energy (cold evenings), underlying infections chronic enterotoxaemia and airsacculitis.
Capture myopathy	1 - Suspect Vit E Se def as birds respond well to treatment byinfeed medication Common simptoms are weakness/ unable to stand in birds with a good body condition. Captured chicks on game farm showing capture myopathy
Cold exposure	3

Equines

Limpopo
Hoedspruit
Babesia – 1
African Horse Sickness – 1 survived

Free State
Parys
Opthalmia - 2

Eastern Cape
Humansdorp
Babesia – 1
African Horse Sickness – 1 survived
Port Alfred
Neorological case – 1 Suspect *Cynanchum* toxicity, Bathurst

Game

Gauteng
Bapsfontein
Capture myopathy - 1
Magaliesburg
Heartwater - 2
Pretoria
Intestinal roundworms - 1

Limpopo
Bela-Bela
Snare – Springbuck with rope around foot (died)
Diarrhoea – Sable with severe diarrhoea
Poor condition – Sable cow, boosted her, improved
Trauma – White rhino bull fought with other bull
Capture myopathy – Buffalo, inflamed intestines, euthanazed animal
Trauma – Eland with broken horn
Brits
Wireworm – 5 out of 25 sables treated
Trauma – Elephant in veld fire, trated burn wounds, recovered
Hoedspruit
Internal parasites – Sable
Orf – 2
Closantel toxicity – 2
Opthalmia – 3
Abscesses – 2
Snares – Zebra, Giraffe

Trauma – Rhino fighting
Modimolle
Snares - numerous

North West
Klerksdorp
Intestinal roundworms – 1
Copper deficiency - 1
Schweizer-Reneke
Blue ticks – 2
Red-legged ticks – 2
Acute pasteurellosis – 3 poor condition
Protein, energy malnutrition -3 (Buffalo, springbuck)

Free State
Smithfield
Rabies - Aardwolf

Eastern Cape
Humansdorp
Illthrift – Blesbuck, anaemia, emaciation on sandstone and dunes

Llama
Limpopo
Bela-Bela
Dystocia - recovered

Swine
Gauteng
Ondertepoort
Dog bite wounds - 1

Eastern Cape
Graaff-Reinet
Tulip poisoning – 2
Port Alfred
Trotter cracks and infection - 2 cases, Clumber
Mastitis – 1 case, Clumber

Western Cape
Ceres

Bruising, resemblesdiamond skin disease- 1
Malmesbury
Metritis – 1
Trauma - 1

Monthly report on Livestock and Wildlife isolations for July 2020 from Vetdiagnostix –Microbiology Laboratory, supplied by dr. Marijke Henton

(henton@vetdx.co.za**)**

RuVASA monthly reports

Vetdiagnostix; bacteriology

Bovine Respiratory Disease yielded *Pasteurella multocida* [10], *Mannheimia haemolytica* [9], *Histophilus somni* [8], *Mycoplasma* [2] and one each of *Trueperella pyogenes, Mannheimia* biovar 10, *Mannheimia* biovar 8b and a methicillin resistant *Staphylococcus aureus*.

Clostridial myositis in cattle was due to *Clostridium chauvoei* [4], *C. novyi* [3] and one case of *C. perfringens* type A.

Calf enteritis was associated with *E. coli* [11], with over half [6] of them due to ESBL [Extended Spectrum Beta Lactamase] isolates, which are not only resistant to all the penicillins and cephalosporins, but many other antibiotics as well. There were also cases of *Salmonella* Dublin and *S.* Typhimurium.

Abortion in cattle was due to *Trueperella pyogenes* [2], *Brucella abortus* and *Salmonella* Typhimurium. Infertility in bulls on a farm was due to *Histophilus somni* and *Trueperella pyogenes*.

Trueperella pyogenes also caused septicaemia in cattle.

Pneumonia in sheep was due to combined *Pasteurella multocida* and the anaerobe *Prevotella* in one case. *Histophilus somni, Mannheimia haemolytica* and *Trueperella pyogenes* [one case each] were also isolated from pneumonia. Septicaemia in sheep was due to *T. pyogenes* [2] and ESBL *E. coli* [2].

Abscesses in goats and sheep was due to *Corynebacterium pseudotuberculosis* on two farms.

E. coli caused enteritis in three cases.

An unexpected cause of myositis was *C. chauvoei* in sheep.

Eye infections yielded *Klebsiella pneumoniae* and *Pseudomonas aeruginosa*. Both would only be secondary infections, and not primary ocular pathogens.

E. coli caused septicaemia on one pig farm, and enteritis on another. *Streptococcus suis* caused pleuritis on another farm.

No significant wildlife pathogens were isolated during July.

Monthly report: Dr Theo Kotzé – Moqhaka (Kroonstad) district

Veterinary Mastitis Consultant: Bovine Industry

0827849706@vodamail.co.za

0827849706

DIAGNOSTIC REPORT : July 2020

No new zoonotic AMR (antimicrobial resistant) organisms or State controlled diseases reported for July 2020

Feedlot report received from Dr. Eben du Preez for July 2020 (edupreez1@telkomsa.net)

Condition	Comments and Specie
Parafilaria	B 3
Red legged-ticks	B 3, O3
Biting lice	B 3
Anaplasmosis	B 1
Red gut	B 3
Blood gut	O 1
Histophilus somni	B 3
Bovine brucellosis	B 1
Ringworm	B 3
BVD	B 1
IBR	B 3
EBL (beef cattle seen at abattoir)	B 2
Warts	B 3
Urea poisoning	B 3

Energy overload	B 3
Poor condition	O 3
Phosphate deficiency (calves)	B 3
Vitamin A deficiency	O 3
Abortion	B 2, O 1
Mastitis	B 1
Blue udder	O 1
Joint ill	B 1
Navell ill	B 1
Lameness (including foot rot)	B 3, O 2
Lungs	B 3, O 3
Eyes	O 3
Diarrhoea	B 3, O 3
Abscesses	B 3, O 1
Dystocia	B 1
Retained afterbirth	B 2
Trauma	B 2, O 3
Pericarditis	B 1
Deaths reported by farmers: Pneumonia	

Feedlot report received from Drs. Morris and Le Riche July 2020 (shaun@octavoscene.co.za)

Condition	Comments and Specie

IBR	B 3
Atypical interstitial pneumonia (AIP)	B 3
Trichomonsis	5 bulls one farm
Bovine brucellosis	50 heifers moved from a quarantined posite farm to a feedlot
Macrolide resistance	Resistance increasing in testing
Tapeworms	O 3

Monthly report for June and July 2020 from Dr R D Last (BVSc; M.Med.Vet(Path); MRCVS)

Specialist Veterinary Pathologist, Vetdiagnostix - Veterinary Pathology Services

LIVESTOCK DISEASE SURVEILANCE			
LIVESTOCK SPECIES	**DISEASE AGENT**	**NO. CASES**	**LOCATION**
BOVINE, CALF	CRYPTOSPORIDIOSIS	1	RUSTENBERG, N WEST
OVINE LAMB	CRYPTOSPORIDIOSIS	1	SWELLENDAM, W CAPE
BOVINE ADULT	PASTEURELLA PNEUMONIA	1	POTCHEFSTROOM, N WEST
BOVINE ADULT	PULMONARY THROMBOEMBOLISM	1	DUNDEE, KZN
BOVINE CALF	SALMONELLA TYPHIMURIUM ENTERITIS	1	KROONSTAD, FREE STATE
OVINE LAMB	CRYPTOSPORIDIOSIS	1	RUSTENBERG, N WEST
BOVINE CALF	CRYPTOSPORIDIOSIS	1	HOWICK, KZN
BOVINE ADULT	ENZOOTIC BOVINE LEUKOSIS	1	BRITS, GAUTENG
BOVINE ADULT	MICROCYSTIS BLUE GREEN ALGAE	1	BRITS, GAUTENG
BOVINE FETUS	BOVINE HERPESVIRUS (IBR) ABORTION	1	MEMEL, FREE STATE
BOVINE CALF	CRYPTOSPORIDIOSIS	1	RUSTENBERG, N WEST
BOVINE CALF	CRYPTOSPORIDIOSIS	1	ERMELO, MPUMULANGA
GOAT KID	CONTAGIOUS ECTHYMA (ORF)	1	PARYS, FREE STATE
BOVINE CALF	CRYPTOSPORIDIOSIS	1	RUSTENBERG, N WEST
BOVINE CALF	PNEUMONIC MANHEIMENALLOSIS	1	RUSTENBERG, N WEST
BOVINE ADULT	THROMBOEMBOLIC PNEUMONIA	1	RICHMOND KZN
BOVINE ADULT	CESTRUM POISONING	1	HUMANSDORP E CAPE
BOVINE ADULT	VISCERAL "HEART-PLUCK" CLOSTRIDIA	1	FRANKFORT, FREE STATE
BOVINE FETUS	VACUOLAR HEPATOPATHY MYCOTOXIN	1	DUNDEE, KZN

BOVINE YEARLING	TOXIC HEPATOSIS	1	MOOI RIVER KZN
BOVINE FETUS	TRUPERELLA PYOGENIES ABORTION	1	STANDERTON, MPUMULANGA
OVINE LAMB	CONGENITAL BILIARY ATRESIA	1	HOWICK, KZN

WILDLIFE DISEASE SURVEILANCE			
WILDLIFE SPECIES	**DISEASE AGENT**	**NO. CASES**	**LOCATION**
NYALA ANTELOPE	GOUSIEKTE	1	MODIMOLE LIMPOPO
WHITE RHINO CALF	CLOSTRIDIAL ENTEROTOXAEMIA	1	POLOKWANE LIMPOPO

Monthly report on Livestock and Wildlife isolations for July 2020 from IDEXX Laboratories supplied by dr. Liza du Plessis (Liza-DuPlessis@idexx.com)

Condition	**Comments and Specie**
Red gut	B 1
Septicaemia	B 1, G 1
Equine sarcoid	E 2
Cardiac glycoside	O 1
Protein, energy malnutrition (PEM)	O 2, G 2
Hepatotoxicity	O 1
Abortion	B 1 , C 1, E 1
Lung (Bacterial infection)	G 1

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

Section of Pathology
Department of Paraclinical Sciences
Faculty of Veterinary Science

7/28/20
DAFF
Import/Export Policy Unit Subdirectorate

Monthly report: Faculty of Veterinary Science cases
Wildlife cases sent to referring veterinarians between 26th June and 28th July 2020

Cases from State vet Skukuza or Orpen (none)
Cases imported with master permit (none)

PMDate	Species	Final	Histo No
07-May-20	African Elephant	Normal lung and lymph node (TB monitoring)	S1135-20
07-May-20	African Elephant	Granulomatous lymphadenitis	S1134-20
08-Jun-20	White faced Owl	Yolk sac peritonitis	S1444-20
08-Jun-20	Bald Ibis	Intestinal abscess while suffering from atherosclerosis	S1443-20
08-Jun-20	Samango Monkey	Possible multiple myeloma	S1442-20
08-Jun-20	Tartar Sand Boa	Malignant melanoma	S141-20
08-Jun-20	African Grey Parrot	Aspergillosis	S1406-20
20-Jul-20	Cheetah	Multiple cutaneous fibrolipomas	S1876-20

Kind regards,

Prof. Emily Mitchell