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

April 2021

(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

Click on Disease Reports

The following practices and laboratories (148) submitted reports during April 2021:

Mpumalanga (11)
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 and Van Sittert
Middelburg – Dr. Neil Fourie
Nelspruit – Dr. André Beytel
Standerton – Dr. Kobie Kroon
Volksrust – Dr. Johan Blaauw

Gauteng (12)
Bapsfontein – Drs. Engelbrecht and Olivier
Bronkhorstspruit – Dr. De Bruin, De Bruin and Labuschagne
Hammanskraal – Dr. Hentie Engelbrecht
Irene – Dr. Maggie Wepener
Krugersdorp-Veeartsnetwerk – Dr. Danie Odendaal
Magaliesburg – Dr. Ryan Jeffery
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 (9)
Bela-Bela (Warmbaths) – Dr. Nele Sabbe
Hoedspruit – Dr. Llana van Wyk
Makhado (Louis Trichardt) – Drs. Harris, Klopper and Jacobs
Modimolle (Nylstroom) – Drs. Huber, Bredell and Brits
Modimolle – Drs. Van Niekerk and Te Brugge
Mokopane (Potgietersburg) – Dr. Henk Visser
Polokwane (Pietersburg) – Drs. Watson, Viljoen, Jansen van Vuuren, Van Rooyen, Snyman and Cremona
Tzaneen – ZZ2 Farm Practice - Dr. Danie Odendaal
Vaalwater – Dr. Hampie van Staden

North West (15)
Beestekraal – Dr. Alwyn Venter
Bloemhof – Dr. Cizelle Naude
Brits – Drs. 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
Potchefstroom – Dr. Martin Jordaan
Rustenburg – Drs. Grobler, Sparks, Stoffberg en Otterman
Schweizer-Reneke – Dr. Pieter Venter
Stella - Dr. Magdaleen Vosser
Ventersdorp – Drs. Van der Merwe and Cilliers
Vryburg – Drs. De Jager and Rautenbach
Zeerust - Dr. Lizahn Venter

Free State (29)
Bethlehem – Drs. Strydom and Strydom
Bethlehem – Dr. J. C. du Plessis
Bloemfontein – Dr. Stephan Wessels
Bloemfontein – Dr. Lizanne Meiring
Botshabelo – Dr. Savannah Stutchbury

Bultfontein – Dr. Santjie Pieterse
Clocolan – Drs. Wasserman and Kleynhans
Dewetsdorp – Dr. Marike Badenhorst
Excelsior – Dr. Dedré Nel
Ficksburg – Dr. Woody Kotzé
Frankfort – Drs. Lesssing, Cilliers and Janse van Rensburg
Harrismith – Dr. Wim Slabber
Hoopstad – Dr. Kobus Pretorius
Hoopstad – Dr. Cassie van der Walt
Kroonstad – Drs. Daffue, Eksteen, Van Zyl and Van der Walt
Kroonstad – Drs. Wessels en Bester
Memel – Drs. Nixon and Nixon
Oranjeville - Dr. D'Wall Hauptfleish
Parys – Drs. Wessels and Wessels
Reitz – Dr. Murray Smith
Senekal – Dr. Theo Kotze
Smithfield – Dr. Nienke van Hasselt
Viljoenskroon – Dr. Johan Kahts
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 (13)
Bergville – Dr. Jubie Muller
Bergville – Dr. Ariena Shepherd
Camperdown – Dr. Anthony van Tonder
Dundee – Drs. Marais and Fynn
Eshowe – Drs. Pryke and McKernan
Estcourt – Drs. Turner, Tedder, Taylor, Tratschler, Van Rooyen and Alwar
Kokstad – Drs. Clowes, Lees, Malan, Koekemoer, Cronje and Kilian
Mtubatuba – Dr. Trevor Viljoen
Newcastle – Dr. Barry Rafferty
Pietermaritzburg – Drs. Kretzmann, Watkins, De Freitas and Barnard
Pongola – Dr. Heinz Kohrs
Underberg – Drs. King, Delaney and Huysamer
Vryheid – Drs. Theron and Theron

Eastern Cape (15)
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, Lees, Malan, Koekemoer, Cronje and Kilian
Graaff- Reinet - Dr. Roland Larson
Graaff-Reinet – Hobson, Strydom and Hennesy
Humansdorp – Drs. Van Niekerk, Jansen van Vuuren and Davis
Jeffreys Bay – Drs. Lategan and Hoek
Kareedouw – Dr. Marten Bootsma
Queenstown – Drs. Du Preez, Klopper, Jansen van Vuuren, De Klerk, Catherine and Wentzel
Steynsburg – Dr. Johan van Rooyen
Uitenhage – Drs. Mulder and Krüger
Witelsbos – Dr. Elmien Kotze

Western Cape (22)
Beaufort West - Dr. Jaco Pienaar
Beaufort West – Dr. Bennie Grobler
Caledon – Drs. Louw and Viljoen
Caledon – Drs. Small, Greyling and Viljoen
Darling – Drs. Van der Merwe, Adam, Jenkins and Lord
George- Dr. Riaan Putter
Heidelberg – Dr. Albert van Zyl
Malmesbury – Dr. Otto Kriek
Malmesbury – Drs. Heyns and Zolner
Malmesbury – Dr. Andries Lesch
Malmesbury – Drs. Bosman and Groenewald
Moorreesburg – Dr. Suenett Kotzé
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
Wellington – Drs. Van Zyl and Louw
Worcester – Drs. De Wet and Rabe

Northern Cape (9)
Calvinia – Dr. Bertus Nel
Colesberg – Drs. Rous and Rous

De Aar – Dr. Donald Anderson
Kathu – Dr. Jan Vorster
Kimberley – Drs. Smith and Van der Merwe
Kimberley – State Vet Group
Kuruman – Dr. Gerhard van Der Westhuizen
Postmasburg – Dr. Boeta van der Merwe
Upington – Drs. Vorster, Visser and Oosthuizen

Feedlots (2)
Dr. Eben Du Preez
Drs. Morris, Morris and Le Riche

Biosecurity consultant (1)
Dr. Theo Kotzé – Bloemfontein

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

Important message:
One of the most devastating outbreaks of three-day-stiff- sickness occurred during the past three months! It is important to do pregnancy examinations as febrile reactions, due to infectious diseases, may have caused resorbtions of foetuses.

"Bovine Brucellosis and Asiatic red water– Outbreaks are mostly due to our own fault"

Again, new outbreaks of brucellosis are reported! When will we be able to say that we are winning the battle?

Reasons mentioned why this disease of cattle and humans are not controlled:

- Farmers buy cattle at auctions with unknown disease status
- Lack of a vendor declaration
- Animals are not vaccinated against brucellosis and Asiatic red water

- Bought in animals are not quarantined and tested for brucellosis
- Cattle on adjacent farms not tested for brucellosis.
- Brucellosis is an area disease
- Positive stray cattle could cause outbreaks
- Insufficient knowledge of the diseases by farmers
- Positive animals not branded with a C on the neck
- Insufficient funding to control the disease (vehicles, petrol, manpower)
- Role flies play in the transmission of disease

Take responsibility for animal health or face the consequences.

Below are links that are available for your perusal:

#BrakesonBrucellosis

http://nahf.co.za/category/diseases/brucellosis/

Brucellosis Campaign: What is Brucellosis?

http://nahf.co.za/brucellosis-campaign-what-is-brucellosis-brakesonbrucellosis/

Brucellosis awareness – do you know?

http://nahf.co.za/brucellosis-awareness-do-you-know/

Brucellosis - Have you tested?

http://nahf.co.za/brakesonbrucellosis-have-you-tested/

Brucellosis - Dangers of consuming raw dairy products

http://nahf.co.za/brucellosis-campaign-week-2-brakesonbrucellosis-collaboratetestvaccinate-dangers-of-consuming-raw-dairy-products/

Brucellosis – The silent enemy in humans

http://nahf.co.za/brakesonbrucellosis-brucellosis-the-silent-enemy-in-humans/

Brucllosis - The Trojan Horse for your herd

http://nahf.co.za/brakesonbrucellosis-brucellosis-the-trojan-horse-for-your-herd/

Brucellosis: Is a herd disease

http://nahf.co.za/brakesonbrucellosis-brucellosis-is-a-herd-disease/

Brucellosis: Cattle branding – C=Brucellosis positive

http://nahf.co.za/brakesonbrucellosis-brucellosis-cattle-branding-cbrucellosis-positive/

Brucellosis – Farmer Responsibility

http://nahf.co.za/brakesonbrucellosis-farmer-responsibility/

Brucellosis – Abattoirs

http://nahf.co.za/brakesonbrucellosis-abattoirs/

Brucellosis – Is the consumer at risk for contracting Brucellosis?

http://nahf.co.za/brakesonbrucellosis-is-the-consumer-at-risk-for-contracting-brucellosis/

Brucellosis – Prevention for the Veterinarian and Para-Veterinarian

http://nahf.co.za/brakesonbrucellosis-prevention-for-the-veterinarian-and-para-veterinarian/

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.

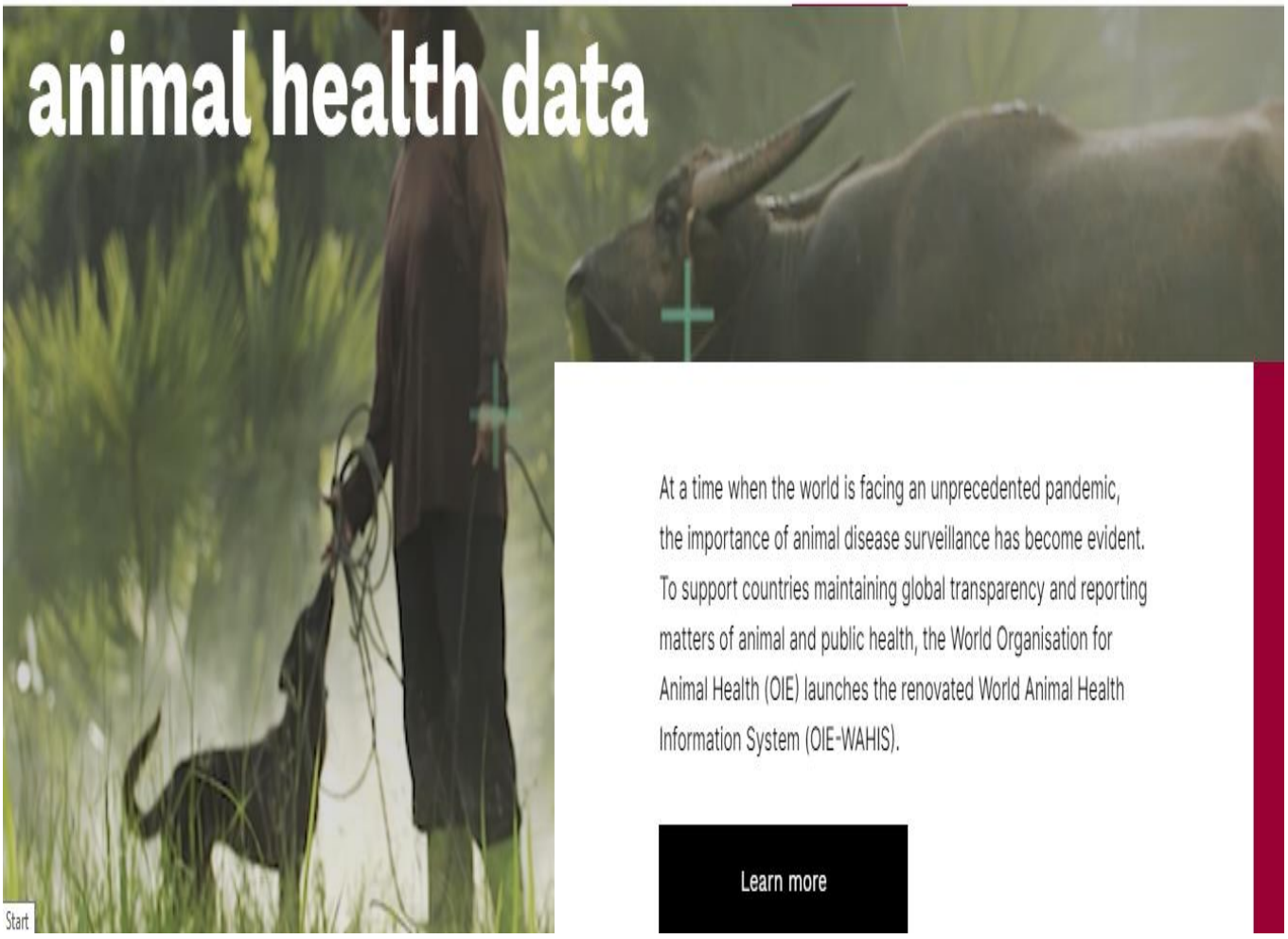
b. There will be absolutely no contact with the herd either directly or indirectly.

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!!!!!!!!

Visit the website of the Organisation for Animall Health

https://www.oie.int/en/home/


oie.int/en/home/
Apps
Google
Faffa Malan FB
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About - Ruvasa
Dashboard ‹ Landb...
Landbou.com
Indeks | Landbou
National Animal He...
Aksente, Deelteken...
Codes and Manuals
Publications
Documentary Database
Training Platform
EN FR ES
WORLD ORGANISATION FOR ANIMAL HEALTH
Protecting animals, preserving our future
One Health
COVID-19
Search
Who we are
What we do
What we offer
Media
OIE – WAHIS
animal health data
At a time when the world is facing an unprecedented pandemic, the importance of animal disease surveillance has become evident. To support countries maintaining global transparency and reporting matters of animal and public health, the World Organisation for Animal Health (OIE) launches the renovated World Animal Health Information System (OIE-WAHIS).
Learn more
Start

We should be able to export our products derived from animal origin!!!!!!!!!!

Paris, 18 March 2021 – Since its creation in 1924, the OIE is the mandated international organisation collecting data on, observing and analysing animal diseases throughout the world. Through its current World Animal Health Information System (WAHIS), the Organisation ensures the prompt dissemination of information on potentially devastating outbreaks and facilitates decision making in terms of international trade of animals and animal products by collecting, verifying and publishing official animal health information, following a standardised process, thus providing high quality, reliable data.

Safeguarding animal and public health, global security and international trade

The basis of Disease Control is Animal Identification and Tracebility

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

Very important legislation regarding the biosecurity rules for livestock agents

http://nahf.co.za/biosecurity-rules-for-livestock-agents-gazetted-13-november-2020-no-43900-board-notice-135-of-200/

http://nahf.co.za/wp-content/uploads/Biosecurity-Rules-for-Livestock-Agents-Gazetted-13-November-2020-No-43900-Board-Notice-135-of-200.pdf

BACKGROUND and DEFINITIONS:

These rules will regulate the livestock agent's industry with specific reference to required precautions to take during the gathering of live animals at auctions to reduce the risk of the spreading controlled, notifiable and other animal diseases.

In summary, each livestock agent/auctioneer will comply with the following:

a) The rules for auctions in this document.

b) Registration with the Agricultural Produce Agents Council (APAC) is compulsory and only registered agents will be allowed to conduct business.

c) Acceptance of responsibilities in terms of Sections 11 and 26 of the Animal Diseases Act, Act 35 of 1984. This gazette is also available free online at www.gpwonline.co.za 206 No. 43900 GOVERNMENT GAZETTE, 13 NOVEMBER 2020

d) An external audit of the auction facilities and all procedures, including these rules for auctions, will be undertaken by an independent auditor, these audits will need to be submitted to APAC bi-annually.

e) Every livestock agent must appoint a Biosecurity practitioner (a person registered with the South African Veterinary Council).

"Biosecure area" is the area where only animals whose documentation has been verified, identification and health status has been confirmed by a SAVC qualified person, i.e. animals unlikely to pose a significant risk of carrying any contagious disease-causing agents, as well as persons who have been decontaminated to the satisfaction of a biosecurity practitioner are allowed to enter;

"Biosecurity practitioner" a person registered with the South African Veterinary Council, who oversees compliance with minimum biosecurity requirements for animals from different origins congregating for auctioning, in line with the requirements of Sections 11 and 26 of the Animal Diseases Act, Act 35 of 1984 and the rules in this document;

"Animal Owner Health Attestation" is a signed declaration from the owner of the animals that attests: This gazette is also available free online at www.gpwonline.co.za STAATSKOERANT, 13 NOVEMBER 2020 No. 43900 207 3

• The name and location of the farm/area of origin.

• The absence of overt signs of disease and parasites.

• The absence of unexplained mortalities on the property of origin in the preceding 28 days.

• No new animal introductions to the property of origin in the preceding 14 days.

• Where possible, and especially during periods of disease control restrictions in specific localities, confirmation of this health status by the farm's attending veterinarian is ideal, see Addendum A of this document.

Identification of animals

a) All animals accepted at an auction must be properly and permanently marked with the owner's registered mark in accordance with the Animal Identification Act, Act 6 of 2002, and regulations published in Government Gazette no 25732 of 21 November 2003.

b) Animals without registered marks shall not be off-loaded at the biosecure area.

c) No freshly branded animals may be accepted.

d) No animals with wet paint marks of previous auctions may be accepted within 28 days after the previous sale.

e) No branding or marking of animals is allowed on the auction premises.

f) The auctioneer must ensure the registered brand belongs to the owner, check the brand marking certificate and ID of the owner and driver/transporter where applicable and to follow up any suspicious brands with the local Stock Theft Unit. The livestock agent must insist on a confirmation of their reporting of the noncompliance with the Stock Theft Act and keep these on record

g) The ear tag / identity tag for each animal's individual identification – as per the Livestock Identification and Traceability System, shall correspond with the list of animals in the Original Animal Owner Health **Attestation.**

Checking animals arriving at auctions

All animals must, upon arrival, be checked for lesions or clinical signs of disease or external parasites. In addition, animals shall be checked for official marks/brands indicating any of the controlled animal diseases such as Brucellosis, Tuberculosis and Foot and mouth disease. If there is any suspicion of any infectious disease, please refer to section 10 below.

Summary of disease report for April 2021

148 Reports from veterinary practices and laboratories were received (Mpumalanga (MP) 12; Gauteng (G) 12; Limpopo (L) 9; Northwest (NW) 17; Free State (FS) 28; KwaZulu-Natal (KZN) 13; Eastern Cape (EC) 18; Western Cape (WC) 20: Northern Cape (NC) 9; Feedlots (FL) 2; Bovine consultant (BC) 1 and Laboratories (Lab) 7)

Look at this list – these are the most widely spread diseases, reported by veterinarians.

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

	Number of provinces reporting
Wireworm (*Haemonchus contortus*)	9
Anaplasmosis	9
Orf (vuilbek)	9
Ringworm	9
Abortions	9

Abscesses	9
Diarrhoea	9
Eye infections	9
Lameness	9
Dystocia	9
Roundworms	8
Coccidiosis	8
Blue ticks	8
Bont-legged ticks	8
African red water	8
Asiatic red water	8
Lumpy skin disease	8
Ephemeral fever (Three-day-stiff-sickness)	8
Blue tongue	8
Pulpy kidney	8
Pneumonia (lung infection)	8
Warts	8
Mastitis	8
Resistant roundworms	7
Tapeworms	7
Cryptosporidiosis	7
Heartwater	7

Bloat	7
Joint ill	7
Navel ill	7
Acidosis	7
Poor conception	7
Vaginal prolaps	7
Liver fluke worms	6
Heartwaterticks	6
Brown-ear ticks	6
Trichomonosis	6
Blackquarter	6
Swelled head	6
Bovine brucellosis	6
BMC (snotsiekte)	6
Snake bite	6
Calcium deficiency	6
Downer	6
Uterine prolaps	6
Lightning	6
Nuisance flies	5
Midges	5
Blowflies	5

Vibriosis	5
E. coli	5
BVD	5
Energy deficiency	5
Blue udder	5
Traumatic reticulo-peritonitis	5
Metritis	5
Retained afterbrth	5
Sheath prolaps	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

_____ NAME

Farm: _____

_____ OWNER OR AUTHORIZED REPRESENTATIVE

District: _____

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

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	x	x
Resistant roundworms		x		x	x	x	x	x	x
Wireworm	x	x	x	x	x	x	x	x	x
Brown stomach-worm							x		
Long-necked bankruptworm									
White bankruptworm									
Large-mouthed bowelworm									
Nodularworm									
Lungworm									
Eyeworm	x				x				
Parafilaria	x		x	x		x			
Tapeworms		x	x	x	x		x	x	x
Liver fluke	x				x	x	x	x	x
Conical fluke	x				x	x	x		
Cysticercosis (measles)							x		
Schistosomiasis (bilharzia)	x								
Coccidiosis	x	x	x	x	x		x	x	x
Cryptosporidiosis	x	x		x	x	x	x	x	
Giardia		x							

Wireworm outbreaks have been reported from all 9 provinces. On some farms mortality rate was excessive!

BEWARE

A farm has been found where the wireworm strain on the farm is resistant to ALL active dewormer groups

Check eye colour of a group of sheep in all flocks weekly! Bottle jaws and pale eye mucous membranes are indications that deaths are just round the corner!

Get advice from your veterinarian to ascertain which dewormer group(s) are still effective on your farm by doing a faecal egg count resistance test (FECRT)

Group code	Generic class of actives	Example of actives
1*	Macrocyclic lactones (ML's)	Abamectin Doramectin Eprinomectin Ivermectin Moxidectin

2*	Benzimidazoles (white drugs)	Albendazole Fenbendazole Febental Ricobendazole Triclabendazole
3*	Imidathiazoles (clear drugs)	Levamisole Morantel
4*	Salicylanilides	Closantel Niclosamide Oxiclozanide Rafoxanide Resorantel
5*	Phenols	Nitroxinyl
6*	Sulphonamides	Clorsulon
7*	Organophosphates	Trichlorfon
8*	Isoquinolones	Praziquantel
9*	Others Amino-acetonitryl-derivatives (AAD's)	Piperazine Monepantel
10*	Spiroindoles	Derquantel

Visit www.wormx.info for valuable information on parasite control!

Beware of liver fluke and conical fluke outbreaks when animals are grazing in vleis and other wet areas where the intermediate hosts, water snails, are abundant.

Coccidiosis outbreaks were reported from 9 provinces. Young animals are most susceptable.

Cryptosporidiosis outbreaks, causing huge losses were reported from 6 provinces. This deadly condition has now spread to the Western Cape. A product has been registered to treat animals against this deadly parasite. Good colostrum protects new born animals. Biosecurity should be practised at all levels on the farm.

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 should 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 management
Ensure clean pathogen free water sources
Hygiene training of personnel
Consult your veterinarian

SOLUTION

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.

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 is 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 controll, 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 and 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:

the dose can land up the lungs, and cause pneumonia
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
A vaccine against wireworm is now available, discuss its use with your veterinarian

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

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

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	X		
Heartwater ticks	x	x	x	x		x	X		
Brown ear-ticks	x	x	x	x		x	X		
Bont-legged ticks	x	x	x	x	x	x	X		x
Red-legged ticks	x			x	x	x			
Paralysis ticks	x				x		X		
Tampans									
Biting lice					x		X	x	
Sucking lice							X		
Fleas									
Itch mites							X		
Sheep scab				x	x		X		
Mange mites									
Nuisance flies	x			x	x	x		x	
Midges	x			x	x	x			x
Mosquitoes	x			x	x	x			
Blowflies	x	x			x	x		x	
Screw-worm	x			x			X		

Gedoelstia (uitpeuloogsiekte)									
Nasal bot	x	x			x	x			

After the good rains that fell in many areas an explosion in tick numbers was reported!

Blue ticks (African and Asiatic blue ticks) are able to transmit African and Asiatic red water (8 provinces reported outbreaks), anaplasmosis (all 9 provinces) 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.

Heartwater, transmitted by bont ticks, was reported from 8 provinces.

Ticks also cause anaemia, udder, ear and hide damage.

Most important is to prevent udder damage. Ticks with long mouth parts such as bont and bont-legged ticks, can cause irrepairable damage to teats and the udder.

Screw-worm infestation is rife after tick damage.

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

Discuss your tick control programme with your veterinarian.

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	X	x	
Asiatic red water	x	x	x	x	x	x	X	x	
Anaplasmosis	x	x	x	x	x	x	X	x	x
Heartwater	x	x	x	x		x	X	x	
Lumpy skin disease	x	x	x	x	x	x		x	x

Corridor disease						**x**			
Theileriosis									

Asiatic red water is spreading and is one of the deadliest diseases in cattle (8 provinces).

Numerous mortalities were reported!

Anaplasmosis outbreaks were reported from all 9 provinces. Biting flies are the main transmitters of this disease.

Using the same needle when vaccinating cattle may also be the reason for an anaplasmosis outbreak!

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

The keyword is: vaccinate your animals! Contact your veterinarian.

Beware of moving susceptible animals into areas where infected ticks are present or moving animals with infected ticks to disease free areas! Before deciding to buy animals speak to both veterinarians – from the area moving the animals and the area where they are going to.

Tick toxicosis

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

Sweating sickness is caused by a toxin injected into calves by females of the bont-legged tick specie.

Insect transmittable diseases

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

Insect transmittable diseases	**MP**	**G**	**L**	**NW**	**FS**	**KZN**	**EC**	**WC**	**NC**
Lumpy skin disease	**x**	**x**	**x**	**x**	**x**	**x**		**x**	**x**
Pseudo Lumpy skin disease (Allerton virus)									
Ephemeral fever (Three-day-stiff sickness)	**x**	**x**	**x**	**x**	**x**	**x**	**X**		**x**

Blue tongue	**x**	**x**	**x**	**x**	**x**	**x**		**x**	**x**
Rift Valley Fever									
Wesselsbron									
Nagana						**x**			

Huge outbreaks of insect-transmitted diseases are reported!

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 ensure that your animals are protected against insect-transmitted diseases, in time, for the next rainy season! The last RVF outbreak was in May 2018.

http://www.scielo.org.za/scielo.php?script=sci_arttext&pid=S0030-24652013000100002

If an abortion storm occurs, inform your veterinarian immediately!!!

When outbreaks occur sufficient stocks of vaccines may not be available.

Pregnant animals are to be vaccinated with the inactivated vaccine!

Study the packet insert!

Infectious diseases cause a rise in temperature and pregnant animals may resorb or abort the foetuses!

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**
Vibriosis	**x**			**x**	**x**		**X**		**x**
Pizzle disease					**x**				

***Actinobacillus seminis* plus HPA**	**x**								

BEWARE

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 wer reported from 5 provinces.

Venerial diseases are HERD diseases! 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 to your farm.

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**		

Clostridial disease									
Botulism									x
Pulpy kidney	x	x	x	x	x	x		x	x
Lamb dysentery									
Swelled head	x	x	x			x	x	x	
Red gut (cattle)		x				x	x		
Blood gut (sheep)	x				x			x	x
Tetanus					x	x		x	
Salmonellosis						x	x		
Klebsiella									
Bovine brucellosis	x		x	x	x	x			x
***Brucella melitensis* (goats)**									
Ovine brucellosis (Ram's disease)					x		x	x	x
Bovine tuberculosis									
Johne's	x							x	
Leptospirosis						x			
Listeriosis			x					x	
Pseudomonas									
Pasteurella multocida									
Pasteurellosis (see pneumonia -lungs)	x	x	x	x	x	x		x	x
Fusibacterium necrophorum	x			x				x	
Septicaemia				x				x	
E. coli	x			x	x		x	x	
Klebsiella									

Coxiella **(Q-fever)**					x				
Mycoplasma									
Histophilus somni		x							
Enzootic abortion				x					x
Lumpy wool (*Dermatophilus*)			x	x	x	x			
Bovine dermatophilosis (Senkobo disease)			x						
Uterine gangrene				x					x
Wooden tongue									
Lumpy jaw		x							
Interdigital dermatitis									

Most of the bacterial diseases can be prevented by vaccination! Discuss and update your programme regularly in consultation with your local veterinarian!

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 inactivated 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. Biosecurity!!!!!!!!

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! Brucellosis is a herd disease!!!

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

Calves may become infected when drinking infected colostrum!

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	x	
Rabies (cattle)									
BVD		x	x		x			x	x
IBR				x	x	x			
BRSV				x			X		
PI3									
Maedi visna virus									
Rotavirus		x		x	x			x	
Coronavirus				x	x			x	
Enzootic bovine leucosis (EBL)					x	x		x	
Sheep leucosis									

Jaagsiekte									
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.

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 (vuilbek) is a zoonosis.

Enzootic bovine leucosis virus is transmitted by blood (vaccinations, rectal examinations, certain procedures, etc.) This disease, EBL, can be latent in your herd. As there is no vaccine available, be extra careful not to introduce the disease ino your herd. More information is received warning us that this disease is also a zoonosis. Talk to your veterinarian as to take necessary precautionary measures.

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**	**x**

Protozoal diseases

Protozoal diseases	**MP**	**G**	**L**	**NW**	**FS**	**KZN**	**EC**	**WC**	**NC**

Besnoitiosis (olifantsvelsiekte)			**x**						

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									
Gousiekte				**x**					
Wilde dadel									
***Cestrum* (ink berry)**									
Tulip	**x**	**x**			**x**				
***Cynanchum* (bobbejaantou)**									
Facial eczema					**x**				
Lantana	**x**		**x**	**x**	**x**	**x**	**X**		
Prussic acid	**x**				**x**				
Damkweek (cyanide)									
Acacia nilotica									
Senecio									
***Cotula nigellifolia* (stagger wood)**									
Geeldikkop (duwweltjies) and dikoor								**x**	**x**
Vermeersiekte				**x**	**x**				**x**
Misbek (plant poisoning)									
***Hertia pallens* (Nenta, krimpsiekte)**									

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									
Ceylons rose									
Datura									
Sarcostemme viminale **(melktou, caustic bush)**									
Malva parviflora **(kiesieblaar)**									
Bitou									
Cotula nigellifolia **(Stagger weed, stootsiektebossie)**									
Eucalyptus (bloekom) bark/leaves									
Kikuyu									
Ryegrass					**x**			**x**	
Grass staggers									
Lush pastures (Dikkop)									
Lasiospermum (Ganskweek)									
Solanum incanum		**x**							

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

Senna toxicity									
Water contamination									
Oxalates									
Nitrate									
Amaranthus									
Tannins									
Urea						**x**			
Salt									
Snake bite	**x**		**x**	**x**	**x**	**x**			**x**
Bee stings									
Moth cocoons (impaction)									
Blue green algae									
Copper						**x**			
Selenium									
Zinc									
Zinc sulphite									
Fluoride									
Lead								**x**	
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 tulip and ink berries (*Cestrum*).

Do have activated charcoal on the farm as charcoal is 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 now and then on farms. Make sure that licks containing urea are mixed and formulated properly. Many mortalities were reported where mixing instructions and calculations

were not followed correctly! Make sure that licks containing urea do not get wet during the rainy season.

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

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

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

We are thankfull for rains that fell in most areas of the country but there are still some areas where drought conditions are still present! We pray with you for rain!

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						x		x	
Copper						x			
Zinc						x			
Selenium		x		x		x	X		
Magnesium								x	
Manganese						x			
Vitamin A				x					

Vitamin B 1					x				

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			
Abscesses	x	x	x	x	x	x	X	x	x
Intestinal ulcers									
Bladder stones –urolithiasis					x				x
Blindness				x	x		X		x
Bloat	x	x	x		x	x		x	x
Blue udder	x				x	x		x	x
Diarrhoea	x	x	x	x	x	x	X	x	x
Epididymitis	x				x				x
Eye cancer		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					x				
Icterus									
Lameness/foot problems	x	x	x	x	x	x	X	x	x
Lung infection	x	x		x	x	x	X	x	
Mastitis	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	
Rectal prolaps			x						
Rumen stasis									
Abdominal impaction									
Abdominal hernia									
Floppy kid synrome									
Swelsiekte									
Traumatic reticulo-peritonitis		x		x	x		X		x
Trauma	x				x			x	
Teeth wear									
Plastic bags (ingestion)									
Downer		x	x	x	x	x			x
Poor condition									
Anaphylactic shock			x						
Immune incompetance									
Vestibular syndrome (middle ear infection)	x								
Hernia									

Deformaties									
Wet carcases at abattoir				**x**				**x**	**x**
Yellow carcases at abattoir									**x**
Pseudomonolysis						**x**			
Mismothering							**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.

Metabolic diseases

The following diseases were reported by practices in the provinces:

Metabolic diseases	MP	G	L	NW	FS	KZN	EC	WC	NC
Acidosis	**x**	**x**	**x**	**x**	**x**	**x**		**x**	**x**
Displaced abomasum	**x**					**x**			
Ketosis (Domsiekte)	**x**				**x**			**x**	
Milk fever					**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. Overeating of soya leads to an alkalosis.

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**			**x**	

Metritis				x	x	x	X	x	
Hydrops									
Poor conception		x	x	x	x	x	X	x	x
Retained afterbirth	x				x	x	X	x	
Sheath prolaps	x				x	x	X		x
Uterine prolaps		x		x	x	x		x	x
Vaginal prolaps	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!!

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

Environmental conditions

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

Other conditions

	MP	G	L	NW	FS	KZN	EC	WC	NC
Dermatosparaxis									
Genetic disorders									
Drug residues (milk, meat, liver, kidney etc)									
Preditors					x			x	
Theft/Sabotation					x	x			
Trauma (fractures etc)	x	x			x	x			
Trauma (veldfires)									

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

Beestekraal – Dr. Alwyn Venter
Cape Town - Dr. Sophette Gers
Calvinia – Dr. Bertus Nel
George – Dr. Mark Chimes
George – Dr. Muller Strydom
Kareedouw - Dr. Marten Bootsma
Malalane - Drs. Van Sittert and Van Sittert
Plettenberg Bay – Dr. André Reitz
Stutterheim – Dr. Dave Waterman
Vanderbylpark- Dr. Kobus Kok

Ostriches

Western Cape

Oudtshoorn

Protein, Energy deficiency, poor growth	3 - Autumn temperature fluctuations and chicks returnig from growers- feed refusal or poor intake – becomes a negative/ catabolic downward spiral
Eye infection	3 -Nuisance flies/ dust/. Severely affected sinusitis and conjunctivitus
Red gut	3 – Feed intake up and down/ leads to gastro-intestinal tract disturbance and Redgut – clostridial enteroxaemia
Soil pica	3 - Social/ environmental and adjustment stress = boredome or displaced behaviour, high water intake = moist areas in camps and soil pica
Rectal prolaps	3 - Soil pica and heat stres = cryptosporidium exposure increased dramaticaly with immune compromise

Equines

Mpumalanga

Lydenburg

Nuisance flies – 2
Midges – 2

Middelburg

Afrcan Horse Sickness - 1

Gauteng

Bapsfontein

African Horse sickness – 2
Equine encephalitis virus - 2

Nigel

African Horse Sickness – 7 cases
Equine encephalitis virus – 2 cases

Limpopo

Bela Bela

African Horse Sickness - 1

Hoedspruit
African Horse Sickness – 1 Report of other horses that died in the area
Equine encephalitis virus - 1
Theileria equi – 2 Three horses that died in the area, different stables
Lameness - Severe lamenesss with abscess formation in several herds, due to tick bites

Makhado
African Horse Sickness – 2 cases

North West
Leeudoringstad
African Horse Sickness – 3
Lichtenburg
African Horse Sickness – 25 cases

Kwa-Zulu Natal
Pongola
African Horse Sickness - Dikkop

Eastern Cape
Port Alfred
Piroplasmosis – One case Langholm

Northern Cape
De Aar
African Horse sickness – Seen one case, 8 cases reported by clients
State vet group
African Horse Sickness – Kuruman, Hopetown, Douglas, Kimberley, Hartswater
Upington
Afrian Horse Sickness – Dikkop, few cases along the river and a few further inland

Game
Mpumalanga
Lydenburg
Lameness – 1

Limpopo
Hoedspruit
Bont-legged ticks – 3
Trauma - 2

North West
Schweizer-Reneke

Pneumonia – 2 Roans

KwaZulu-Natal

Pongola

Corridor disease - Buffalo
Nuisance flies – 1

Eastern Cape

Port Alfred

Tick worry: One case in a zebra foal – Port Alfred
Tick worry and *Theileria* – 2 cases sable calves - Port Alfred

Swine

Gauteng

Irene

Dehydration – 1
Crush injury – 1
Anorexia – 1
Weak – 1
Behaviour change – 1
Lameness – 2
Staphylococcus – 1
Bruising - 1

Onderstepoort

Othaematoma – 1

Free State

Parys

African swine fever – 2

Eastern Cape

Port Alfred

Abscesses – 3 cases Shaw Park

Monthly report on Livestock and Wildlife isolations for April 2021 from Vetdiagnostix –Microbiology Laboratory, supplied by dr. Marijke Henton

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

Vetdiagnostix microbiology

Trueperella pyogenes was isolated from bovine [5] and ovine [1] pneumonia; bovine [2] and ovine [1] abscesses; and joint infection in a wildebeest. *T. pyogenes* is commonly isolated from a variety of animals and conditions in South Africa, as reported each month.

Trueperella pyogenes is pathogenic for a variety of animal species and purulent or necrotic lesions may occur in a variety of host tissues. *Trueperella pyogenes* is the cause of significant economic losses, causing a reduction in meat and milk yield, decreased reproduction and losses due to culling and the discarding of carcasses showing multiple abscesses at slaughter. The endometrium of the uterus is particularly sensitive to the pyolysin toxin which is the major virulence factor produced by T. *pyogenes*. Available vaccines engender low levels of immunity. Only lipophilic antibiotics such as the tetracyclines and fluroquinolones can be used for treatment, as water-based antibiotics do not penetrate the tissues adequately.

Both *Salmonella* Dublin [3] and *S*. Typhimurium [2] caused septicaemia and young and adult cattle. Bovine pneumonia was also due to *Pasteurella multocida* [11], *Mannheimia haemolytica* [11], *Mycoplasma* [8] and *Histophilus somni* [3].

Clostridial myositis in cattle was due to *C. novyi* [3] and *C. sordellii* [1], and *C. sordellii* also caused metritis in a goat.

Colibacillosis in cattle [2], sheep [3], goats [2] and a pig were due to ESBL [Extended Spectrum Beta Lactamase] strains of *E. coli* in 3 of the cases.

Two cases of sheep abscesses were due to *Corynebacterium pseudotuberculosis*.

Pasteurella multocida caused septicaemia in a pig.

Monthly report on livestock and wildlife isolations for April 2021 by Department Veterinary Tropical Diseases Bacteriology Laboratory, University of Pretoria, supplied by Dr Annelize Jonker (Annelize.jonker@up.ac.za)

Livestock

This month there were three isolations of *Trueperella pyogenes*. From a lung sample in a case of pneumonia in a calf (1). From abomasal content and lung from an aborted goat foetus (1). *T. pyogenes* was also isolated together with *Pseudomonas aeruginosa* from a bovine middle ear infection.

Streptococcus dysgalactiae subspecies *equisimilis* was isolated from an aborted goat foetus.

Staphylococcus aureus was isolated from a milk sample from a case of mastitis in a goat.

Mannheimia haemolytica was isolated from a lung sample in a case of pneumona in an adult sheep.

Fusobacterium necrophorum was isolated from a sheep liver sample in a case of necrotic hepatitis.

Wildlife

Pseudomonas aeruginosa and *Aeromonas hydrophila* was isolated from enteritis in a Springbuck.

Monthly report for March 2021 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 ADULT	CESTRUM POISONING	1	OYSTER BAY, E.CAPE
BOVINE STEER	CLOSTRIDIUM SORDELLI MYOSITIS	1	DUNDEE, KZN
BOVINE COW	BIBERSTEINIA TREHALOSI PNEUMONIA	1	SWELLENDAM, W.CAPE
BOVINE COW	OAK POISONNING	1	HOWICK, KZN
BOVINE COW	MALIGNANT CATTARHAL FEVER	1	DUNDEE, KZN
BOVINE COW	CHRONIC ANAPLASMOSIS	1	MIDDELBURG, MPUMULANGA
BOVINE CALVES	TOXIC HEPATOSIS	1	UNDERBERG, KZN

Monthly April 2021 report: Dr. Annelie Cloete – Elsenburg, Stellenbosch

Cryptosporidiosis - 3

Monthly April 2021 report: Dr Theo Kotzé – Biosecurity/Mastitis consultant Bloemfontein

0827849706@vodamail.co.za

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Diagnostic monthly report

No anti microbial resistant (AMR) or zoonotic organisms isolated.

No State controlled or notifiable diseases to report.

Feedlot report received from Dr. Eben du Preez for April 2021 (edupreez1@telkomsa.net)

Condition	Comments and Specie
Parafilaria	B 2

Cysticercosis	B 2
Blue ticks	B 3
Bont ticks	B 3
Red legged-ticks	B 3, O 3
Bont-legged ticks	B 1
Asiatic red water	B 1
Anaplasmosis	B 3
Heartwater	B 1
Ephemeral fever (3 day stiff sickness)	B 3
Red gut	B 3
Blood gut	O 3
Histophilus somni	B 2
Pericarditis	B 1
Ringworm	B 3
IBR	B 2
BVD	B 2
EBL	B 1
Warts	B 3
Orf	O 3, C 3
Energy deficiency	B 1
Phosphate deficiency	B 2
Zinc deficiency	B 3
Vitamin B 1 deficiency	B 3, O 3
Dystocia	B 1

Mastitis	O 1
Joint ill	B 3
Lameness	B 3, O 3
Lungs	B 3
Diarrhoea	B 3, O 3
Abscesses	B 3
Trauma	B 3, O 3
Diseases reported by farmers	Anaplasmosis, acidosis, pneumonia, footrot, three-day-stff sickness, bloat, pneumonia, Diarrhoea

Feedlot report received from Drs. Morris and Le Riche April 2021 (shaun@octavoscene.co.za)

Condition	Comments and Specie
African red water	B 3
Asiatic red water	B 3
Anaplasmosis	B 3
Heartwater	B 2
Lumpy skin disease	B 3
Histophilus cardimiopathie	B 1
Ephemeral fever (Three-day stiffsickness)	B 2
Bovine viral diarrhoea (BVD)	B 3
Cryptosporidiosis	O 3

Lungs (chronic)	B 3
Underdeveloped rumens	O 3 (lambs)

Monthly report on Livestock and Wildlife isolations for April 2021 from IDEXX Laboratories supplied by dr. Liza du Plessis (Liza-DuPlessis@idexx.com)

Condition	Comments and Specie
Wireworm	O 1
Heartwater tick	E 1
Red legged tick	E 1
Theileriosis	E 2
Babesiosis	E 1
Lumpy skin disease	B 2
Ephemeral fever (3-day stiff sickness)	B 1
Lung infection	O 3, E 1
Clostridial enteritis/abomasitis	O 2
Nephritis/septicaemia	G 1
Bacterial hepatitis	O 1
Viral encephalitis	O 1
Fusobacterium hepatitis	O 1
Pulmonary/transperitoneal carcinoma	B 1, O 1
Copper deficiency/enzootic ataxia	O 2
Rumen acidosis	C 2

Monthly report from Dr. Mark Chimes for March 2021 – Dairy Standards

Nothing to report

Monthly report from Dr. Emily Mitchell March 2021 - Wildlife cases: Faculty of Veterinary Science

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Section of Pathology
Department of Paraclinical Sciences
Faculty of Veterinary Science

20 April, 2021

Import/Export Policy Unit Subdirectorate

Monthly report: Faculty of Veterinary Science cases

Wildlife cases sent to referring veterinarians between 23rd Feb and 20th April, 2021

Cases from State vet Skukuza or Orpen

Cases imported with master permit

PMDate	Species	Final	Histo No
27-Jan-21	African Black Footed Cat	Salmonellosis	S260-21
11-Feb-21	African Elephant	Normal lung, lymph node (TB monitoring)	S431-21
11-Mar-21	Lion	Perivascular dermatitis	713-21
15-Mar-21	Giraffe	Possible enterotoxaemia	741-21
17-Mar-21	Cheetah	Grade 3 gastritis	771-21
23-Mar-21	Giraffe	Suspected metabolic/nutritional disease	814-21
04-Mar-21	Blacksmith Plover	Anaemia, malnutrition	632-21
03-Mar-21	Red billed teal	Anaemia, malnutrition	632-21
02-Feb-21	Lion	Normal reproductive tract	308-21
11-Feb-21	Lion	Presumed bovine tuberculosis	S432-21
11-Feb-21	Leopard	Normal lymph node, lung (TB monitoring)	S434-21
11-Feb-21	Hippopotamus	Normal lung and lymph node (tuberculosis monitoring)	S435-21
12-Mar-21	Pigeon	Viral enteritis and hepatitis	S720-21
12-Feb-21	Cheetah	Gastritis monitoring (x36)	S364-21

Kind regards,

Prof. Emily Mitchell