



**agriculture,  
forestry & fisheries**

Department:  
Agriculture, Forestry and Fisheries  
REPUBLIC OF SOUTH AFRICA

**DEPARTMENT OF AGRICULTURE,  
FORESTRY AND FISHERIES  
DIRECTORATE ANIMAL HEALTH**

**VETERINARY PROCEDURAL NOTICE  
FOR BUFFALO DISEASE RISK  
MANAGEMENT IN SOUTH AFRICA  
(also referred to as the Buffalo  
Veterinary Procedural Notice)**

APPROVED BY:

Director: Animal Health

EFFECTIVE DATE:

2017-03-01

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Veterinary Procedural Notice: Buffalo Disease Risk Management

Approved by:

Page 1 of 41

Dr Mpho Maja, Director of Animal Health

2017 -02- 17

Date


## TABLE OF CONTENTS

Nr	Topic	Page
<b>1.</b>	<b>Purpose of the Buffalo veterinary procedural notice (VPN)</b>	<b>3</b>
<b>2.</b>	<b>Scope</b>	<b>3</b>
<b>3.</b>	<b>Introduction</b>	<b>4</b>
3.1	Abbreviations	4
3.2	Background	5
3.3	Application of the buffalo VPN	6
3.4	Definitions and procedures	7
<b>4.</b>	<b>Legal basis</b>	<b>13</b>
4.1	General disease applications	13
4.2	Management and movement of buffalo	14
4.3	Controlled areas	16
4.4	Proclamation of VPN in Government Gazette	16
<b>5.</b>	<b>Keeping of buffalo</b>	<b>16</b>
5.1	Registration of land for the keeping of buffalo	16
5.2	De-registration of land registered for the keeping of buffalo	20
5.3	Annual inspection of land registered for the keeping of buffalo	21
5.4	Health status of buffalo	21
<b>6.</b>	<b>Disease testing of buffalo</b>	<b>22</b>
6.1	General	22
6.2	Diagnostic tests	23
6.3	Guidelines for testing	23
<b>7.</b>	<b>Movement of live buffalo</b>	<b>24</b>
7.1	General requirements	24
7.2	Auction procedures	25
7.3	Movement application and approval procedures	26
7.4	Loading requirements	27
7.5	Requirements at destination	28
7.6	Health status at destination	28
<b>8.</b>	<b>Special conditions for the keeping and movement of SPIF buffalo in disease controlled areas</b>	<b>29</b>
8.1	Keeping of SPIF buffalo in the FMD protection zones and the CD controlled area of KZN	29
8.2	Movement of SPIF buffalo out of the FMD protection zones or out of the CD controlled area of KZN	30
<b>9.</b>	<b>Stray buffalo control</b>	<b>31</b>
<b>10.</b>	<b>Contingency protocol and action plans for dealing with buffalo testing positive for FMD, CD, BR or BTB</b>	<b>32</b>
10.1	Introduction	32
10.2	Reporting	33
10.3	Quarantine and forward / backward tracing	33
10.4	Action plan for further investigations / testing and / or control and eradication of outbreak	34
11.	List of addendums	41

Veterinary Procedural Notice: Buffalo Disease Risk Management

Approved by:

Page 2 of 41



Dr Mpho Maja, Director of Animal Health

2017 -02- 17

Date

## 1. PURPOSE OF THE BUFFALO VETERINARY PROCEDURAL NOTICE (VPN)

- 1.1 To provide a policy for the management of the veterinary risks associated with the keeping and movement of African buffalo (*Syncerus caffer*) in South Africa, including the following:
  - 1.1.1 Procedures for the registration of land for the keeping of buffalo
  - 1.1.2 Procedures for the disease testing of buffalo
  - 1.1.3 Procedures for the movement of buffalo
  - 1.1.4 Procedures for the control of stray buffalo
  - 1.1.5 Procedures for contingency planning and control measures for disease outbreaks in buffalo
- 1.2 The following risks are identified as the main concerns related to buffalo:
  - 1.2.1 The risk of certain animal diseases (Foot and mouth disease (FMD), Corridor disease (CD), Bovine tuberculosis (BTB) and Bovine brucellosis (BR)) spreading from infected/disease carrier buffalo to other susceptible animals, including SPIF buffalo, in RSA.
  - 1.2.2 The risk of South Africa losing the status of its FMD free zone (without vaccination) as recognised by the OIE.
  - 1.2.3 The potential negative impact of these diseases on national and international trade.
  - 1.2.4 To maintain the health status of the specific infection free buffalo (SPIF) populations.

## 2. SCOPE

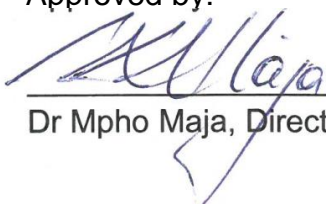
- 2.1 This VPN is applicable to all state veterinary officials, private veterinarians, buffalo owners/farm managers, conservation authorities, auctioneers, laboratories, animal transporters, and all other parties involved in the risk management associated with the keeping, testing and movement of buffalo in the Republic of South Africa (RSA).
- 2.2 This VPN is designed to prevent the introduction of any of the four most important diseases (FMD, CD, BTB, BR) associated with buffalo to other susceptible animals, but also to facilitate the movement of buffalo according to the following principles:
  - 2.1.1 Prohibition of high risk movements of live buffalo
  - 2.1.2 Facilitation of low risk movements of live buffalo by implementation of appropriate risk mitigation measures (complete disease screening: buffalo test package)
  - 2.1.3 Movements of buffalo products are dealt with in the FMD Veterinary Procedural Notice. Buffalo samples are considered to be products.

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Veterinary Procedural Notice: Buffalo Disease Risk Management

Approved by:

Page 3 of 41



Dr Mpho Maja, Director of Animal Health

2017 -02- 17

Date

### 3. INTRODUCTION


#### 3.1 Abbreviations

<b>Diseases</b>	
BR	Bovine brucellosis caused by <i>Brucella abortus</i>
BTB	Bovine tuberculosis
CD	Corridor disease
FMD	Foot and mouth disease
PVVD	Parasites, Vectors and Vector borne diseases
SPIF	Specific infection free – free from FMD, CD, BTB and BR infection
<b>Diagnostics</b>	
CFT	Complement Fixation Test
CITT	Comparative intra-dermal tuberculin test
IFAT	Immuno-fluorescent antibody test
IFNg	Interferon gamma assay
RBT	Rose Bengal Test
SAT	Serum Agglutination Test
<b>Documents</b>	
Act	Animal Diseases Act, 1984 (Act No 35 of 1984) as amended
Regulations	Animal Diseases Regulations, No. R. 2026 of 26 September 1986, as amended
VPN	Veterinary Procedural Notice
<b>Places, provinces, people and institutions</b>	
ARC	Agricultural Research Council
DAFF	Department of Agriculture, Forestry and Fisheries
HIP	Hluhluwe / Imfolozi Park
KNP	Kruger National Park
OIE	Office International des Epizooties (World Organisation for Animal Health)
OVI	Onderstepoort Veterinary Institute
RSA	Republic of South Africa
TADP	Transboundary Animal Disease Programme
AHT	Animal Health Technician

Veterinary Procedural Notice: Buffalo Disease Risk Management

Approved by:

Page 4 of 41



Dr Mpho Maja, Director of Animal Health

2017 -02- 17

Date

DAH	National Director Animal Health of DAFF
DD	Deputy Director Animal Health or District/Regional Manager responsible for Animal Health
PEO	Government veterinarian in charge of Animal Health Services in the Province (either the Provincial Director or the Provincial Chief Director of Veterinary Services) All or some functions of the PEO according to this VPN may be delegated in writing to a DD or SV for the whole or part of the province.
SV	State Veterinarian
EC	Eastern Cape
FS	Free State
GAU	Gauteng
KZN	Kwazulu-Natal
LIM	Limpopo
MPU	Mpumalanga
NC	Northern Cape
NW	North West
WC	Western Cape

### 3.2 Background

For the purposes of this VPN, buffalo means African buffalo (*Syncerus caffer*) and excludes water buffalo, bison and other animals of the bovid group. African buffalo (*Syncerus caffer*) are large gregarious bovines, which at one time ranged across all but the driest parts of sub-Saharan Africa. Their numbers and distribution have been greatly reduced in the past century by habitat loss, the great rinderpest pandemic and non-sustainable hunting pressure. Buffalo are ecologically important because they are bulk grazers, which occur in large herds. Through short-term, mass grazing pressure, these herds are capable of opening up tall rank grass cover, to the benefit of other species which are more selective or short grass feeders. Buffalo are also important from the eco-tourism point of view, being a member of Africa's charismatic "Big five", which are much sought after for viewing, photography and hunting.

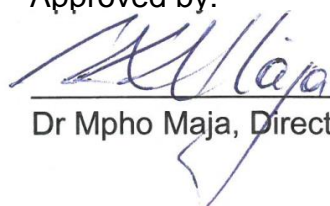
Unfortunately, buffalo play a major role in the maintenance and transmission of Foot and mouth disease (FMD) and Corridor disease (CD) in South Africa, where a large proportion of the total buffalo population are permanently infected with (carriers of) one or both diseases. Buffalo herds in the Kruger National Park (KNP) and Hluhluwe / Imfolozi

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Veterinary Procedural Notice: Buffalo Disease Risk Management

Approved by:

Page 5 of 41



Dr Mpho Maja, Director of Animal Health

2017 -02- 17

Date

Park (HIP) have also become infected with Bovine tuberculosis (BTB), which was probably introduced onto the African continent with infected cattle during the colonial era.

From an economic point of view FMD is the most important disease and outbreaks outside the FMD controlled areas have had detrimental effects on the animal industry including the exports of animals, animal products and other agricultural products. CD, BTB and BR have also had serious repercussions for our livestock based agricultural sector due to mortalities or erosive impact of these diseases. BTB and BR are also zoonoses, and pose a public health risk. Risk factors include the presence or movement of diseased buffalo, close contact between diseased buffalo and cattle or SPIF buffalo or other susceptible wildlife hosts, and the presence of intermediate host vectors (ticks) in the case of CD.

It is therefore incumbent on the Directorate of Animal Health to maintain strict control of all buffalo movements within the country, in order to prevent outbreaks of these diseases in our livestock and SPIF buffalo and other wildlife industries. Regular disease surveys in the buffalo populations are also important as far as National and Provincial disease control is concerned. All land on which buffalo are kept must be registered with the National Director of Animal Health.

**Important Note:** The breeding of “disease free” buffalo calves, making use of infected parent/breeding stock, was phased out and terminated on 31 December 2011 after public consultation.

### 3.3 Application of the Buffalo VPN

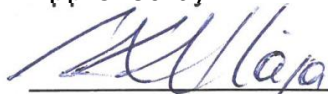
- 3.3.1 The application of this VPN is mandated by the Act and the Regulations promulgated in terms thereof. (See Legal Basis in Point 4)
- 3.3.2 The SV is responsible for the application of this VPN in his/her SV area and has to ensure that every official under his/her control who applies the VPN is acquainted with the contents thereof.
- 3.3.3 All veterinary officials and other persons and role-players involved in buffalo control must adhere strictly to this VPN. No deviation from the VPN is allowed, unless written authority is obtained from the relevant PEO in consultation with the DAH. Application for deviation or exemption must be made in writing to the DAH via or by the relevant PEO. Only written exemptions by the DAH will be valid.
- 3.3.4 This VPN must be read, interpreted and applied as a whole. Reference should be made also to other applicable legislation, Veterinary Procedural Notices / protocols / policies / manuals where appropriate.

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Veterinary Procedural Notice: Buffalo Disease Risk Management

Approved by:

Page 6 of 41



Dr Mpho Maja, Director of Animal Health

2017 -02- 17

Date

- 3.3.5 This VPN should be read in conjunction with the FMD Veterinary Procedural Notice.
- a) All buffalo in the FMD infected zones are considered to be infected with FMD.
  - b) No buffalo other than FMD free buffalo are allowed to be kept in the FMD protection zones. Keeping and movement of FMD free buffalo in the protection zones is subject to specific requirements for fencing and regular testing for the prescribed diseases and both shall be at the cost of the owner or manager of such buffalo. (Point 7 and 8).
  - c) There is compulsory testing for FMD (and other diseases) for all buffalo movements outside the FMD infected zones (Points 6, 7 and 8)
- 3.3.6 Veterinary fence control is not covered by this VPN, but guidelines are provided for the erection and maintenance of fences around land registered for the keeping of buffalo (see point 5). The erection and maintenance of fences around land registered for keeping of buffalo are the sole responsibilities of the owner or manager of the registered land. In general, fencing requirements are determined by the Provincial Nature Conservation Authorities. In the FMD and CD controlled areas specific state veterinary requirements apply as well.
- 3.3.7 According to the prescribed control measures for FMD and Corridor disease in Table 2 of the Regulations, contact between cattle and buffalo shall be prevented. Regulation 20 (8) also prescribes that “no African buffalo may be moved onto the same land where cattle are being kept, and no cattle may be moved onto the same land where African buffalo are being kept”.
- 3.3.9 Any ambiguity, contradiction, omission or problem in this VPN or which may arise when applying the VPN must be reported to the responsible SV, DD and PEO.

#### 3.4 Definitions and procedures

Definitions in the Act, Regulations and the OIE Terrestrial Animal Health Code are applicable in this VPN. The meaning of certain key words and phrases are as follows:

##### 3.4.1 Approved isolation facility

Buffalo proof enclosure on the registered land from where the buffalo originated, that is constructed in such a way to exclude other cloven hoofed animals, and which has been inspected and approved by the responsible SV.

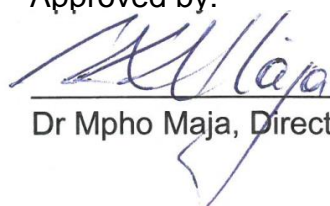
The facility must be such that the whole facility and all buffalo can be inspected, immobilised, examined, tested and sampled thoroughly, safely and easily (maximum of 1ha is recommended) for any controlled purpose in respect of which the owner must

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Veterinary Procedural Notice: Buffalo Disease Risk Management

Approved by:

Page 7 of 41



Dr Mpho Maja, Director of Animal Health

2017 -02- 17

Date

present the buffalo (Reg. 11 (3) a & b). Such a facility must have its own water supply as well as means to load buffalo. Should there be more than ten buffalo in isolation at any stage, the isolation facility should preferably consist of more than one pen.

Facilities must be built with the animals' welfare in mind and suitable space, shelter and shade, seclusion areas and drainage must be provided. Enough pens must exist to ensure rotation of animals to facilitate easy, safe and thorough cleaning of pens. Animals must not be housed in groups likely to result in conflict, and facilities must be provided to ensure problem animals can be removed from the group easily. It must be ensured that enough food and water troughs are provided to ensure that dominant animals are not able to prevent smaller or submissive animals from reaching the food and water.

#### 3.4.2 Approved Veterinary Laboratories

According to Regulation 12B of the Act, Veterinary Laboratories performing tests for controlled animal diseases must be approved for this purpose by the DAH, and operate in compliance with the conditions prescribed, with specific reference to SANAS accreditation for individual testing procedures.

#### 3.4.3 Buffalo-free zones

These are zones in which no buffalo may be kept. They should be at least 100 meters wide. They must be maintained to separate FMD infected buffalo from CD infected buffalo or SPIF buffalo; or to separate CD infected buffalo from SPIF buffalo.

#### 3.4.4 Corridor disease infected buffalo

- a) CD infected buffalo are considered to be permanent carriers of the *Theileria parva* parasite.
- b) CD infected buffalo are not regarded as permanent carriers of the FMD virus(es).
- c) CD infected buffalo may only be allowed on land registered for that purpose within the CD controlled areas of KwaZulu-Natal, Mpumalanga and Limpopo Provinces, excluding the FMD infected zones. Some of these populations are also infected with BTB and possibly BR.
- d) If they are moved to the FMD infected zones, these buffalo are henceforth also considered to be infected with FMD.

#### 3.4.5 FMD infected buffalo

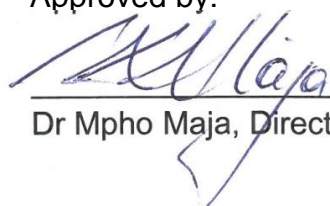
- a) FMD infected buffalo are considered to be permanent carriers of the FMD virus(es).
- b) These buffalo are regarded to be infected with FMD and CD and are also regarded as infected or potentially infected with BTB and/or BR.

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Veterinary Procedural Notice: Buffalo Disease Risk Management

Approved by:

Page 8 of 41



Dr Mpho Maja, Director of Animal Health

2017 -02- 17

Date



- c) FMD infected buffalo may only be allowed on land registered for that purpose within the FMD infected zones.
- d) All buffalo found in the Greater Kruger National Park Complex (including all registered privately owned game reserves and buffalo farms surrounding the KNP) and those in the Ndumo and Tembe game reserves in northern KwaZulu-Natal are considered to be FMD infected buffalo by virtue of the fact that they are present in the FMD infected zones.

#### 3.4.6 Isolation

- a) Keeping of a buffalo, or a specific group of buffalo, separate from other cloven-hoofed animals, in an approved isolation facility.
- b) Buffalo in isolation must be individually identified, with a microchip and with an ear tag or other externally visible identification number or mark. Individual identification is essential for record keeping of test results and movements of animals.
- c) The isolation must comply with the all-in all-out principle.

#### 3.4.7 Land registered for the keeping of buffalo

Land registered for the keeping of buffalo in terms of Regulation 20A (as amended) of the Animal Diseases Regulations.

In the case of the land to be registered for the keeping of buffalo comprising only a portion or part of "land" as defined in Sections 1 (1), (4) and (5) of the Act, the registration application has to clearly define the portion or part to be registered on a map showing the exact position of the fence. This portion or part is also to be reflected on the Certificate of Registration by the DAH.

No cattle may be kept or brought onto land that is registered for the keeping of buffalo. Refer to Regulation 20 (8)

#### 3.4.8 Official Supervision

- a) The physical presence of a veterinary official or authorised person during a controlled veterinary act; and
- b) Such official or authorized person must be satisfied that such a controlled veterinary act is performed according to this VPN.

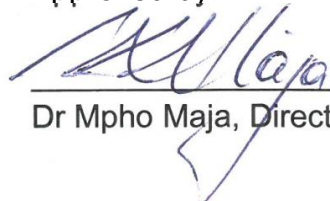
#### 3.4.9 PEO

Government veterinarian in charge of Animal Health Services in the Province (either the Provincial Director or the Provincial Chief Director of Veterinary Services). All or some functions of the PEO according to this VPN may be delegated in writing to a DD or SV for

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Veterinary Procedural Notice: Buffalo Disease Risk Management

Approved by:



Dr Mpho Maja, Director of Animal Health

Page 9 of 41

2017 -02- 17

Date

the whole or part of the province. Reference to PEO in this document includes the appropriately delegated official.

#### 3.4.10 Quarantine (regulation 13 of the Regulations).

Quarantine is the isolation of susceptible or infected animals in a quarantine camp (see Point 3.4.11) which has been approved by a SV or an official delegated by the SV for a specified period to prevent exposure to or spread of infection.

Biosecurity measures applicable to quarantine:

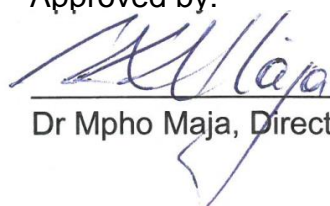
- a) The quarantine camp including the animal-free zone as well the maintenance of all biosecurity measures is under the control of the SV.
- b) Except for the veterinary officials, only persons tending to the animals are allowed in a quarantine camp. Biosecurity must be applied at all times.
- c) Quarantined animals must be individually identifiable with a microchip but preferably also with an ear tag. The type and nature of the mark must be indicated on the movement permit, if applicable.
- d) Quarantined animals must be managed and kept in such a way that:
  - (i) there is no contact or potential contact between them and any other susceptible animal or its product;
  - (ii) they do not make use of the same grazing, water points, stables, pens, camps, diptanks, crush-pens or facility as any other susceptible animal or its product;
  - (iii) dedicated workers handle or tend to the quarantined animals only.
- e) Instruments, equipment, utensils, clothes, vehicles and other items used in connection with quarantined animals must be disinfected before and after use.
- f) Quarantined animals must be inspected for clinical health at least weekly and on the day on which the quarantine is to be cancelled by a veterinary official. Where necessary, serum and/or tissue samples must be taken for further investigation (see point 10).
- g) During the quarantine period, complete records must be kept by the veterinary official and owner. The number of quarantined animals, all increases and decreases in numbers, the reasons therefore, all movements, deaths, treatments, inspections, examinations, tests and findings must be recorded.
- h) During the quarantine period any disease or mortality amongst quarantined animals must be recorded and reported immediately by the owner to the responsible veterinary official for further investigation, and by the responsible veterinary official to the SV or DD.

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Veterinary Procedural Notice: Buffalo Disease Risk Management

Approved by:

Page 10 of 41



Dr Mpho Maja, Director of Animal Health

2017 -02- 17

Date

- i) The responsible veterinary official must inspect the quarantine facilities during the quarantine period. Gates of quarantine camps must be kept locked at all times. Any breaks in the fence must be repaired immediately by the owner of the quarantined animals. State-controlled quarantine stations must be maintained by the state.

#### 3.4.11 Quarantine Camp

A quarantine camp is a double fenced animal holding facility that has been approved / reapproved within the week preceding the quarantine period by a SV or an official delegated by the SV.

A quarantine camp always consists of a double fence of which the two fences are 5 to 25 metres apart. A pen type camp (up to  $\pm$  100 metres x 100 metres) is acceptable for buffalo. Such a camp must have its own water supply. The animal-free zone between the two fences must at all times during quarantine be kept free of susceptible animals, and must be kept free of vegetation at all times, to facilitate inspection. The inner fence must be buffalo-proof.

The outer fence must be strong and high enough to keep the relevant (present or potentially present) game species effectively out. Such a fence must at least be 2,4 metres high and the bottom metre must consist of pig mesh, diamond mesh, "Bonnox" or ordinary wire closely and tightly strained to effectively keep small stock / game out, also in accordance with nature conservation statutory requirements. Facilities must be built with the animals' welfare in mind, as outlined in 3.4.1.

A clearly visible sign must depict the area as a quarantine area.

#### 3.4.12 Specific infection free (SPIF) buffalo

SPIF buffalo are considered to be free of infection of FMD, CD, BTB and BR in reference to the results of the prescribed disease testing schedules.

SPIF buffalo may only be kept on land registered for such buffalo in the FMD free zone, FMD protection zones and CD controlled areas, excluding the FMD infected zones.

#### 3.4.13 State Veterinary Area (SV Area)

A geographical area as determined by the relevant and responsible department in which one or more State Veterinarian(s) is/are responsible for the control of animal diseases (regulation 1 (1) of the Regulations – definition of "responsible State Veterinarian").

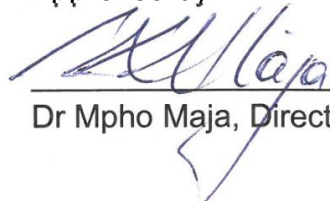
#### 3.4.14 Stray buffalo

- a) Any buffalo present on land not registered for the keeping of buffalo, irrespective of origin or ownership.

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Veterinary Procedural Notice: Buffalo Disease Risk Management

Approved by:



Dr Mpho Maja, Director of Animal Health

Page 11 of 41

2017 -02- 17

Date

- a) Buffalo of unknown origin on land registered for the keeping of buffalo.

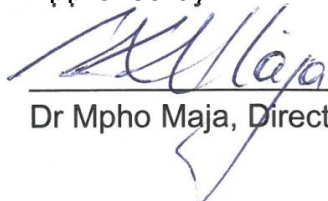
#### 3.4.15 Veterinary Movement Permits (regulation 20(1)(a) of the Regulations) / Red Cross Permit

- a) The purpose of veterinary movement permits is to:
- (i) control movements which pose or potentially pose animal health risks by allowing such movements only on risk-mitigating conditions specified in such a permit;
  - (ii) monitor movements by keeping records for tracing and reporting purposes.
- b) Veterinary movement permits, issued by a SV or by a veterinary official delegated in writing by a SV, are required for all movements of live buffalo as stipulated by Regulation 20 (1) (a) (v) in the whole of RSA
- c) For all movements of live buffalo Red Cross permits are required. A Red Cross permit is used where animals or products to be moved are potentially infected and therefore subject to one or more restrictions *en route* or at destination.
- d) Refer to FMD VPN for general requirements of veterinary movement permits
- e) Additional Requirements that must be complied with for a Red Cross permit movement:
- (i) The owner of the registered land at origin must apply on the form in Addendum C for the movement of buffalo. This application must contain the following information:
    - Origin of buffalo (owner, farm name and registration number)
    - Destination (owner, farm name and registration number)
    - Ear tag number, microchip number, age and sex of the buffalo to be moved
    - Name, surname, signature, ID number and contact details of the owner of the registered land at origin and at destination
    - Date of the application
  - (ii) All buffalo movements from land registered for the keeping of buffalo to other land registered for keeping of buffalo must take place with written proof of no objection from the relevant PEO(s) at destination;
  - (iii) All intra-provincial movements must also be approved by the relevant PEO
  - (iv) The PEO may delegate the duties under (ii) and (iii) above to a DD or SV
  - (v) The PEO approval must contain all the information as attached in Addendum D (Buffalo movement application form)
  - (vi) Name, surname, ID number and contact details of the transport company / driver of the vehicle transporting the buffalo must be recorded on the Red Cross permit

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Veterinary Procedural Notice: Buffalo Disease Risk Management

Approved by:



Dr Mpho Maja, Director of Animal Health

Page 12 of 41

2017 -02- 17

Date

### 3.4.16 Veterinary Official

A State Veterinarian (SV) or Animal Health Technician (AHT) responsible for official duties in an area.

## 4. LEGAL BASIS

### 4.1 General disease applications for buffalo

Buffalo are the natural carriers of FMD and CD, both of which are controlled animal diseases as defined in section 1 of the Act and for which control measures have been prescribed in terms of section 9 of the Act and Table 2 of the Animal Diseases Regulations, as amended. However, buffalo are also susceptible to and can be infected with BTB and BR, both of which are also controlled animal diseases. This VPN should therefore be read in conjunction with the Animal Diseases Regulations and the FMD Veterinary Procedural Notice.

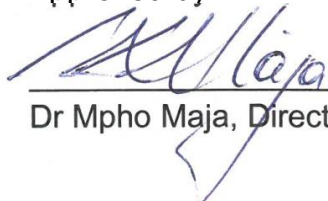
4.1.1 Any suspect or confirmed cases of controlled animal diseases must be reported to the DAH in terms of the Act:

- a) Section 11 (1) (b) (ii) of the Act states: *“Any owner or manager of land on which there are animals, and any owner in respect of animals, shall, whether or not such owner or manager has obtained advice regarding the health, or any certificate of fitness or health of the animals in terms of section 13 (1) (c), from the director, whenever such animals have become or can reasonably be suspected of having become infected with any controlled animal disease, immediately report such incidence in the prescribed manner to the director.”*
- b) Section 11 (2) of the Act as amended states: *“A veterinarian or any other person who finds the incidence or suspected incidence of any controlled animal disease in any animal or progeny or product thereof, shall immediately report such incidence to the director.”*
- c) Regulation 12 (1) states that: *“The reporting of the incidence or suspected incidence of a controlled animal disease by a responsible person in terms of section 11(1)(b)(ii) of the Act shall forthwith be done verbally to the responsible State Veterinarian or responsible technical officer [amended R2358 of 1993-12-10], and shall be confirmed in writing as soon as possible thereafter.*
- d) Regulation 12 (3) further stipulates that: *“A responsible person shall also forthwith bring the incidence or suspected incidence of a controlled animal disease referred to in subregulation (1) to the notice of-*
  - (a) *each owner or manager of adjoining land and each owner of susceptible animals on the same or adjoining land; and*

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Veterinary Procedural Notice: Buffalo Disease Risk Management

Approved by:



Dr Mpho Maja, Director of Animal Health

Page 13 of 41

2017 -02- 17

Date

(b) each prospective buyer of his susceptible animals as well as a person who has bought susceptible animals from him during the immediately preceding 30 days.

## 4.2 Management and movement of buffalo

4.2.1 In terms of Regulation 20 of the Animal Diseases Regulations the following restrictions on movement apply with specific reference to buffalo:

*“(1) (a) Subject to the provisions of subregulations (2) and (3) no person shall, except under the authority of a permit issued by the responsible State Veterinarian and otherwise than in accordance with the conditions specified in such permit -*

*(v) move or remove live buffalo, warthogs, bush pigs, wild pigs and ostriches from the land on which they are kept to any other land;”*

*“(3) A permit referred to in subregulation (1) for the movement or removal of buffalo shall be issued only if the land to which those buffalo are to be moved or removed are registered as contemplated in regulation 20A. Such a permit shall be restricted by the provision made in Regulation 20 (6). ”*

*“(6) No permit shall be issued for the movement or removal of live buffalo out of the controlled areas for Corridor or Buffalo disease or the infected zones and protection zones of the controlled areas for Foot and mouth disease as described in Table 1. Any exemption for this provision in terms of Regulation 11 (2) (a) and (b) may be granted only subject to written approval of the director referred to in section 2 (1) of the Act. ”*

*“(7) No live cloven hoofed animals may be moved from the Foot and mouth disease infected zones to the protection zones and free zone as described in Table 1”*

According to the prescribed control measures for FMD and Corridor disease in Table 2 of the Regulations, contact between cattle and buffalo shall be prevented. Regulation 20 (8) also prescribes that *“no buffalo may be moved onto the same land where cattle are being kept, and no cattle may be moved onto the same land where buffalo are being kept”*.

Records of buffalo numbers, decreases, increases and movements, must be kept by the owner and must be audited annually against movement permits and permit registers (regulation 17 of the Animal Diseases Regulations);

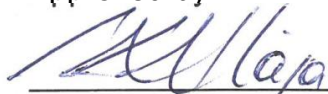
4.2.2 In terms of Regulation 20A of the Animal Diseases Regulations the following control measures are prescribed for the keeping and movement of buffalo:

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Veterinary Procedural Notice: Buffalo Disease Risk Management

Approved by:

Page 14 of 41



Dr Mpho Maja, Director of Animal Health

2017 -02- 17

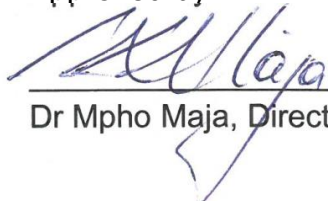
Date

- (1) *"No person shall keep buffalo on any land which is not registered by the director for this purpose.*
- (2) *An application for the registration of land for the keeping of buffalo shall:*
  - (a) *be made by the responsible person in charge of the land concerned on the applicable form which is obtainable from the office of the responsible State Veterinarian; and*
  - (b) *be handed in at the office of the responsible State Veterinarian.*
- (3) *Land for the keeping of buffalo shall only be registered if that land is fenced in a game proof manner for buffalo according to the requirements of the nature conservation authority concerned and, in the case of land which is situated within a controlled area with regard to foot and mouth disease or corridor disease and on which buffalo are kept or are to be kept, the fencing is electrified to the satisfaction of the responsible State Veterinarian.*
- (4) *The director shall consider each application on merit and issue a certificate of registration to the responsible person concerned if-*
  - (a) *the application and the land comply with the various conditions set out in sub-regulations (2) and (3); and*
  - (b) *he is satisfied that the keeping of buffalo on the land concerned will not pose a disease threat to the surrounding area.*
- (5) *A certificate of registration mentioned in sub-regulation (4) -*
  - (a) *shall be valid only in respect of the land specified therein;*
  - (b) *shall lapse when buffalo are no longer kept on the land concerned;*
  - (c) *may be withdrawn by the director if the holder thereof is convicted of an offence under this Act concerning the registration, keeping or movement of buffalo;*
  - (d) *shall not be transferable to other land;*
  - (e) *may be transferred to a new owner of the registered land provided he applies therefore in the manner referred to in sub regulation (2); and*
  - (f) *may on application of the responsible person concerned in the manner referred to in sub regulation (2), be amended to provide for an extension of the land to which it applies.*
- (6) *Buffalo which are kept on land not registered in terms of this regulation or of which the registration has been withdrawn by the director shall be removed from the land concerned or be destroyed by the responsible person concerned, within the period and in such a manner as determined by the responsible State Veterinarian in an order served on such a person.*
- (7) *If the responsible person concerned refuses or fails to comply with the provisions of sub-regulation (6) the responsible State Veterinarian may seize the buffalo*

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Veterinary Procedural Notice: Buffalo Disease Risk Management

Approved by:



Dr Mpho Maja, Director of Animal Health

Page 15 of 41

2017 -02- 17

Date

*concerned in terms of section 17 (1) of the Act, and dispose of them in a manner determined by the director.”*

#### **4.3 Controlled Areas**

The term “controlled areas” is used to be consistent with current legislation for FMD and CD. Currently existing controlled areas as per the Act are described in Table 1 of the Animal Diseases Regulations, as amended. For description of the FMD zones refer to the FMD VPN.

#### **4.4 Proclamation of VPN in Government Gazette**

A Notice bearing reference to the Buffalo VPN will be published in the Government Gazette. The Buffalo VPN itself will be made available to the public on the DAFF website ([www.daff.gov.za](http://www.daff.gov.za)).

### **5. KEEPING OF BUFFALO**

#### **5.1 Registration of land for the keeping of buffalo**

In terms of Regulation 20A of the Animal Diseases Regulations, any land in the Republic of South Africa on which buffalo are kept, must be registered for that purpose with the National Director of Animal Health. Where new land is to be registered, this must be done prior to the introduction of the buffalo onto the land. Application for the registration of land for the keeping of buffalo must indicate the disease status of the buffalo to be introduced onto the land.

In all cases, the registration application has to clearly define the portion(s) or part(s) to be registered. These portion(s) or part(s) are also to be reflected on the Certificate of Registration by the DAH.

No cattle may be kept on land that is registered for the keeping of buffalo. According to the prescribed control measures for FMD and Corridor disease in Table 2 of the Regulations, contact between cattle and buffalo shall be prevented. Regulation 20 (8) also prescribes that “no buffalo may be moved onto the same land where cattle are being kept, and no cattle may be moved onto the same land where buffalo are being kept”.

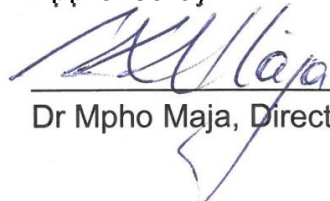
##### **5.1.1 Application for the registration of land for the keeping of buffalo**

- a) Application by the owner of the land for such registration must be made on the application form as in Addendum A, through the office of the local State

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Veterinary Procedural Notice: Buffalo Disease Risk Management

Approved by:



Dr Mpho Maja, Director of Animal Health

Page 16 of 41

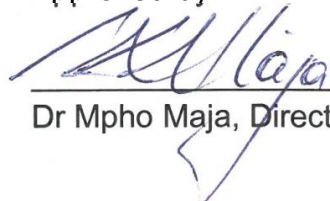
2017 -02- 17

Date



Veterinarian who must inspect and recommend the land as well as the fence and the isolation facility for registration.

- b) Application must be made by the owner of the land or a person/legal entity that has been authorised in writing by the owner/s of the land to make such application. Proof of ownership or authorisation must be attached to the application. The person or entity in whose name the land is registered will remain responsible for all the buffalo on that land at all times, whether or not the buffalo belong to him/her/it. It is highly recommended that such a person or entity enter into a written agreement with any other persons or entities that he/she/it may allow to keep buffalo on the registered land.
- c) The land must be fenced in a game-proof manner for buffalo. This must be approved in writing by the Provincial Conservation Authority. This approval must be attached to the application.
- d) The application must include a clear description of the farm, portion(s) of the farm, camp or facility to be registered. The exact area will be referred to on the registration certificate.
- e) The application must be accompanied by a detailed map showing the exact extent of the land to be registered, the position of all fences, gates, structures and the location of the compulsory isolation facilities (bomas) for buffalo.
- f) After recommendation of the land by the SV and the PEO, the application must be sent through to the DAH, where the registration will be processed, and if approved the details will be entered into the National Buffalo Register.
- g) A registration certificate will then be issued and delivered to the PEO/SV. The PEO/SV is responsible for the delivery of the original certificate to the owner/manager of the land.
- h) The DAH will keep the register updated at all times.
- i) All requests for de-registrations or changes to the registered land must be in writing to the DAH and follow the same route via the SV and the PEO.
- j) It remains the responsibility of the owner or applicant to comply with the requirements (e.g. habitat, fencing, and animal welfare) of the Provincial Nature Conservation Authorities and/or local Agricultural Unions. Where these relevant authorities have additional/stricter measures in place for registration of land, it is the responsibility of the applicant to consult with these relevant authorities prior to application for approval.
- k) All records of the application and a copy of the registration certificate must be kept at the office of the PEO/SV.

  
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- l) Application for amendment must be made in case of any change in the extent of the registered land.

#### 5.1.2 Fencing requirements

Land for the keeping of buffalo will only be registered if it is fenced in a game-proof manner appropriate for buffalo according to the requirements of the Provincial Nature Conservation Authority.

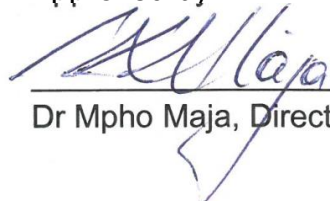
- a) In the case of land which is situated within the FMD or CD controlled areas, the fencing must be electrified to the satisfaction of the responsible State Veterinarian. The perimeter fence must be a minimum of 1.8 meters high and electrified on the inside by a minimum of two electrified wires on double offsets, at a height of 600 mm and 1200 mm above ground level. A minimum potential difference of 5000 volts must energise these electrified wires. It is recommended that when fence-breaking species such as elephant, rhinoceros and giraffe occur on the land registered for the keeping of buffalo or adjacent to it, the fence should be electrified on three levels (600 mm, 1200 mm & 1800 mm) and the potential difference of the electrified wires must be stepped up to 6000 volts. It may be necessary to electrify the fence on both sides. Exemption may be applied for in cases where an alternate robust fence structure is used, which increases the physical strength of the fence. For example, fences constructed using railway line straining posts, cables and diamond mesh or other mesh may be considered without electrification.
- b) The erection/construction and maintenance of these fences is the responsibility of the owner / manager of the land registered for the keeping of buffalo.
- c) Where a fence(s) is (are) not maintained by the owner, he/she must declare in writing to take responsibility for that (those) fence(s) when the neighbouring owner is not maintaining the fence any longer. In the case of double fences being required (for example FMD protection zones), this declaration has to include a commitment to erect one / two new fences on the applicant's land.
- d) Land in the FMD free zone, excluding the CD controlled area of KwaZulu-Natal, registered for the keeping of SPIF buffalo, must be fenced with at least a single 1.8 meter game-proof fence.
- e) Land in the FMD protection zones registered for the keeping of buffalo (both SPIF and CD infected buffalo), must be fenced with two buffalo/game-proof electrified (outside of outer and inside of inner) fences, at least five meters apart to prevent contact with stray buffalo, and at least 100 meters away from any land where FMD/CD infected buffalo are kept as well as from any international borders with Mozambique and Zimbabwe. Both fences are to be maintained by the owner/manager subject to point (b). See Point 8

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Veterinary Procedural Notice: Buffalo Disease Risk Management

Approved by:

Page 18 of 41



Dr Mpho Maja, Director of Animal Health

2017 -02- 17

Date

- f) Land in the CD controlled area of KZN province outside of the FMD controlled areas, registered for the keeping of SPIF buffalo, must be fenced with two game-proof electrified (outside of outer and inside of inner) fences, at least five meters apart to prevent contact with stray buffalo, and at least 100 meters away from any land where CD infected buffalo are kept. Both fences are to be maintained by the owner/manager. See Point 8
- g) The same 100 meters buffalo-free zone shall apply to the minimum distance between SPIF buffalo that are kept in the FMD free zone / CD free area and CD infected buffalo that are kept in FMD protection zones / CD controlled areas.
- h) In addition, land that is registered for the keeping of buffalo has to have isolation facilities (boma) for buffalo on the premises in order to make provision for the handling, testing and isolation of buffalo during movements, surveillance and suspect disease outbreaks.
- i) For any deviation from the above fencing or isolation facility requirements, individual application with motivation must be made through the SV / PEO to DAH.

#### 5.1.3 Change of ownership of land registered for the keeping of buffalo.

The new owner must apply within 30 days of change of ownership for continuation of the current registration. The application must be made via the SV and PEO. Application must be made on the application form as in Addendum A by the owner of the land or a person/legal entity that has been authorised in writing by the owner/s of the land to make such application. Proof of ownership or authorisation must be attached to the application.

#### 5.1.4 Incorporation of registered land for the keeping of buffalo into a conservancy

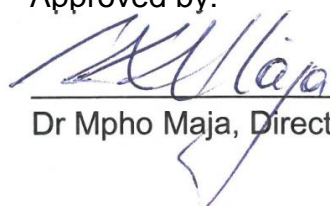
In order to address the issue of ownership versus land-use rights, all land within a conservancy must be included on a single buffalo registration certificate with a single management body as the responsible registered owner. Every landowner in a conservancy must cede the management rights of buffalo on his/her land to the single management body of the conservancy by way of a legal document.

Under no circumstances can permission be given for fences around land registered for the keeping of buffalo to be dropped before such land has been officially included into a conservancy and the management rights for the buffalo on the whole conservancy have been clarified legally.

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Veterinary Procedural Notice: Buffalo Disease Risk Management

Approved by:



Dr Mpho Maja, Director of Animal Health

Page 19 of 41

2017 -02- 17

Date

### 5.1.5 Adjacent individually registered properties

In the case where owners of adjacent individually registered properties want such properties to remain individually registered with separate management responsibility for buffalo but without fences between the properties, the following is required:

- a) Written legal agreement between the owners that the common boundary is not fenced.
- b) Written undertaking by each individual owner to erect a fence complying with this VPN in case of lapse or cancellation of registration of the adjacent property.
- c) Written acknowledgement from all owners that all the properties are considered as one epidemiological unit for animal disease control purposes; for example in case of a disease outbreak all properties will be quarantined and handled as one epidemiological unit.

### 5.1.6 Certificate of registration

The certificate of registration:

- a) Shall be valid only in respect of the land or portion of land specified therein;
- b) Shall lapse when no buffalo are kept on the land concerned for a period of twelve months; in such a case de-registration will be recommended by the PEO to the DAH.
- c) May be withdrawn by the DAH if the holder thereof is convicted of an offence under this Act, concerning the registration, keeping or movement of buffalo;
- d) Shall not be transferable to other land;
- e) May be transferred to a new owner of the registered land provided he/she applies therefore in the manner referred to in Point 5.1.1
- f) May on application of the owner concerned, in the manner referred to in Point 5.1.1 be amended to provide for an extension of the land to which it applies.

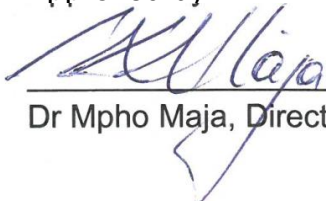
## 5.2 De-registration of land registered for the keeping of buffalo

- a) In the event that the owner of registered land/portion of land wants to de-register that land for the keeping of buffalo, written proof has to be provided by the owner that there were no buffalo kept or seen on the land for at least a 6 month period prior to the application.
- b) Notice of intent must be sent from the owner to his/her SV in writing or the SV must inform the PEO of the intent to deregister the land;
- c) Thereafter, on a date agreed between the owner / manager and the SV, an inspection of the land/portion of the land will be executed to ensure that there are no more buffalo on the registered land;

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Veterinary Procedural Notice: Buffalo Disease Risk Management

Approved by:



Dr Mpho Maja, Director of Animal Health

Page 20 of 41

2017 -02- 17

Date

- d) The owner/manager of the land will then hand over the certificate of registration to the SV, who will forward said document, via the PEO's office, to the DAH for deregistration;
- e) The previously registered land / portion of the land will then be deleted from the National buffalo register, and the relevant SV/ PEO will receive confirmation within 30 days;
- f) In the event where buffalo have not been present on the land for a period of twelve months, an inspection of the land/portion of the land will be executed by the SV to ensure that there are no more buffalo on the registered land. The SV may then recommend de-registration of the land via the PEO to the DAH.
- g) In the case of de-registering of land for the keeping of buffalo which previously had CD or FMD infected buffalo, appropriate control measures will be applied.

### **5.3 Annual inspection of land registered for the keeping of buffalo**

- a) The registered land, the fences, the isolation facility, the buffalo (if possible) and the records, must be inspected at least once a year by the SV or delegated official;
- b) Each SV office must maintain a register and records of annual veterinary inspections
- c) In the case of any non-compliance, an order in terms of section 15 of the Act must be served on the owner / manager of the land (in the case of fence non-compliance in consultation with Nature Conservation authorities). This order must specify the details of non-compliance, corrective measures and the time period for compliance. In case of continued non-compliance, the owner/manager must be prosecuted (in the case of fence non-compliance, preferably in conjunction with Nature conservation authorities). If the owner/manager is convicted, registration may be withdrawn.
- d) In the case of requirements for registration for the keeping of buffalo that came into force after registration of a specific land, the owner should be encouraged to comply with the new requirements within a reasonable time period as such requirements will be compulsory for certain actions e.g. movement of buffaloes, as well as during future potential confirmation of registration.

### **5.4 Health status of buffalo**

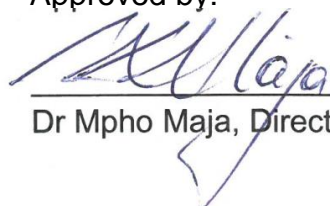
- a) In order to obtain a functional disease status data base of each buffalo farm, the responsible SV must be informed timeously of any buffalo hunting, culling, or "hands on" manipulation, where the animals may be sampled for disease screening purposes;

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Veterinary Procedural Notice: Buffalo Disease Risk Management

Approved by:

Page 21 of 41



Dr Mpho Maja, Director of Animal Health

2017 -02- 17

Date

- b) FMD infected buffalo may only be kept on land registered for the keeping of buffalo in the FMD infected zones (as per table 1 of the Regulations).
- c) CD infected buffalo may only be allowed on land registered for that purpose within the CD controlled areas of KZN, Mpumalanga and Limpopo Provinces excluding the FMD infected zones.
- d) SPIF buffalo may be kept on registered land outside of the FMD/CD controlled areas, as well as in the FMD protection zones or in the CD controlled areas in KZN excluding the FMD infected zone. SPIF buffalo that are kept in the FMD protection zones or in the CD controlled area of KZN have to comply with specific requirements for the keeping and movement of buffalo (see Point 8).

## 6. DISEASE TESTING OF BUFFALO

### 6.1 General

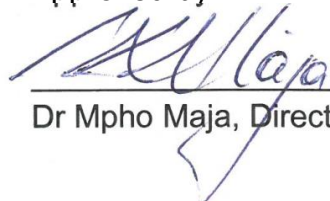
- a) All buffalo sampling and testing for all relevant diseases (FMD, CD, BTB and BR) must be performed under official supervision.
- b) Disease testing of a buffalo herd, or a percentage thereof, may be ordered by the PEO at any time, if circumstances demand this action.
- c) For movement purposes the following testing is required:
  - i. SPIF buffalo must be tested for FMD, CD, BTB and BR;
  - ii. Known FMD infected buffalo must be tested for BTB and BR (these buffalo are already regarded as positive for FMD and CD);
  - iii. Known CD infected buffalo must be tested for FMD, BTB and BR (these buffalo are already regarded as positive for CD);
  - iv. In the case of the BTB and /or BR being present in the buffalo population at both origin and destination, the BTB and / or BR test (whichever is relevant) may be waived with agreement with the owner(s) at origin and destination as well as the SV and PEO. This scenario will be allowed only for movements within and into the FMD infected and protection zones.
- d) All costs associated with disease testing are to be paid by the owner / manager of the buffalo, including the costs associated with the immobilisation, capture, translocation, sample collection, courier sample transport costs and laboratory charges. (In special cases an application may be made to the DAH via the SV and PEO for DAFF to cover the costs of the laboratory charges. No such payment will be made by DAFF unless there is prior written approval by the DAH). See point 10.
- e) All records and results related to disease testing must be kept by the SV in the file for the specific registered land.

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Veterinary Procedural Notice: Buffalo Disease Risk Management

Approved by:

Page 22 of 41



Dr Mpho Maja, Director of Animal Health

2017 -02- 17

Date

- f) Outside of the FMD and CD controlled areas, a single negative test for all four diseases will generally suffice for movement purposes.
- g) For movements in certain high-risk situations or areas, and in the case of suspect test results, multiple testing and quarantine may be required by the SV, PEO or DAH.

## 6.2 Diagnostic tests

- a) For FMD, the liquid phase blocking ELISA conducted at the ARC-OVI TADP is the standard test for all 3 SAT-serotypes.
- b) For CD, a panel of tests including immuno-fluorescent antibody test (reciprocal IFAT) and real time PCR (Hybrid II assay) will be conducted at the ARC-OVI
- c) For BR, the Rose Bengal Test (RBT) and the standard Complement Fixation Test (CFT) are both required tests. The Serum Agglutination Test (SAT) may be used as additional screening test but the CFT remains the confirmatory test for every sample.
- d) For BTB, the comparative intra-dermal tuberculin test is the required test for movement purposes and should be performed as described in the current BTB Manual for cattle, except for interpretation. The gamma-interferon (IFNg) test may be used as an adjunct test under direction of the SV and his / her PEO. The IFNg test is currently not DAFF approved as the sole test for movement purposes.
- e) The microchip number of each buffalo must appear on the submission form for all diagnostic samples submitted for disease screening. The sample submission form with the list of microchip numbers, matching the numbers on the test tubes, must arrive with the samples at the laboratory.
- f) No sample without a corresponding microchip number will be tested by the laboratory.
- g) Any request for a microchip number to be changed after the results have been released to the owner, will be considered only if it is a minor change possibly due to a transcription error. It requires a written request by the SV directly to the ARC-OVI Registration desk.
- h) Refer to Addendum B for guidelines on the collection of samples for disease testing and the interpretation of the test results.

## 6.3 Guidelines for testing

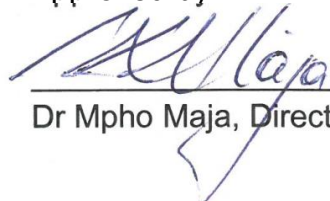
### 6.3.1 General guidelines

- a) Guidelines for the interpretation of disease test results are provided in Addendum B. However, various other factors should also be considered and investigated. The full history of the farm and buffalo herd, origin and health status of the buffalo must

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Veterinary Procedural Notice: Buffalo Disease Risk Management

Approved by:



Dr Mpho Maja, Director of Animal Health

Page 23 of 41

2017 -02- 17

Date

always be considered when interpreting any test result before making a final diagnosis.

- b) Calves younger than 3 months, including those born in the isolation facility, need not be tested for movement purposes if they are moved with their dams, but they must be microchipped. Orphan calves of any age must be tested for movement purposes.
- c) All buffalo that are to be translocated must remain in isolation between the day of blood sampling and the day of movement. The isolation must comply with the all-in all-out principle.

### 6.3.2 Identification

- a) All buffalo that are to be translocated must be microchipped for permanent identification. Primary microchip transponders must be implanted at or before first test, high up on the neck behind the left ear, and in the case of any secondary microchips they must be implanted between the shoulder blades or at the base of the tail. It is acknowledged that other systems are used; however the location of the microchip must always be indicated together with the number. Owners are required to keep accurate records of microchips, especially in cases where multiple microchips are inserted.
- b) All buffalo isolated for testing must also be ear-tagged during the testing period prior to movement. Hot or cold branding or tattooing of buffalo is optional. It is the responsibility of the owner to provide the equipment, handling facilities and opportunity for effective microchip reading.
- c) In the case of calves younger than three months that are not tested, the identification of the calf and its dam must be paired and linked on the application form as in Addendum D.

### 6.3.3 Specific guidelines for disease testing in the FMD protection zones

See point 8

## 7. MOVEMENT OF LIVE BUFFALO

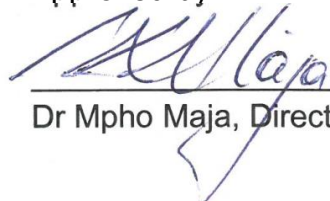
### 7.1 General requirements

- a) In terms of Regulation 20 (1) (v) and (3) of the Animal Diseases Regulations, a permit (Red Cross permit) is required for movements of all live buffalo in all provinces of South Africa. All movements must take place under State Veterinary supervision. In addition, buffalo may only be moved to land which is registered for the keeping of buffalo of the same or lower health status.

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Veterinary Procedural Notice: Buffalo Disease Risk Management

Approved by:



Dr Mpho Maja, Director of Animal Health

Page 24 of 41

2017 -02- 17

Date



- b) The conditions for the movement of buffalo within the RSA are indicated in the table in Addendum E.
- c) For details on the testing requirements for movement of live buffalo, see point 6.
- d) In terms of Regulation 20 (6) of the Animal Diseases Regulations, no permit shall be issued for the movement or removal of live buffalo out of the controlled areas for CD or the infected and protection zones of the controlled areas for FMD as described in Table 1 of the Animal Diseases Regulations. Any exemption from this provision in terms of Regulation 11 (2) (a) and (b) may be granted subject to the written approval of the Director referred to in section 2 (1) of the Act. See Chapter 8.
- e) In terms of Regulation 20 (7) of the Animal Diseases Regulations, no live cloven hoofed animals may be moved from the FMD infected zones to the protection zones and free zone as described in Table 1.
- f) In terms of Regulation 20 (8) of the Animal Diseases Regulations, no buffalo may be moved onto the same land where cattle are being kept, and no cattle may be moved onto the same land where buffalo are being kept.
- g) No FMD infected buffalo are allowed in the FMD protection or free zones. The movement of FMD infected buffalo is restricted to the FMD infected zones of KwaZulu-Natal, Mpumalanga and Limpopo provinces.
- h) No CD infected buffalo are allowed outside the CD controlled area. The movement of CD infected buffalo is restricted to the CD controlled areas of KwaZulu-Natal, Mpumalanga and Limpopo provinces.
- i) For special requirements for movements of SPIF buffalo from the FMD protection zones or from the CD controlled area in KZN, see point 8.
- j) Live buffalo movements are also subject to BR and BTB control.
- k) For control over movements of buffalo products, refer to the FMD VPN.
- l) All land registered for the keeping of buffalo from where and to where buffalo are requested to move, must have an isolation facility complying with 3.4.1.

## 7.2 Auction procedures

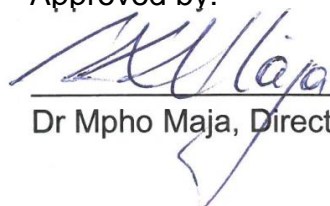
- a) Auction facilities, through which buffalo are to be marketed, must be registered for the keeping of buffalo. Prior to registration, the structure of the facility must be approved by the Provincial Nature Conservation Authority.
- b) All buffalo being moved to an auction facility must have been subjected to the required disease screening protocol, with negative results, prior to the movement. The movement to the auction facility must be covered by a Red Cross permit issued by the responsible state veterinarian at origin.

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Veterinary Procedural Notice: Buffalo Disease Risk Management

Approved by:

Page 25 of 41



Dr Mpho Maja, Director of Animal Health

2017 -02- 17

Date

- c) Following the auction, these buffalo may be moved back to the land of origin, or to land registered for the keeping of buffalo or a facility of the same or lower health status. This movement must be covered by a Red Cross permit. Special care must be taken to ensure that the 90 day maximum period after the sampling date is not exceeded by the period of stay in the auction facility.
- d) In general, auctions are considered to be a high biosecurity risk, because of the mixing of animals of potentially different health status. (If possible, such practice should be discouraged.) However, should buffalo be kept at an auction, the following conditions must be adhered to:
  - i. No possible contact between buffalo from different groups
  - ii. No possible contact with other species
  - iii. The land at destination is registered for buffalo of the appropriate health status.

### **7.3 Movement application and approval procedures**

- a) The application for movement of buffalo must be made by the owner of the land to the SV at origin and it is recommended that the application form in Addendum C be utilised for this purpose.
- b) The SV must verify all the information on the application form and the test results.
- c) The required test results must be attached by the SV to the application form.
- d) The SV must add additional relevant information on the history and the health status of the buffalo and expiry date of the validity of tests (90 days after sampling).
- e) The SV must make a recommendation on the movement to the PEO at origin within 3 working days after receiving the complete and correct application and test results
- f) The PEO at origin must evaluate the application and recommend or not recommend it.
  - i. If recommended, the PEO at origin may add additional comments and must indicate the conditions for the movement. The PEO at origin must request approval of the movement from the PEO at destination within 5 working days after receiving the complete and correct application form and test results;
  - ii. If not recommended by the PEO, the SV and the owner must be informed with reasons and conditions needed to comply within 5 working days after receiving the complete and correct application and test results.
- g) The PEO at destination must evaluate the application and approve or reject it.

- i. If approved, the PEO at destination may add additional comments and must indicate the conditions for the movement.
- ii. If rejected, the PEO at destination must inform the PEO at origin of the reasons and conditions needed to comply, within 5 working days after receiving the complete and correct application and test results.
- h) The PEO at origin must inform the SV at origin within 2 working days of the outcome of this application
- i) The SV must inform the applicant of the outcome of the application without delay
- j) The whole application must be filed by the SV and PEO at origin and destination
- k) Timeous obtaining of Nature Conservation permits is the responsibility of the applicant

#### 7.4 Loading requirements

- a) The SV at origin, after receiving authorisation for a buffalo movement, will inform the SV at destination, and they will determine a date for movement. Unless special arrangements are made with the responsible officials, buffalo loading and off-loading should take place during office hours, and not over weekends or public holidays.
- b) On the date of movement, the SV at origin (or delegated AHT) must:
  - i. read and note the microchip number of each buffalo. However, if the official is familiar with the buffalo and land, and if the buffalo to be moved are in a separate isolation facility (all in / all out) and are ear-tagged or otherwise visibly identified, then he/she may at his/her discretion read the microchips at the time of the last blood sampling. He/she must then re-check (audit) the number and sex of animals and the tag / paint / brand numbers / shave marks at loading;
  - ii. ensure that all buffalo are visibly free of live ticks and treated with an effective acaricide before loading;
  - iii. count the buffalo and supervise their loading;
  - iv. seal the truck with a numbered seal;
  - v. issue the Red Cross Permit and attach a copy of the approved application to the Red Cross Permit. The registration number of the vehicle and trailer, both registration numbers of land at origin and destination and the seal number must be written on the permit. A list of the microchip numbers as well as ear-tag numbers / paint marks / temporary brand marks / shave marks must be attached to the permit;
  - vi. notify the SV at destination of the estimated time of arrival, the vehicle and trailer registration numbers and the seal numbers.

- c) The owner / manager must ensure that:
  - i. buffalo are handled and transported in a humane manner, and in accordance with animal welfare guidelines;
  - ii. all game transport trucks are thoroughly cleaned and then disinfected before and after each buffalo movement. All old bedding must be removed and destroyed and the game compartment must be sprayed for ticks with an effective acaricide;
  - iii. the game compartment doors structurally lend themselves to official sealing.

## 7.5 Requirements at destination

- a) The SV/AHT at destination must:
  - i. check the seal numbers, vehicle and trailer registration number, and the number of buffalo;
  - ii. if everything is in order, break the seal, supervise the offloading of the buffalo and endorse the permit by indicating the number of buffalo received and dating and signing it. Re-reading of microchips may be required at offloading by the SV or PEO if there is any uncertainty about the sealing of the truck or the identification of the buffalo;
  - iii. inform the SV at origin of the arrival of the buffalo without delay.
- b) If the movement did not comply with the stipulated conditions, the buffalo must be isolated and retained at destination under veterinary supervision, and the PEO at destination must be informed without delay. The PEO at destination must inform the PEO at origin and decide on further action.

## 7.6 Health status at destination

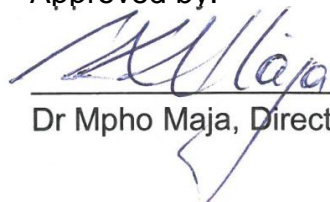
The movement of SPIF or CD infected buffalo into the FMD infected zones, and the movement of SPIF buffalo into the CD controlled areas of KwaZulu-Natal, Mpumalanga and Limpopo provinces and into the BTB endemic areas, should be strongly discouraged. SPIF buffalo are susceptible to CD and may well contract clinical disease and die from it. Should such a movement take place, the buffalo will, as a general rule, lose their previous status and attain the status of the zone at destination. The owners should be fully informed that he/she is acting at own risk and therefore consent in writing to the consequences of such movements for the health status of the buffalo. If SPIF buffalo are moved into the FMD protection zones and CD controlled areas, and the owner wants the buffalo to retain their health status, special conditions for the keeping and ongoing testing of such buffalo will apply (see Point 5 & 8). The owner should be fully informed and consent in writing to these additional conditions and understand that the health status of such buffalo will have to be re-confirmed by appropriate multiple testing before further movements out of these zones can be considered.

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Veterinary Procedural Notice: Buffalo Disease Risk Management

Approved by:

Page 28 of 41



Dr Mpho Maja, Director of Animal Health

2017 -02- 17

Date

## **8. SPECIAL CONDITIONS FOR THE KEEPING AND MOVEMENT OF SPIF BUFFALO IN THE FMD PROTECTION ZONES IN LIMPOPO, MPUMALANGA AND KWAZULU-NATAL AND THE CORRIDOR DISEASE CONTROLLED AREA OF KWAZULU-NATAL**

This section describes the specific restrictions for SPIF buffalo born from disease free parent stock (free of FMD, CD, BTB and BR) on registered properties within the FMD protection zones and /or CD controlled areas

It must be remembered that the FMD protection zones are also CD controlled areas and any buffalo kept in the FMD protection zones and the CD controlled areas are considered to be infected with CD unless they are kept under specific biosecure conditions and tested on a regular basis.

Please note that specific application forms are available from the DAH on request that have to be used for application for conditional exemption and final exemption in terms of Animal Diseases Regulation 20 (6).

### **8.1 Keeping of SPIF buffalo in the FMD protection zones and the CD controlled areas**

#### **8.1.1 Fencing requirements**

The land registered for the keeping of SPIF buffalo must comply with fencing requirements as indicated in Point 5.1.2.

#### **8.1.2 Annual testing requirements**

- a) Annual disease testing of at least 10 randomly selected adult buffalo (over 24 months – after at least two CD vector cycles) resident on this land will be mandatory. This testing is an ongoing monitoring activity that is designed to detect a disease prevalence of > 25% with >95% confidence.
- b) The testing has to be conducted at the cost of the owner / manager of the buffalo as a prerequisite for the ongoing registration of the land for the keeping of SPIF buffalo in the FMD protection zones and the CD controlled area of KZN.
- c) Testing for FMD, CD, BR and BTB is compulsory on a yearly basis.
- d) After at least 3 yearly testing cycles with negative results, the offspring of the disease free parent stock on such land may be eligible for exemption for their movement out of the FMD and CD controlled areas (Regulation 20 (6)).
- e) The test results of buffalo legally moved with State Veterinary permits from the land within the previous 12 months may qualify as contribution to the annual disease testing at the discretion of the State Veterinarian.

#### **8.1.3 Requirements in respect of record keeping**

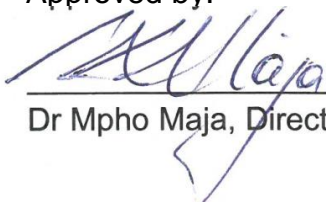
Full records for all buffalo on the land must be available and must be updated regularly with any increases or decreases of animals. Full records for at least 3 years are an essential requirement if the owner wishes to apply for exemption for the movement of

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Veterinary Procedural Notice: Buffalo Disease Risk Management

Approved by:

Page 29 of 41



Dr Mpho Maja, Director of Animal Health

2017 -02- 17

Date

offspring of disease free parent stock on the land. It is the responsibility of the owner / manager of the land registered for the keeping of the buffalo to compile and keep records of the buffalo population on that land.

## **8.2 Movement of SPIF buffalo out of the FMD protection zones or out of the CD controlled areas**

8.2.1 Owners / managers of land registered for the keeping of SPIF buffalo in the FMD protection zones and the CD controlled areas may apply for exemption from Regulation 20 (6) to move their buffalo out of the FMD protection zones or the CD controlled areas to the rest of the country only subject to the following conditions:

- a) The buffalo must be demonstrated to be the offspring of disease free parent stock;
- b) The buffalo herd of origin has undergone at least three annual testing cycles with negative test results for FMD, CD, BR and BTB;
- c) There is no history of BTB or BR infection in any species on the land.

8.2.2 The following procedures should be followed:

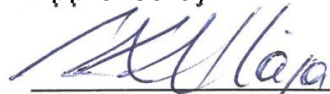
- a) The entire double fenced buffalo farming unit must be quarantined from the first day of capture of the buffalo, until the last day of loading the buffalo. No movement of any other cloven hoofed species may be permitted onto or off the land during this quarantine period;
- b) The entire group of buffalo to be moved should be captured and held in a boma, from last day of capture until movement after final exemption has been granted;
- c) All captured buffalo must be micro-chipped and in addition must be ear tagged, paint marked or temporarily branded before or at first testing.
- d) For movements from the land all buffalo to be moved, but a minimum number of 5 adult buffalo, must be tested. If the buffalo to be moved are calves or a lesser number of buffalo, then five (5) additional adult female buffalo from the same land must be tested;
- e) If the land is in the FMD protection zones:
  - i. The buffalo are to be tested for FMD, CD, BTB and BR at capture or later. In the event of cows calving during the quarantine period, the quarantine period must be extended to allow for a second BR test at least 6 weeks after calving.
  - ii. After the buffalo have been tested and negative results received, the owner / manager may apply for conditional exemption through the SV and his/her PEO to the DAH for the movement of buffalo out of the FMD protection zones;
  - iii. Once conditional exemption is granted, the buffalo are to be re-tested for FMD at least 21 days after the first FMD test.

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Veterinary Procedural Notice: Buffalo Disease Risk Management

Approved by:

Page 30 of 41



Dr Mpho Maja, Director of Animal Health

2017 -02- 17

Date

- iv. Once the results are available and negative, application for final exemption may be submitted;
- f) If the land is in the CD controlled area in KZN:
  - i. The buffalo are to be tested for FMD, CD, BTB and BR at capture or later. In the event of cows calving during the quarantine period, the quarantine period must be extended to allow for a second BR test at least 6 weeks after calving.
  - ii. Once the results available are and negative, application for final exemption may be submitted;

8.2.3 Any single positive test (for CD, BR, BTB and FMD) will dictate the future animal disease status of the property.

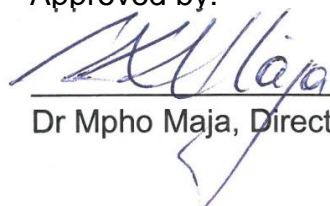
## 9. STRAY BUFFALO CONTROL

- a) All stray buffalo pose a potential disease risk and must be reported to the SV immediately, who must inform the PEO and DAH as soon as possible.
- b) Stray buffalo control is the responsibility of the PEO and Provincial Nature Conservation Authority.
- c) The SV must seize stray buffalo in terms of section 17 (1) (b) of the Act.
- d) Any stray buffalo in the FMD infected or protection zones is regarded as infected with FMD and must be removed regardless of alleged ownership or origin, by moving it to land registered for the keeping of buffalo of the appropriate health status in terms of section 17 (3) (a) of the Act, or be dealt with as determined by the DAH. These stray buffaloes should be checked for the presence of any microchips and tested for FMD and CD.
- e) Any stray buffalo in the FMD free zone for which no person claims ownership, is regarded as potentially infected with FMD and must be isolated in an approved isolation facility and dealt with as determined by the DAH.
- f) Any stray buffalo in the FMD free zone for which a person claims ownership, must be captured without delay and must be isolated in an approved isolation facility and tested for FMD, CD, BTB and BR at the cost of the person claiming ownership. In cases of undue delay or unwillingness by the claimant to carry the cost, the buffalo must be dealt with as determined by the DAH. If ownership cannot be confirmed, the buffalo must be dealt with in terms of point e) above.
- g) Stray buffalo in the FMD free zone for which ownership has been confirmed, and for which the test results are negative, must be returned to land registered for the keeping of buffalo. If results are suspect or positive then refer to Point 10.

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Veterinary Procedural Notice: Buffalo Disease Risk Management

Approved by:



Dr Mpho Maja, Director of Animal Health

Page 31 of 41

2017 -02- 17

Date

- h) Stray buffalo in the FMD free zone, that were destroyed if so determined by the DAH, must be tested for FMD and CD. Serum samples and retropharyngeal lymph node samples must be collected by the SV and submitted to OVI TAD. DAFF will pay for the testing upon application by the SV.
- i) Stray buffalo may only be destroyed with permission from the DAH. This may be verbal but must be followed up in writing using the stray buffalo report form as provided in Addendum E.
- j) Detection, return, removal, destruction and/or disposal of stray buffalo originating from the FMD infected zones should be promoted and implemented as soon as possible after reports were received (regulation 20A of the Regulations);
- k) A person requested/authorised by the DAH in terms of section 3 (1) (b) of the Act and Regulation 4 to assist with stray buffalo control must have a licensed firearm and must be proficient in game hunting, as indicated on the request/acceptance form Addendum G.
- l) Stray buffalo control events must be recorded and it is recommended that the report form as available in Addendum D or a similar provincial document is utilised for this purpose. Such a report must be distributed to the DAH, PEO, relevant national and provincial SV's and relevant national and provincial nature conservation authorities.

## **10. CONTINGENCY PROTOCOLS AND ACTION PLANS IN RESPONSE TO SUSPECT AND POSITIVE TEST RESULTS FOR FMD, CD, BR OR BTB**

### **10.1 Introduction**

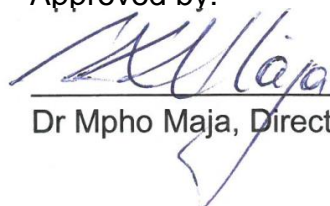
- a) FMD infected buffalo inside the FMD infected zones, as well as CD infected buffalo inside the CD controlled areas, as defined in the Animal Diseases Regulations, are excluded from the instructions below. Also excluded are those animals infected with BTB and BR on land where these diseases are regarded as endemic - for BTB according to the register and for BR those buffalo populations registered as FMD infected.
- b) No compensation will be payable by government for any buffalo that is destroyed for disease control purposes in terms of this VPN. Wherever the terms "destruction" or "destroyed" are used in the remainder of the document, this is intended as a recommendation to the responsible owner/manager of the animal. The use of these words does not imply the seizure and destruction in terms of Section 17 of the Act and thus Section 19 referring to compensation is not applicable. The owner/manager must understand clearly from the outset that no compensation is payable and that any destruction of animals will be at their cost and for the purpose of promoting the animal health status of their land. Cases in which the owner refuses to destroy animals that are clearly infected, without being

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Veterinary Procedural Notice: Buffalo Disease Risk Management

Approved by:

Page 32 of 41



Dr Mpho Maja, Director of Animal Health

2017 -02- 17

Date



paid compensation, must be referred to the DAH for a decision on how to proceed. In all such cases, the whole property and all susceptible animals must remain under full quarantine with no movement of animals onto, off or through the property until the issue had been resolved.

## 10.2 Reporting

- a) All incidences of buffalo testing positive for FMD, CD, BR or BTB outside the controlled areas, as mentioned above, irrespective of the reason for the testing, and irrespective of whether an infection has been confirmed or not, have to be reported to the DAH immediately. This includes occurrences that commenced previously, but that are ongoing and have not been resolved by eradicating the outbreak.
- b) The reports by the responsible SV must be sent via the office of the PEO to the DAH.
- c) The full report must at least include the following:
  - i. a copy of test results (and previous test results as applicable);
  - ii. a full account of the history of the herd and animals that tested positive and other susceptible species that will most likely play a role in this disease outbreak;
  - iii. details of any epidemiological investigation conducted and actions taken and the outcome thereof;
  - iv. copies of all relevant documentation, including correspondence with the owners, quarantine notices etc.
  - v. the action plans for further investigations and / or control and eradication measures for approval by the DAH. Such an action plan is required even in the case of suspected disease outbreaks.
- d) The initial report has to be followed by regular quarterly (three-monthly) follow-up reports, detailing any new occurrences and the progress made with regards to eradication of the disease. The required frequency for such follow-up reports may be reduced or increased by the DAH
- e) The neighbouring farms must be informed about the suspicion of an outbreak of disease. It is suggested that the owner / manager of the affected land be made responsible for this information and that the SV also informs all the owners / manager of the adjoining land

## 10.3 Quarantine and forward / backward tracing

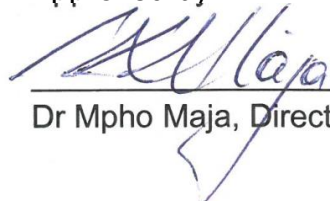
- a) As soon as the initial suspect or positive test results are received for any of the above diseases, the whole land must be put under full quarantine therefore

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Veterinary Procedural Notice: Buffalo Disease Risk Management

Approved by:

Page 33 of 41



Dr Mpho Maja, Director of Animal Health

2017 -02- 17

Date

prohibiting any further movement of buffalo or any other susceptible species onto, off or through the land registered for keeping buffalo.

- b) The quarantine notice must include the following:
- i. An instruction that any morbidity, mortality or planned capture / immobilization of any animal of a susceptible species on the land must be reported immediately to the responsible state veterinarian for a full investigation, irrespective of the purported reason for such morbidity, mortality or planned capture / immobilization.
  - ii. Reference to effective perimeter control in order to protect adjoining land
  - iii. Reference to Section 11 of the Animal Diseases Act with regard to informing the owner or managers of adjoining land and prospective buyers.
  - iv. Reference to an action plan which must be developed by the farmer / owner / manager of the buffalo herd in question in consultation with the private veterinarian and the local SV, who may amend the quarantine restrictions once approved. The elements of the action plan that have to be addressed must be specified in the quarantine notice, namely at least a surveillance plan as well as any of the following if applicable: meat safety plan, a movement control plan and a control and / or eradication plan.
  - v. An instruction to attempt to get a full register of all animals of all susceptible species as well as their origin.
- c) A full backward and forward tracing exercise must be conducted for all susceptible species, going back to the most likely date of first introduction of the infection.
- d) Appropriate action should be taken by the SVs at origin and destination as determined by the tracing exercises.

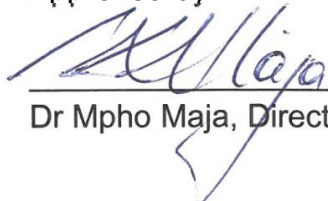
#### **10.4 Action plans for further investigations and control of the outbreak**

- a) An action plan for further investigation and control must be developed by the farmer / owner / manager of the buffalo herd in question, in consultation with the private veterinarian and the local SV.
- b) All action plans must start with the actions to confirm the outbreak of the relevant disease(s) and the extent thereof, unless already confirmed.
- c) The action plans must include;
  - i. Full details of any costs that may be incurred on behalf of DAFF. DAFF will not be responsible for any costs incurred prior to written approval of an action plan by the DAH. This includes all potential costs for any surveillance testing. The principle that applies is that buffalo owners and game owners are always responsible for all capture and immobilization and transport costs. The costs for laboratory testing will be covered by DAFF only subject to prior written

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Veterinary Procedural Notice: Buffalo Disease Risk Management

Approved by:



Dr Mpho Maja, Director of Animal Health

Page 34 of 41

2017 -02- 17

Date

- approval - based on a well-substantiated motivation by the PEO on why such testing is in the national interest.
- ii. All surveillance testing during and after any such disease outbreaks must include all susceptible species as appropriate for each disease. Furthermore, the provincial surveillance strategy must include all neighbouring land as well as all land identified during the forward and backward tracing.
  - iii. Possible control options such as containment, movement control, prevalence reduction, depopulation and / or eradication
- d) All action plans for further investigations to be conducted and / or the control and eradication measures if feasible, have to be recommended by the PEO for written approval by the DAH prior to being put into effect.
  - e) Once the action plans are approved, they must be enforced on the affected land by means of state veterinary orders in terms of the Animal Diseases Act that determine specific time lines for the actions to be taken. All non-compliances must be followed-up promptly with the appropriate law enforcement measures.
  - f) The approved action plan must be regularly evaluated and amended if indicated according to the disease situation following the same procedure as mentioned in point d above.

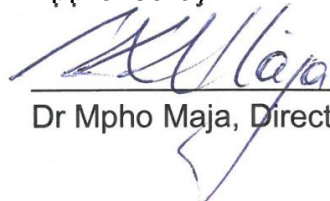
#### 10.4.1 Specific measures for FMD

- a) The presence of FMD in buffalo in the FMD infected zone threatens the legislated and internationally recognized FMD free zone status of South Africa and thus threatens the whole of the livestock industry.
- b) Action plans for dealing with infections of FMD outside of the FMD infected zones must be aimed at eradicating these infections in the shortest possible period. All buffalo on the land must be, without delay, dealt with as determined by the DAH. The default recommendation for such cases is that the infected buffalo and any contact animals be destroyed under veterinary supervision as soon as possible in the interest of the animal health status of the farm, the region and the country. In exceptional cases, with the written approval of the DAH, the buffalo may be translocated without delay to land registered for the keeping of FMD infected buffalo.
- c) Follow-up serological surveillance must be done in susceptible species on the affected land and adjacent land as well as those that may have been exposed in other ways, according to the action plan for the specific outbreak.

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Veterinary Procedural Notice: Buffalo Disease Risk Management

Approved by:



Dr Mpho Maja, Director of Animal Health

Page 35 of 41

2017 -02- 17

Date

- d) The affected land and adjacent land will remain under quarantine until such time as destruction / removal of all buffalo from the land has been confirmed by the SV and after a suitable waiting period of at least three months or otherwise according to the approved action plan.

#### 10.4.2 Specific measures for CD

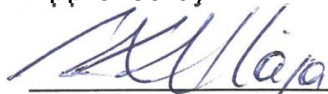
- a) The action plans for incidences or outbreaks of CD have to be aimed at eradicating these outbreaks in the shortest possible period by prompt destruction or removal of all buffalo on the land. This must be followed by the appropriate testing and re-testing (if necessary) of all buffalo on the adjacent land, as well as those that may have been exposed in other ways, should there be suspicion of any contact.
- b) The CD tests have to be regarded as herd tests; this implies that if one or more buffalo in a group or herd show a positive test reaction, the whole herd (i.e. all buffalo on the whole land) must be regarded as infected and / or potentially infected with the disease.
- c) As the disease is transmitted by ticks that can be carried by a variety of animal species and may infest pastures for up to 18 months, the whole land on which the infected herd resides, has to be quarantined as CD infected land for 2 years after the officially confirmed removal of all buffalo. The quarantine notice must indicate that movement of other animals from that land is subject to treatment with an effective and registered acaricide and indicate that no buffalo and cattle are allowed on the land for a period of two years.
- d) On infected land, there is currently no scientifically validated method for reliably detecting all the individual buffalo that are infected. Buffalo from a CD infected herd that test negative with the follow-up testing could still be carriers/infected and only showing a positive test reaction many years later. This is due to many factors in the tick vector and susceptible host animal (for example the number of the causative organisms in the blood stream of the host, the time since infection occurred, the mechanism of infection, levels of infection in the tick vector, transmissibility of the tick vector and tick load) that can lead to a false negative test result.
- e) Extensive experience from the terminated Disease Free Buffalo Breeding Projects have demonstrated that CD cannot be effectively controlled by a policy of removing/destroying positive reactors, isolating and re-testing of the remainder of the group/herd.

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Veterinary Procedural Notice: Buffalo Disease Risk Management

Approved by:

Page 36 of 41



Dr Mpho Maja, Director of Animal Health

2017 -02- 17

Date

- f) Climate change and movement of animals have led to a spread of brown ear tick occurrence in South Africa over time and some of the historically vector-free areas have become infested. There is no scientifically validated technique to prove that land has been “vector-free”, i.e. free of brown ear ticks or other ticks that may transmit the parasite, because the ticks may be on the land only transiently, may be introduced or have been introduced repeatedly although the land is in a historically vector-free area, may be living only in special micro-environments on the land that are suitable for their survival but neglected during a survey etc. It thus has to be assumed that natural transmission of the infection can happen or could have happened on any land on which CD infected buffalo are found. Culling of positive buffalo on presumed “vector-free” land can thus also not be considered an option for control and eradication of the disease.
- g) From the above it follows that all buffalo on the land must be, without delay, dealt with as determined by the DAH. The default recommendation for such cases is that the infected buffalo and any contact animals be destroyed under veterinary supervision as soon as possible in the interest of the animal health status of the farm and the region. Alternatively, with the written approval of the DAH, the buffalo may be translocated tick-free to land registered for the keeping of CD infected buffalo. The destruction or translocation must happen as soon as possible. Care should be taken to ensure that every buffalo is accounted for.

#### 10.4.3 Specific measures for BR

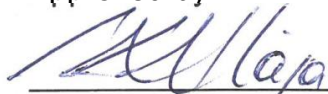
- a) The action plans for outbreaks of BR may be more flexible in cases where the DAH determines that eradication is not feasible but should at the very least include a comprehensive surveillance strategy for all susceptible species as well as a well-documented disease control or management plan. In such cases, the owners need to understand that no buffalo and / or any other susceptible species may be moved off the land.
- b) If BR is diagnosed, the infected buffalo herd and all other susceptible species on affected land must be placed under quarantine until eradicated. The quarantine includes all mammals unless specifically motivated and approved otherwise in the Action Plan.
- c) If the test results are deemed suspicious rather than positive, the following procedures are suggested:
- i. Suspicious meaning that buffalo only tested positive on RBT and not CFT.
  - ii. The suspect buffalo must be isolated from the rest of herd but the whole herd will remain under quarantine

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Veterinary Procedural Notice: Buffalo Disease Risk Management

Approved by:

Page 37 of 41

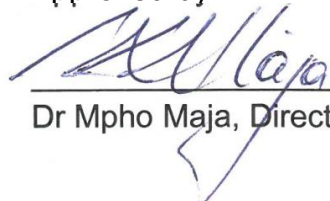


Dr Mpho Maja, Director of Animal Health

2017 -02- 17

Date

- iii. The suspect buffalo must remain in isolation for at least 2 months after which it must be tested with both the RBT and CFT
  - iv. All buffalo in the herd of origin must also be tested as soon as possible. Should this be impractical, the action plan should suggest a reasonable number of high risk buffalo from the herd of origin
  - v. In the case of the suspect buffalo being a pregnant heifer, the buffalo must only be tested at least eight weeks after calving in isolation.
- d) If the test results are clearly positive (as determined by the SV and guided by the interpretation as in Addendum B), the following procedures apply:
- i. All positive animals must be isolated and dealt with as determined by the DAH. It is recommended that the infected buffalo and any contact animals can either be destroyed under veterinary supervision or, with the written approval of the DAH, it is permissible for infected buffalo to be removed to a hunting camp on the same land if this is part of the motivated and approved action plan. They may also be removed to land registered for buffalo in the FMD protection zone or CD controlled areas where there is already a BR infected buffalo population.
  - ii. In case of death or destruction, comprehensive necropsies are required and appropriate samples (male and female reproductive organs, uterine discharges, aborted foetuses, udder secretions and retro-pharyngeal, pre-scapular, ileac, supra-mammary and inguinal lymph nodes) must be collected from the carcasses of all positive BR reactors and sent to an approved laboratory for bacterial culturing (plain or selective media) as an additional tool in the diagnosis and confirmation of BR in the herd.
  - iii. Negative culture results do not negate positive serological results, because of the low sensitivity of culture.
  - iv. It is advisable that other susceptible species are included in the sero-surveillance in accordance with other VPNs where applicable
- e) In the case of eradication or the owner wanting to move live buffalo, the testing protocol has to be part of the original action plan and all test results must be included in the updates to be provided to the DAH at regular intervals.
- i. Considering the gestation period in buffalo, there must be three consecutive negative tests at a minimum of three monthly intervals, starting at least three months after the removal of the last positive buffalo, and a fourth negative test at least six months later.



- ii. As an alternative to the four tests, two negative tests 15 months apart at the risk of the owner may be performed, starting at least three months after the removal of the last positive buffalo.
  - iii. Only after all buffalo have had negative tests as above can it be considered to propose to the DAH that the herd status may revert to negative.
- f) Heifer calves from BR positive dams may be latently infected which may only be detected after they have calved. Since heifers only calve on average at 3.5 years,
  - i. Heifer calves should preferably be culled or,
  - ii. Heifer calves must be tested for BR after their first calf is born. (This test must be done at least eight weeks after calving) or,
  - iii. The whole herd must undergo another test at least four years after the last test as in e above. (The land must remain under quarantine for this period)
- g) It is recommended that other susceptible game species are included in the testing protocols. In the case of eradication the action plan has to propose a representative protocol for other susceptible species. Protocols similar to point (e) above may be proposed in the action plan for other susceptible species in preparation of movement off the land.
- h) Buffalo and cattle on adjacent land must also be tested.

#### **10.4.4 Specific measures for BTB**

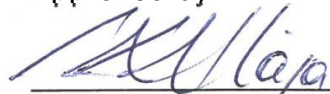
- a) The action plans for outbreaks of BTB may be more flexible in cases where the DAH determines that eradication is not feasible but should at the very least include a comprehensive surveillance strategy as well as a well-documented disease control or management plan (including effective perimeter control). In such cases, the owners need to understand that no buffalo and / or any other susceptible species may be moved off the land.
- b) If BTB infection is either suspected or confirmed, then the buffalo herd and all other susceptible species on that land, must be placed under quarantine. Refer to Addendum B for interpretation of the CITT. The quarantine includes all mammals unless specifically motivated and approved otherwise in the action plan.
- c) If the test results are deemed suspicious rather than positive, the following procedures are suggested:
  - i. The suspect buffalo must be isolated from the rest of herd but the whole herd will remain under quarantine.
  - ii. The buffalo must remain in isolation for 3 months after which it must be tested with the CITT. The IFNg test may also be applied as an ancillary diagnostic test

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Veterinary Procedural Notice: Buffalo Disease Risk Management

Approved by:

Page 39 of 41

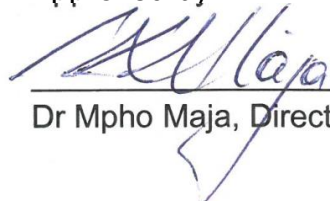


Dr Mpho Maja, Director of Animal Health

2017 -02- 17

Date

- iii. All buffalo in the herd of origin must also be tested as soon as possible. Should this be impractical, the action plan must suggest a reasonable number of high risk buffalo from the herd of origin.
  - iv. Should the second CITT deliver a complete negative result, then the first test can be regarded as a false positive and the quarantine can be lifted.
- d) If the test results are clearly positive (as determined by the SV and guided by the interpretation as in Addendum B), and in the case of eradication or the owner wanting to move live buffalo the following procedures are suggested:
- i. All positive animals must be isolated. It is recommended that they are destroyed under veterinary supervision. It is permissible for infected buffalo to be removed to a hunting camp on the same land if this is part of the motivated and approved Action Plan or to land registered for buffalo in the FMD protection zone or CD controlled areas where there is already a BTB infected buffalo population.
  - ii. The carcasses of all positive BTB reactors must be subject to a post mortem examination by a veterinarian. Appropriate samples (as specified in Addendum B) must be collected from these carcasses and sent to an approved laboratory for bacterial culturing as an additional tool in the diagnosis and confirmation of BTB in the herd.
  - iii. A negative culture does not negate a positive CITT. However in the case of comprehensive sampling and consistently negative culture results combined with a low percentage of positive CITT results, the action plan report may suggest lifting of the quarantine subject to approval of the DAH. It is suggested that the whole herd be retested after 3 to 6 months prior to the quarantine be lifted
- e) If BTB was confirmed through the isolation of the organism:
- i. all the buffalo on the land must be dealt with as determined by the DAH and either:
    - Recommendation made for them to be destroyed; or
    - be removed to land registered for buffalo in the FMD protection zone or CD controlled areas where there is already an infected buffalo population; or
    - undergo five consecutive negative CITTs with at least three month intervals since the last positive animal(s) was/were removed. The land must remain under quarantine for this period. Only then can it be considered to propose to the DAH that the herd status may revert to negative. The testing protocol has to be part of the original action plan and all test results must be included in the updates to be provided to the DAH at regular intervals.





- ii. Buffalo and cattle on adjacent land must also be tested.
- iii. It is advisable that other susceptible species are tested in accordance with other VPNs where applicable. In the case of eradication, the action plan has to propose a representative protocol for other susceptible species. Protocols similar to point (d) above may be proposed in the action plan for other susceptible species in preparation of movement off the land.

## 11. LIST OF ADDENDUMS

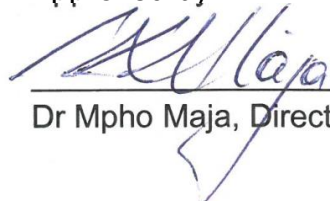
- Addendum A:** Application for the registration of land for keeping buffalo (2pg)
- Addendum B:** Guidelines for the collection of samples for disease testing and the interpretation of diagnostic test results (3pg)
- Addendum C:** Buffalo movement application form (3pg)
- Addendum D:** Stray buffalo control report form (1pg)
- Addendum E:** Diagram of buffalo movement (2pg)
- Addendum F:** Request/acceptance form to be authorised by DAH (for assistance in stray buffalo control)
- Addendum G:** Order in terms of Animal Diseases Act, No 35 of 1984 (1pg)

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Veterinary Procedural Notice: Buffalo Disease Risk Management

Approved by:

Page 41 of 41



Dr Mpho Maja, Director of Animal Health

2017 -02- 17

Date