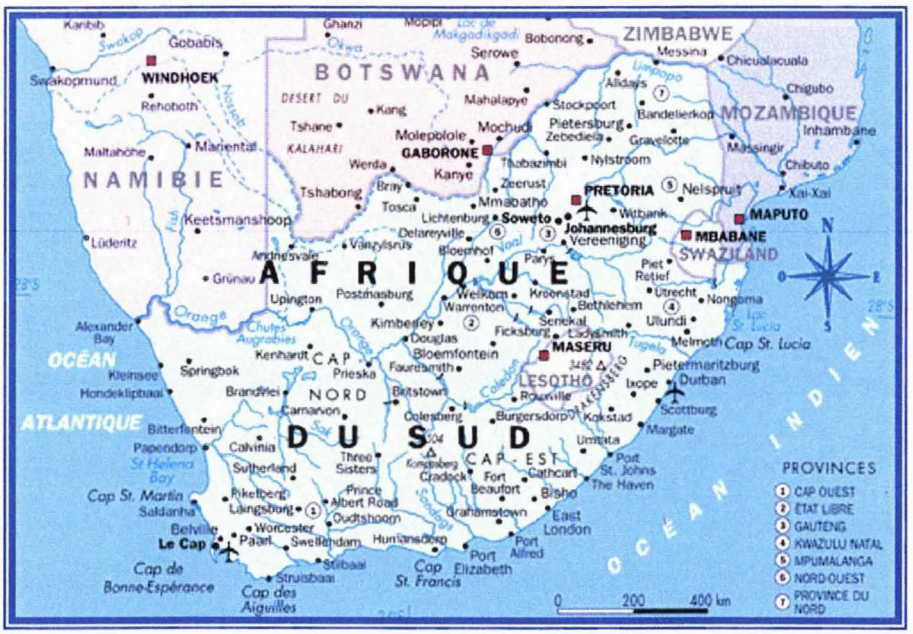
République d'Afrique
du Sud

Ministère des Affaires
Etrangères
Coopération et francophonie
20, rue Monsieur
75700 PARIS

MONOGRAPHIE

AFRIQUE DU SUD



Mission du 1er au 4 juillet 2001

Jean-Jacques TULASNE

Septembre 2001

CIRAD-EMVT
Département Elevage et Médecine
Vétérinaire du CIRAD
Campus International de Baillarguet
TA 30 / B
34398 Montpellier Cedex 5
FRANCE

SOMMAIRE

ANNEXES

I – COOPÉRATION FRANCE/AFRIQUE DU SUD DANS LE DOMAINE AGRICOLE : PRÉSENTATION

Au cours de la présente mission, Mr Pierre COLOMBIER, Conseiller de coopération du SCAC de Prétoria, a exposé au consultant **les deux axes principaux** complémentaires de la coopération bilatérale France-Afrique du Sud :

- *Appui au développement de la petite agriculture familiale* :
  - Il s'agit dans le cadre d'un développement intégré, d'un **FSP** (avec l'appui du CIRAD et de l'Union Européenne),
  - **3 composantes** :
    - terrain : périmètres irrigués, coton, canne à sucre,
    - restructuration d'un Master « Petite agriculture »,
    - formation, vulgarisation.

- *Agriculture commerciale* :
  - les mots-clés sont : « **normes** », « **traçabilité** » dans le cadre de l'accord de libre échange Union Européenne/Afrique du Sud,
  - l'Afrique du Sud a, en urgence, **une nécessité d'exporter,**
  - ce pays exporte actuellement des fleurs, des fruits, des autruches, etc…
  - un séminaire sur les productions animales est prévu à cet effet avant fin 2001,
  - l'Université de Paris I (Professeur Yves DAUDET) **propose la création d'un centre d'études européennes**, en partenariat entre des Universités sud-africaines et européennes, dans le cadre de l'accord de libre échange Europe/Afrique du Sud. Cet institut, à vocation régionale (COI-SADC) pourrait, en priorité, aborder le problème **d'harmonisation des réglementations** (cf rapport du Prof. Y. DAUDET en **Annexe 1**).

D'une façon générale, les autorités sud-africaines expriment **une forte demande dans le domaine de la formation**, pour des post-docs par exemple.

II – ONDERSTEPOORT VETERINARY INSTITUTE (OVI) : PRÉSENTATION ET OFFRE DE COLLABORATION AVEC LE PROJET OCÉAN INDIEN SUR LA SANTÉ ANIMALE

21. Introduction

Le Dr Steven T. CORNELIUS, Directeur de l'OVI et cinq de ses collaborateurs, se sont entretenus longuement avec le consultant, au siège de l'OVI à Onderstepoort, au cours d'une réunion de travail, le 3/07/01 au matin.

2.2. Présentation de l'OVI

Le Directeur de l'OVI a, tout d'abord, présenté brièvement les missions, les principaux programmes de recherche et projets en cours, ainsi que les prestations de service (diagnostic, transfert de technologie et formation) offerts par cet institut (cf brochures de présentation en **Annexe 2**).

2.3. Situation actuelle de la coopération scientifique OVI/CIRAD-EMVT

Les participants ont ensuite évoqué les thèmes de recherche en cours ou à l'étude entre l'OVI et le CIRAD-EMVT. Cette coopération scientifique entre les deux organismes est ancienne, importante et diversifiée :

*** Cowdriose** :

- depuis 1982, collaboration avec le laboratoire CIRAD-EMVT de Guadeloupe (développement de vaccins et d'outils de diagnostic),
- un projet INCO (UE en cours) : développement de vaccins (EMVT : leader, OVI : partenaire),
- un projet PROCORDEL en cours : essais de vaccins,
- séquençage du génome de Cowdria : projet en cours d'élaboration (financements Afrique du Sud).

*** Péripneumonie contagieuse bovine** :

- un projet INCO (UE) en cours : PPCB et immunité cellulaire (EMVT : leader, OVI : partenaire),
- séquençage du génome de Mycoplasma myc.myc./sc : projet en cours d'élaboration (financements Afrique du Sud).

*** Deux projets à l'étude** :

- proposition de participation de l'OVI (laboratoire de diagnostic régional) au **projet Océan Indien sur la santé animale** : objet de la présente mission,
- **projet d'appui à des laboratoires de recherche et de diagnostic africains** : Afrique du Sud (OVI), Cameroun (LANAVET), Ethiopie (NVI), Mali (LCV) : FSP à l'étude (préparation de la FPC en cours).

*** Peste porcine africaine, fièvre catarrhale du mouton** :

- collaborations ponctuelles en cours de formalisation (différents projets à l'étude).

*** L'OVI rappelle enfin qu'il est fortement demandeur** :

- *d'échanges de chercheurs* :
  - accueil en formation de chercheurs africains par la France (CIRAD-EMVT),
  - accueil de longue durée de chercheurs du CIRAD-EMVT à l'OVI,

- *d'un appui à la constitution*, à l'OVI, d'un **groupe d'épidémiologie animale**, sur le modèle de l'EMVT : épidémiosurveillance, épidémiologie moléculaire, traitement des données, SIG, économie, modélisation…

2.4. Présentation du projet santé animale Océan Indien

Le consultant a ensuite exposé aux participants de la réunion le but de sa visite selon le plan suivant :

- **présentation du projet de réseau épidémiosurveillance** pour les pays membres de la communauté de l'Océan Indien (COI), sur financement de la coopération française (dans un premier temps) : objectifs généraux,

- **rappel de la situation zoosanitaire** pour les Etats-membres de la COI , le Mozambique et l'Afrique du Sud (déclarations 2000-2001 à l'OIE),

- **illustrations du risque permanent d'introduction d'une maladie exotique dans un pays indemne de cette maladie** :
  - peste porcine africaine : présente à Madagascar en provenance du Mozambique,
  - fièvre aphteuse : présente en Afrique australe, excepté le Mozambique. Madagascar est actuellement indemne,
  - PPCB : présente dans certains pays d'Afrique australe, à l'exception du Mozambique et de l'Afrique du Sud. Madagascar est actuellement indemne.
  - le charbon symptomatique : s'est introduit aux Comores en 1970 puis en 1996 à partir de Madagascar à la faveur de flux commerciaux « non sécurisés ».

  Ces quelques exemples montrent l'intérêt de la mise en place d'une « protection croisée », c'est-à-dire d'un réseau d'échanges d'informations et d'alerte au profit des Etats-membres de la COI, en liaison étroite avec ceux de la SADC.

- **le consultant sollicite enfin, la participation de l'OVI, à ce projet pour** :
  - **l'appui au diagnostic de laboratoire** des maladies de la liste A de l'OIE en priorité,
  - **la fourniture de vaccins** « ciblés » en cas de foyers (fièvre aphteuse en particulier),
  - **la formation** de cadres et techniciens de laboratoire et de terrain,
  - **la mise en place d'une collaboration permanente** avec l'Institut Pasteur de Madagascar (peste porcine africaine, West Nile, fièvre de la vallée du Rift, Crimée-Congo…) et des instituts français (AFSSA, CIRAD-EMVT).

2.5. Offre de l'OVI pour une collaboration avec le projet santé animale Océan Indien

En réponse à cet exposé et à cette requête, le Directeur de l'OVI manifeste clairement **l'intérêt scientifique de l'OVI pour collaborer à ce projet et donne son accord de principe** pour une participation effective de son institut.

Le Directeur expose ensuite **les compétences de l'OVI pour le diagnostic de laboratoire des maladies animales**. L'offre de l'OVI est la suivante :

- **fièvre aphteuse :**
  - sérologie : toutes techniques,
  - séquençage des souches,
  - production de vaccins « à la carte ».

  L'**OIED** (Onderstepoort Institute for Exotic Diseases), en collaboration avec **INTERVET** peut produire, **à la demande du terrain**, des vaccins mono ou polyvalents selon le protocole suivant :

  - séquençage des souches isolées dans des foyers,
  - fabrication et mise à disposition d'un vaccin correspondant aux souches identifiées,
  - suivi des foyers : épidémiologie moléculaire (*tracing*),
  - l'OIED produit en routine SAT1, SAT2, SAT3 et à la demande A,0,C.
  - NB : l'OIED, qui fait partie de l'OVI, dispose d'un **laboratoire de haute sécurité** et se consacre principalement au diagnostic/recherche sur la fièvre aphteuse et la peste porcine africaine, ainsi qu'à la production de vaccins anti-aphteux (cf présentation de l'OIED en **Annexe 2**).
  - l'OVI est :
    - ✓ **centre collaborateur fièvre aphteuse pour la FAO**,
    - ✓ le laboratoire de référence régional de l'OIE pour la fièvre aphteuse est le BVI au Bostwana.

- **peste porcine africaine** :
  - toutes capacités en diagnostic disponibles : sérosurveillance, PCR, identification et séquençage de virus
  - l'OVI est :
    - ✓ **centre collaborateur peste porcine africaine pour la FAO**,
    - ✓ **laboratoire régional de référence pour l'OIE.**

- **peste porcine classique** :
  - sérosurveillance en Afrique du Sud dans les porcheries industrielles.

- **péripneumonie contagieuse bovine** :
  - toutes capacités de diagnostics : sérologie (CFT, ELISA), PCR.

- **tuberculose** :
  - toutes capacités de diagnostics : sérologie (interféron gamma), PCR, « tracing » épidémiologique.

- **l'OVI est de plus laboratoire de référence OIE pour :**
  - **la peste équine,**
  - **la fièvre catarrhale du mouton,**
  - **la dermatose modulaire contagieuse,**
  - **la fièvre de la vallée du Rift,**
  - **la rage.**

- **l'OVI possède également, traditionnellement, des compétences reconnues, pour le diagnostic de :**
  - Clostridium perfringens (différentes types) : entérotoxémies, gangrènes,
  - Clostridium chauvoei (charbon symptomatique).

- enfin, **l'OVI sollicite l'AFSSA** pour la fièvre aphteuse et la peste porcine africaine (contrôles croisés).

- En conclusion de cette réunion extrêmement positive, **le Directeur de l'OVI renouvelle son offre de coopération et d'appui au projet COI** dans le cadre des domaines de compétences en recherche/diagnostic de son institut.

- En fin de réunion, le Directeur de l'OVI et ses collaborateurs remettent au consultant les documents suivants :

  - Vaccins : Onderstepoort Biological Products (OBP) :
    - ✓ liste et prix des vaccins produits par cet institut,
    - ✓ l'OBP est un laboratoire producteur de vaccin privatisé, après séparation avec l'OVI qui n'a conservé que la production de vaccins contre la fièvre aphteuse.

  - Diagnostic :
    - ✓ OVI : Diagnostic Price List 2000-2001 : offre en formation : bactériologie, virologie, parasitologie, entomologie, toxicologie,
    - ✓ Brochures sur :
      - Animal Health Technician's Course Programme (octobre 2000)
      - African Epizootic Diseases Course Programme (octobre 2000)
      - supports audiovisuels : diapositives et posters, liste de prix,
      - monographies sur des maladies animales (cf documents en **Annexe 3**).

III – ENTRETIENS AVEC LE DIRECTEUR DES SERVICES VÉTÉRINAIRES D'AFRIQUE DU SUD

Le Dr G. BRÜCKNER expose brièvement la situation zoo-sanitaire en Afrique du Sud :

- cheptel d'Afrique du Sud (OIE 2000) :
  - bovins : 10 350 000
  - ovins : 21 500 000
  - caprins : 6 280 000
  - équins : 425 000
  - porcins : 1 080 000.

- liste A de l'OIE : maladies déclarées en 2000-2001
  - **fièvre aphteuse** (cf rapport détaillé en **Annexe 4** pour l'année 2000),
  - **dermatose nodulaire contagieuse,**
  - **fièvre catarrhale du mouton,**
  - **peste équine,**
  - **maladie de Newcastle.**

- cf : rapport de l'Afrique du Sud à l'OIE pour l'année 2000 (**Annexe 4**).

- Le Dr BRÜCKNER exprime toutes **ses craintes en ce qui concerne la PPCB** par exemple, qui gagne du terrain en Afrique australe (Zambie, mars 2000) avec également un risque permanent de diffusion à partir du Nord de la Namibie et de l'Angola, par exemple.

- Il expose, d'autre part, **le risque de diffusion de la fièvre aphteuse, de la tuberculose et de la theiléríose** en relation avec **le projet d'extension régionale du Kruger Park**, actuellement limité à l'Afrique du Sud et qui devrait s'étendre au Mozambique et au Zimbabwe.

- La Direction des services vétérinaires d'Afrique du Sud met actuellement en place deux structures complémentaires importantes pour la protection zoosanitaire du territoire national :

  - **l'ADISSA** : Animal Diseases Information System for South Africa qui est un réseau électronique d'informations sanitaires. Une augmentation des postes d'observation vétérinaire est prévue dans ces provinces,

  - **le LISSA** : Laboratory Information System for South Africa qui est un réseau d'échange entre l'OVI, deux laboratoires régionaux et une soixantaine de petits laboratoires de terrain.

- **Le Dr BRÜCKNER déclare être intéressé pour participer au réseau COI** pour les raisons suivantes :
  - échange d'informations,
  - système d'alerte,
  - analyse de risque.

- **Il propose également de jouer le rôle d'interface pour l'épidémiosurveillance des maladies animales entre les pays de la SADC et ceux de la COI**. Cette proposition est particulièrement intéressante.

IV – SYNTHÈSE DES PROPOSITIONS DE L'AFRIQUE DU SUD POUR UNE COLLABORATION AVEC LE PROJET C.O.I

Les structures visitées ont manifesté **leur accord pour collaborer** avec le projet proposé :

- **Pour l'OVI :**
  - **le diagnostic spécifique** d'un certain nombre de maladies pour lesquelles sa compétence est reconnue au **niveau international** (FAO-OIE). Ces maladies

sont en premier lieu : la fièvre aphteuse, la peste porcine africaine, la PPCB, la tuberculose, mais aussi la peste équine, la fièvre catarrhale du mouton, la dermatose modulaire contagieuse, la fièvre de la vallée du Rift et la rage,

- **la formation** des agents des services vétérinaires et des techniciens de laboratoires.

- **L'OVI et l'OBP :**
  - pour la fourniture de vaccins « **ciblés** » contre la **fièvre aphteuse** et l'ensemble des **maladies bactériennes et virales** sévissant en région SADC et COI.

- **Les services vétérinaires d'Afrique du Sud** :
  - pour **l'échange d'informations zoosanitaires**, la participation aux **réseaux d'alerte** et à des **analyses de risques** (fièvre aphteuse, peste porcine africaine, PPCB…) et jouer le rôle **d'interface entre les pays de la SADC et de la COI.**

V – REMERCIEMENTS

Le consultant tient à remercier très vivement :

- le Dr S.T. CORNELIUS, Directeur de l'OVI et ses collaborateurs,

- ainsi que le Dr G. BRÜCKNER, Directeur des Services vétérinaires d'Afrique du Sud pour leur disponibilité et leur collaboration,

- Mr Pierre COLOMBIER, Conseiller de coopération du SCAC de Prétoria pour son accueil et ses conseils,

- Messieurs J-Pierre GAY (SCAC Prétoria) et J-Paul LOYER (CIRAD) pour leur efficacité dans l'organisation de cette mission et leur amitié.

ANNEXES

ANNEXE 1

Rapport de mission en Afrique du Sud
Du Professeur Yves DAUDET
(Université Paris I)

RAPPORT DE MISSION AUPRES D'UNIVERSITES SUD-AFRICAINES

par M. Yves DAUDET
Professeur à l'Université Paris I (Panthéon-Sorbonne)
Vice-président de l'Université

4-9 juin 2001

Ma mission a consisté à visiter des Universités d'Afrique du Sud en vue d'explorer les possibilités de liens avec l'Université Paris I (dont j'assure la gestion des relations internationales en ma qualité de Vice-président) qui est intéressée à les développer, plusieurs professeurs s'étant déjà rendu en Afrique du Sud et le Président MANDELA ayant été fait Docteur Honoris causa de Paris I.

Cette mission a été préparée par le professeur Xavier PHILIPPE, professeur au titre de la coopération à la Faculté de droit de l'Université Western Cape à Cape Town et chargé de suivre les dossiers de la coopération universitaire auprès du service culturel de l'Ambassade de France. Remarquablement organisée par M. PHILIPPE, cette mission m'a permis en un minimum de temps de rencontrer les principaux responsables (Doyens ou vice-doyens) de quatre grandes universités d'Afrique du Sud, à savoir :

- University of the WITWATERSRAND à Johannesburg
- University of PRETORIA
- University of CAPE TOWN
- University of the WESTERN CAPE à Cape Town.

Dans chacune de ces universités, l'accueil a été uniformément chaleureux, emprunt d'une grande hospitalité (assortie d'un repas, parfois avec plusieurs professeurs) et j'en ai retiré l'impression que les universités sud africaines qui entretiennent peu de relations avec les universités françaises – pour des raisons essentiellement linguistiques – étaient fort désireuses d'en nouer. A cet égard, les quatre universités visitées, bien qu'assez différentes les unes de autres m'ont paru être également intéressées et intéressantes.

La principale question est donc de savoir quel contenu donner à une coopération souhaitée de part et d'autre. Elle peut débuter par une forme simple et classique d'échange d'étudiants et de professeurs.

- L'université Paris I est disposée à accueillir un (éventuellement deux) professeurs sud africains de telle ou telle des universités visitées en qualité de professeur invité (traitement d'un mois de professeur de 1ère classe à la charge de Paris I, voyage et séjour à la charge de l'invité). La question de la langue ne se pose pas car l'université Paris I ne s'oppose pas et parfois souhaite que des enseignements de DEA soient dispensés en anglais. De 12 à 15 heures de cours auraient ainsi ^à être dispensées dans ces conditions.
- S'agissant des étudiants, quelques uns (de 1 à 4) pourraient être accueillis dans des formations de troisième cycle mais à la condition expresse qu'ils aient une excellente

connaissance du français faute de quoi, le niveau des cours étant élevé, ils perdraient leur temps.

- En sens inverse, des professeurs de Paris I pourraient très certainement se rendre en, Afrique du Sud pour 1 à 2 semaines pour donner un cours (en anglais si nécessaire) et il n'est pas exclu du tout que des doctorants français souhaitent passer quelques mois dans une Université sud africaine dans le cadre de leurs recherches doctorales>. A signaler ici l'intéressant programme de Pretoria university au profit de jeunes docteurs susceptibles d'intéresser des candidats docteurs en attente d'un poste de Maître de Conférences ou du concours d'agrégation.
- Il reste que ces programmes de coopération classique supposent qu'existent des moyens de coopération de la part des services culturels français pour permettre le financement de bourses d'étudiants sud africains ou des voyages de doctorants ou jeunes chercheurs ainsi que les missions des professeurs français. L'Université Paris I, pour sa part, dès lors qu'un accord de coopération serait conclu avec une ou plusieurs universités sud africaines pourrait présenter des candidats sud africains de très bon niveau à des bourses Eiffel.

Si cette première forme de coopération donne satisfaction, il n'est pas à exclure, dans un deuxième temps d'envisager la mise sur pied d'un diplôme commun dont Paris I a une importante expérience avec plusieurs universités étrangères.

Enfin, en, prenant en considération l'accord de libre échange récemment conclu entre l'Afrique du Sud et l'Union européenne, il serait certainement souhaitable de mettre en place dans l'une des Universités (ou les universités regroupées ?) sud africaines un **Centre d'études européennes** en partenariat avec d'autres Universités européennes. Ce centre qui pourrait organiser des enseignements (un certificat d'études européennes pourrait être créé sous la forme d'un diplôme d'université. Une partie se ferait en Afrique du Sud et une autre dans les universités européennes avec un système de bourses de mobilité. Si le service culturel de l'Ambassade de France trouvait dans ce projet un intérêt suffisant pour le soutenir financièrement en attendant d'éventuels relais communautaires, cette question pourrait faire l'objet d'un examen plus approfondi avec des partenaires possibles et donner lieu à une visite en France de responsables universitaires sud africains intéressés.

Ces projets seront suivis, du côté de Paris I, par le professeur Nicolas MAZIAU, ancien docteur de Paris I avec une thèse sur l'Afrique du sud, devenu professeur à l'Université de Nancy II mais qui a conservé beaucoup de lien avec Paris I et qui serait éventuellement susceptible de développer un partenariat avec son Université dont on connaît le dynamisme et les compétences sur les questions européennes.

Je tiens, en terminant ce rapport, à souligner l'intérêt manifesté par le Conseiller culturel M. Pierre COLOMBIER et l'attaché scientifique M. Patrick LE FORT pour cette mission et ces projets. Madame Anne d'ALBIS, en sa qualité de représentante du CNRS, a bien voulu me recevoir à un déjeuner organisé à la résidence et j'ai pu mesurer, en cette très agréable occasion, à quel point elle aussi était attentive à ce volet de notre action en Afrique du Sud.

ANNEXE 2

PRÉSENTATION DE :

- l'ARC-OVI,
- l'ARC-OIED

- Development of strategies to control or prevent intoxication by plants
- Environmental toxicological studies

Veterinary public health
- Studies on udder health and mastitis in cows
- Epidemiology and control of cysticercosis
- Studies on food and feed safety, including bacterial safety and residue levels

Bacterial vaccine development
- Typing of *Clostridium* and *Salmonella* isolates
- Development of improved vaccines against various bacterial diseases
- Improvement of methods for the evaluation of vaccines

Wildlife diseases
- Ostrich diseases
- Crocodile diseases
- Translocation of wildlife in southern Africa

Socio-economic impact of animal diseases
- Composition and distribution of animal populations
- Impact analysis of animal diseases, especially on small-scale farming

Diagnostic Services

A comprehensive diagnostic service, which is integrated into the research structure, is provided to farmers, veterinarians and the provincial diagnostic laboratories. Because the expertise of highly specialized researchers is available, the Diagnostic Programme of the OVI functions as a reference centre for other laboratories in addition to its activities in respect to primary diagnosis. The development, standardization and production of diagnostic tests and reagents therefore form part of its service. Internationally the institute is recognised as a world-reference laboratory of the OIE (Office International des Epizooties) for bluetongue, African horsesickness, Rift Valley fever, lumpy skin disease and rabies.

Technology Transfer

The OVI has been responsible for the publication of the *Onderstepoort Journal of Veterinary Research* for the past 60 years. This publication is recognized as a leading journal in veterinary science and has an international reputation.

The results of the institute's research are communicated directly to extension officers and livestock owners by means of the printed and electronic media, workshops, farmers days etc., particulalry with a view to assisting emerging small-scale farmers. The institute, as the Regional Collaborating Centre for Africa of the OIE, has the responsibility to facilitate technology transfer to other African countries by means of workshops and training programmes.

For further information, contact:
The Director
Onderstepoort Veterinary Institute
Private Bag X5
ONDERSTEPOORT, 0110
REPUBLIC OF SOUTH AFRICA
Tel: (012) 529 9111, Int: 27 12 529 9111
Fax: (012) 565 6573, Int: 27 12 565 6573

ARC-Onderstepoort Veterinary Institute

ARC • LNR

An Institute of the Agricultural Research Council

ARC-Onderstepoort Veterinary Institute

Mission

To increase the productivity and profitability of the animal industries in South Africa by promoting animal health while simultaneously enhancing public health and protecting the environment. In order to achieve this mission the Onderstepoort Veterinary Institute of the ARC (OVI) conducts research, renders diagnostic and other services to a variety of clients and develops vaccines and other biological products for commercial production.

Research Programmes

The OVI is divided into 12 divisions in accordance whith scientific disciplines:

Pathology
Bacteriology
Virology
Helminthology
Toxicology
Molecular Technology Development
Molecular Biology
Biochemistry
Reproductive Diseases
Protozoology
Entomology
Immunology

In order to promote interdisciplinary collaboration and to fulfil the needs of our clients, research management is based on a system of programmes and projects. Contract research is accommodated within this framework.

MAJOR PROGRAMMES AND PROJECTS

New viral vaccines and diagnostics

- Development of recombinant vaccines for bluetongue and African horsesickness
- A study of the molecular biology of the orbiviruses
- Development of diagnostic reagents and assays for orbiviruses

Pox-vectored vaccines

- The use of *Vaccinia* virus as vector for recombinant vaccines
- The development of lumpy skin virus as vector of recombinant animal vaccines

Insect-borne viral diseases

- The distribution, abundance and seasonality of various *Culicoides* species in south Africa
- Competence of *Culicoides* species as vectors of bluetongue and African horsesickness

Animal aids-like viruses

- Development of diagnostic assays for ovine maedi-visna virus
- Field surveys of the incidence of maedi-visna in South Africa
- Development of strategies for the eradication of maedi-visna and jaagsiekte.

Rabies

- The development of strategies for the eradication of rabies in peri-urban canine populations using oral bait vaccines
- A study of the epidemiology of rabies in dogs and in wild animal carriers
- Typing of rabies virus isolates using monoclonal antibodies

Ticks and tick-borne diseases

- Biosystematics and biology of ticks that transmit blood parasites
- Studies aimed at the development of vaccines against ticks
- Epidemiology, diagnosis and control of tick-borne diseases

Internal parasites

- The development of integrated control strategies to combat increased resistance of internal parasites to available anthelmintics
- Studies aimed at the development of vaccines against internal parasites

Insects and mites of veterinary significance

- A study of the blackfly (*Simulium*) problem along the Gariep River and its biological control by means of *Bacillus thuringiensis*
- A study of the incidence of various tsetse flies in Kwa-Zulu-Natal, that were responsible for recent outbreaks of nagana
- Biosystematics of *Culicoides* and other insects as well as mites of veterinary importance

Molecular immunology

- Epitope mapping of antigens
- Mechanisms of protective immunity to heartwater

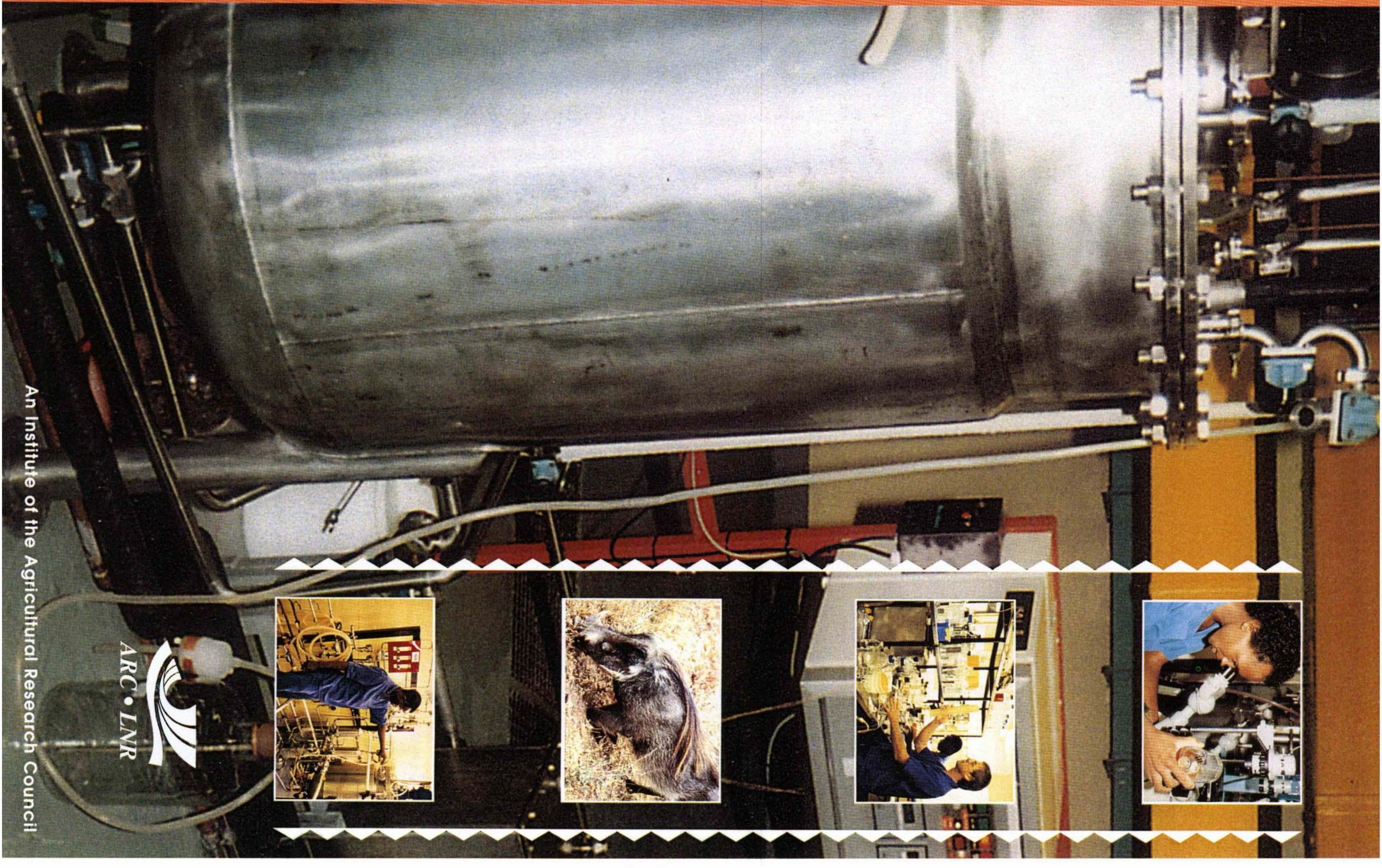
Heartwater

- Studies aimed at the development of an improved vaccine against heartwater (*Cowdriosis*)
- Development of molecular probes for the identification and diagnosis of *Cowdria ruminantium*
- Molecular-genetic analysis of *Cowdria*

Feed-related poisoning of animals

- Chemical identification of plant and fungal toxins that are responsible for animal deaths

ARC-Onderstepoort Institute for Exotic Diseases



ARC • LNR

An Institute of the Agricultural Research Council

ARC-Onderst

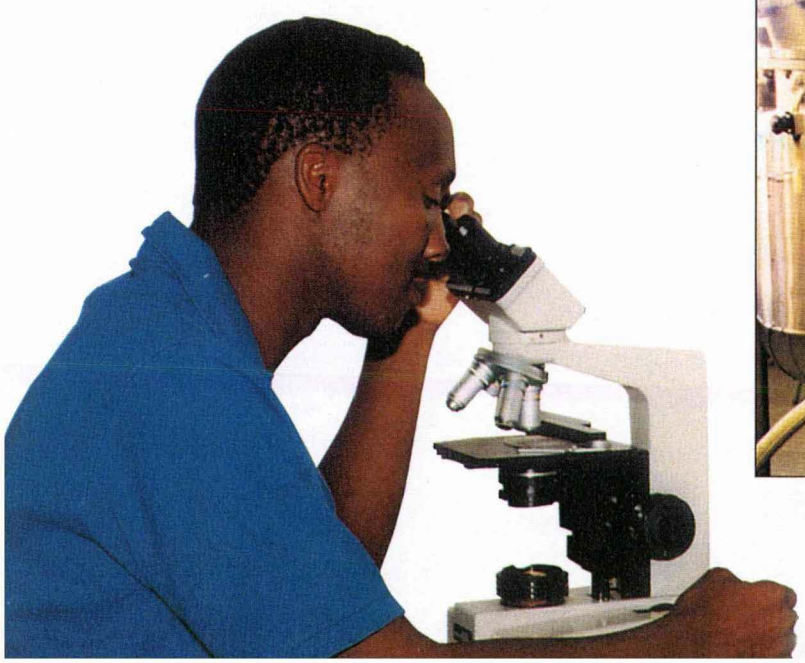
The Onderstepoort Institute for Exotic Diseases of the ARC (OIED) is a high-security containment facility designed for handling highly contagious pathogens of animals.

The laboratory commenced its operations in 1984 and in 1995 it was transferred from the Department of Agriculture to become an institute under the auspices of the Agricultural Research Council of South Africa. It presently houses an "Office International des Epizooties" (OIE) reference laboratory for African swine fever (ASF) and is recognised by the Food and Agriculture Organization (FAO) of the United Nations as the Collaborating Centre for foot-and-mouth disease (FMD) and ASF for sub-Saharan Africa. The institute's facility complies with international requirements for laboratories of this nature, incorporating features such as:

- *All areas where viruses are handled are under continuous negative air pressure*
- *All air leaving the contaminated areas is filtered through double-banked HEPA filters*
- *All effluent from contaminated areas is sterilized by steam*
- *All objects which leave the laboratory are sterilized by heat ,or formaldehyde gas*
- *Personnel wear special laboratory clothes and automatic showers ensure that they shower before leaving*

Foot-and-mouth Disease

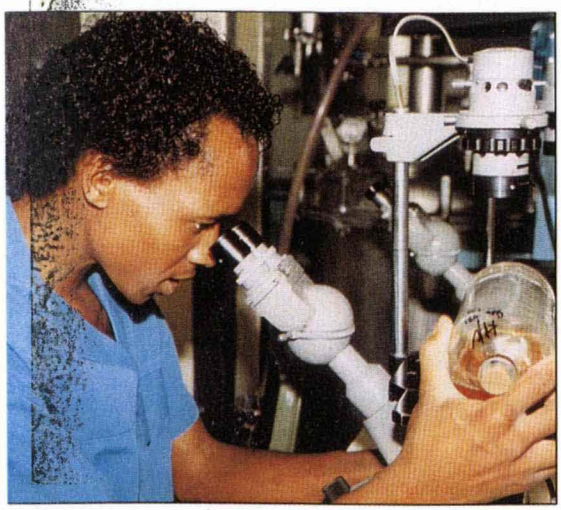
FMD is an acute and highly contagious viral disease which can affect all cloven-hoofed animals. The disease spreads mainly via direct contact between animals, but can also be transmitted indirectly by a variety of means, including infected meat and milk. Although it is seldom fatal in adult animals the disease is greatly feared because it can have a severe financial effect on agriculture, particularly where intensive livestock production systems are practiced, such as on dairy farms and in feedlots.



ARC-OIED

Diagnostic Services

The institute is fully equipped to provide an effective diagnostic service in respect of FMD and ASF as well as some other less important diseases. Routine virus isolation, identification, typing and serology as well as specialized investigations using modern molecular techniques can be performed.



The tests performed include the following:

Virus isolation and identification

- Isolation on cell cultures
- Virus typing by ELISA
- Quantification of virus levels in tissues
- Antigenic analysis using polyclonal and monoclonal antibodies
- Genome sequencing using direct RNA-sequencing methods and the polymerase chain reaction (PCR)

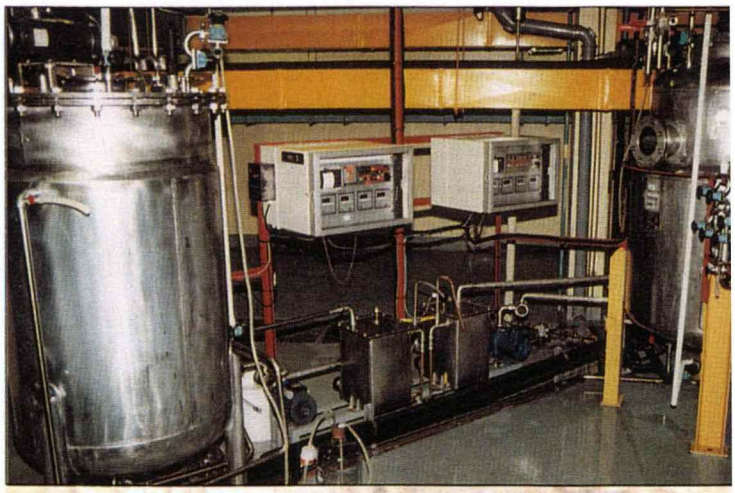
Antibody detection

- Virus neutralization
- ELISA
- Western blotting

FMD Vaccine Production

The institute produces conventional inactivated FMD vaccine containing one or more of the SAT types with saponin and alhydrogel as adjuvants. Special attention is paid to finding the appropriate strains for the specific locality in which the vaccine is to be used. The reason for this measure is that epidemiological research has shown that SAT type viruses evolve independently in different geographic areas in southern Africa and that vaccines need to be formulated specifically for particular localities.

In order to provide suitable vaccines for African countries where "European" types of FMD occur (viz. A, O and C), the OIED has an association with the Dutch vaccine manufacturer, DLO Institute for Animal Science and Healths, whereby multi-valent vaccines containing combinations of one of the 6 virus types prevalent in Africa (viz. SAT 1, SAT 2, SAT 3, A, O and C) can be provided. These vaccines are obtainable through the company "INTERVET".



A problem in Africa, where extensive animal husbandry methods are practised, is that cattle need to be vaccinated twice or sometimes three times a year, depending on the prevailing epidemiological situation. Such frequent vaccination is logistically difficult and expensive. To obviate this necessity the institute is investigating the development of an oil-adjuvanted vaccine which can provide higher and longer-lasting levels of immunity.

Training

As part of the institute's function as an FAO Collaborating Centre for ASF and FMD for sub-Saharan Africa, an annual post-graduate training course is held in conjunction with the Faculty of Veterinary Science of the University of Pretoria for veterinarians who require specialist training in the diagnosis and control of epizootic diseases, such as FMD, ASF, rinderpest, rabies and contagious bovine pleuropneumonia. The emphasis in the course is on practical matters, particularly disease recognition and specimen collection in the African context.

Intervet
Tel: (011) 452 1086, Int: 31 4855 87600
Fax: (011) 452 1532, Int: 31 4855 87660

For further information, contact:
The Director
Onderstepoort Institute for Exotic Diseases
Private Bag X6
ONDERSTEPOORT 0110
REPUBLIC OF SOUTH AFRICA
Tel: (012) 529 9511, Int: 27 12 529 9511
Fax: (012) 529 9543, Int: 27 12 529 9543

poort Insitute for Exotic Diseases

Countries and trading blocks in the developed world which are free of FMD, such as North America, the European Union, Australia and Japan, are fearful of importing or re-importing FMD and therefore prohibit the importation of livestock and animal products from countries which do not control the disease effectively. An extensive outbreak of FMD in South Africa would disrupt agricultural exports for one to two years. In such an event it is estimated that direct production losses and loss of export earnings would be in the region of R1-2 billion.

Despite the fact that the last recorded case of foot-and-mouth disease in livestock in South Africa occurred in 1983, the disease remains important for strategic reasons. In the Kruger National Park and adjacent areas, buffalo maintain FMD viruses and serve as a potential source of infection for livestock in the area. Within the Park, frequent epidemics occur in impala herds. For these reasons the areas surrounding the Kruger National Park are managed as a controlled zone in which zoo-sanitary measures are implemented to prevent the spread of viruses to infection-free areas of the country. Livestock on farms adjacent to the KNP are routinely vaccinated. These infections - for areas of South Africa are now recognized by the OIE as a FMD-free zone.

Research

Research on FMD has three primary aims: better understanding of the epidemiology of the disease in southern Africa, production of improved vaccines and development of more efficient diagnostic methods. Since the epidemiology of FMD in southern, central and eastern Africa is unique because of the involvement of wildlife and indigenous types of virus - SAT 1, 2 and 3 (SAT is an acronym for South African Territories), information on this disease is not available elsewhere. The institute is recognised as being pre-eminent in the field of elucidating the epidemiology of FMD in Africa. Research on ASF is also primarily aimed at a better understanding of the epidemiology of the disease in southern Africa and at improving diagnostic methods.

African Swine Fever

ASF is a rapidly fatal viral disease of domestic pigs. In South Africa it is endemic to the lowveld areas of the North-West, Northern and Mpumalanga provinces. In these areas the infection is maintained in a cycle between warthogs and soft-bodied ticks called tampans. There is no vaccine for the prevention of ASF and therefore control measures are concentrated on the restriction of the movement of pigs, warthogs and their products from the endemic areas, as well as the camping off of pig units to prevent contact with tampan-infected warthogs.

ANNEXE 3

OVI

Documents techniques :

- Vaccins,
- Diagnostics,
- Formation

ONDERSTEPOORT BIOLOGICAL PRODUCTS LTD.

OBP

PRICE LIST OF ONDERSTEPOORT VACCINES AND OTHER BIOLOGICAL PRODUCTS
TEL:+27 12 5299-111 FAX:+27 12 565-5260 E-MAIL: irma@obpvaccines.co.za
SALES MANAGER EMAIL: jan@obpvaccines.co.za

PRICE APPLICABLE FROM 1 APRIL 2001

EXPORT

TERMS OF PAYMENT

1. Cash or by bank transfer to Standard Bank of South Africa (Pty) Ltd; Pretoria North, South Africa, foreign exchange to Onderstepoort Biological Products Ltd., without any cost to us.

2. Irrevocable letter of credit advised through and confirmed by the standard Bank of South Africa (Pty) Ltd, International Trade Centre, Pretoria, South Africa, without any cost to us. Our swift address is **SBZAZAJJ** and our Bank account no **1044503.**

3. Deposits can be made to: Standard Bank of South Africa (Pty) Ltd., Pretoria North, US Dollar account number 090252713, branch code 010445 for: Onderstepoort Biological Products Ltd., South Africa, without any cost to us.

4. All quotations will be costed at ZAR/USD current rates. Shipment will only take place after the receipt of the payment, (proof of payment must be provided). Any adverse fluctuation in exchange rates will unfortunately be for your account. Quotations are subjected to prevailing rate of exchange.

ADDRESS: Onderstepoort Biological Products (OBP) Ltd.
Private Bag X07
Onderstepoort
Republic of South Africa
0110

Dr Pamela Hunter
Tel (012) 529 9336 (direct line)
Edress : pamela@obpvaccines.co.za.
switchboard
(012) 529-9111

Product Code	Product Name	Doses or ml per bottle	Price per bottle in ZAR
12410J	Actinomyces (Corynebacterium) pyogenes (cattle)	10 X 10ml	19.40
12410J	Actinomyces (Corynebacterium) pyogenes (sheep, goats and calves)	20 X 5ml	19.40
12410J	Actinomyces (Corynebacterium) pyogenes (lambs, kids)	50 X 2ml	19.40
10150F	Anthrax	10 X 1ml	7.50
10150J	Anthrax	100 X 1ml	75.00
10210F	Black quarter (Cl. Chauvoei) (cattle)	5 X 2ml	4.55
10210F	Black quarter (Cl. Chauvoei) (sheep)	10 X 1ml	4.55
10210J	Black quarter (Cl. Chauvoei) (cattle)	50 X 2ml	45.50
10210J	Black quarter (Cl. Chauvoei) (sheep)	100 X 1ml	45.50
20130J	Blue tongue	100 X 1ml	85.00
10360J	Blue udder (sheep)	50 X 2ml	50.00
10460F	Botulism (cattle)	5 X 2ml	5.80
10460F	Botulism (sheep)	10 X 1ml	5.80
10460J	Botulism (cattle)	50 X 2ml	58.00
10460J	Botulism (sheep)	100 X 1ml	58.00
10560F	Botulism/Black quarter (combination)	2 X 5ml	4.26
10560J	Botulism/Black quarter (combination)	20 X 5ml	42.60
10730F	Brucella abortus S19 (cattle)	2 X 5ml	4.00
10730J	Brucella abortus S19 (cattle)	20 X 5ml	36.00
10830F	Brucella Rev 1 (sheep and goats)	5 X 2ml	6.00
10830J	Brucella Rev 1 (sheep and goats)	50 X 2ml	60.00
10930F	Calf paratyphoid (live)	2 X 5ml	2.34
12560J	Clostridium septicum (cattle) (malignant oedema)	20 X 5ml	50.00
12560J	Clostridium septicum (sheep) (malignant oedema)	50 X 2ml	50.00
11160J	Corynebacterium ovis	50 X 2ml	50.00
12310K	Enterotoxaemia (aluin) Pulpy kidney	500 X 1ml	100.00
12310J	Enterotoxaemia (aluin) Pulpy kidney	100 X 1ml	24.00
12320J	Enterotoxaemia (oil) Pulpy kidney	100 X 1ml	75.00
20360D	Equine influenza (Packed in syringe)	1 X 2ml	33.00
20460D	Equine influenza (Tetanus combination) (Packed in syringe)	1 X 2ml	33.33
11320F	Escherichia coli (oil) cattle and sheep	5 X 2ml	10.75
11320J	Escherichia coli (oil) cattle and sheep	50 X 2ml	107.50
20530C	Fowl pox	100 Dosisse	15.00
11530J	Fowl typhoid	100 X 1ml	8.00
20630C	Horsesickness (polyvalent)	1 X 2ml	26.78
11610J	Lamp dysentery	50 X 2ml	50.00
11760F	Leukopast Pasteurella (cattle)	10 X 1ml	15.00
11760J	Leukopast Pasteurella (cattle)	100 X 1ml	150.00
20860J	Leukopast 3 (Past IBR/PI Type 3 Combination)(cattle)	20 X 5ml	96.00
20860K	Leukopast 3 (Past IBR/PI Type 3 Combination)(cattle)	100 X 5ml	480.00
20930F	Lumpy skin disease	2 X 5ml	4.94
20930J	Lumpy skin disease	20 X 5ml	38.80
21030J	Newcastle disease (Komarov)	500 X 0,2ml	50.00
21220F	Ovine enzootic abortion (oil)	10 X 1ml	20.00
21220J	Ovine enzootic abortion (oil)	100 X 1ml	200.00
11960J	Pasteurella (cattle)	20 X 5ml	26.40

12160J	Pasteurella (sheep and goats)	50 X 2ml	35.00
21330C	Pigeon pox	100 Dosisse	60.00
21460J	Rift Valley fever (inactivated) cattle	50 X 2ml	150.00
21460J	Rift Valley fever (inactivated) sheep and goats	100 X 1ml	150.00
21530J	Rift Valley fever (live) sheep and goats	100 X 1ml	100.00
12660J	Swelled head (Clostridium novyi) (sheep)	50 X 2ml	50.00
12660J	Swelled head (Clostridium novyi) (cattle)	20 X 5ml	50.00
12760F	Tetanus	10 X 1ml	10.00
21730F	Three-day-stiffsickness (ephemeral fever)	5 X 2ml	10.20
12820F	Vibrio (Campylobacter) olie (heifers)	5 X 2ml	20.00
12820F	Vibrio (Campylobacter) olie (bulls)	2 X 5ml	20.00
12820J	Vibrio (Campylobacter) olie (heifers)	50 X 2ml	200.00
12820J	Vibrio (Campylobacter) olie (bulls)	20 X 5ml	200.00

2. The following vaccine and products are only available after consultation with OBP.			
10630F	Brucella abortus S19 (reduced dose) adult cattle vaccine	5 X 2ml	10.70
10630J	Brucella abortus S19 (reduced dose) adult cattle vaccine	50 X 2ml	107.00
40400J	Brucella abortus agglutinasie antigeen (SAT)	100ml	238.00
40100G	Brucella abortus complement fixation antigen (CFT)	20ml	46.00
40500C	Brucella abortus standardised antiserum	1ml	21.62
40200G	Brucella abortus milkring test antigen (MRT)	20ml	46.00
40300G	Brucella abortus Rose Bengal antigen (RB)	20ml	46.00
11830F	Contagious Bovine Pleuropneumonia (CBPP) vaccine (T1/44)	10 X 1ml	POR
21630J	Rinderpest vaccine	100 X1ml	POR
40900D	Tuberculin (Bovine) 18 Doses of 0,1ml	1,8ml	POR
40800A	Tuberculin (Avian) 18 Doses of 0,1ml	1,8ml	POR

* POR: Price on request.

DIAGNOSTIC PRICE LIST
2000/2001

Onderstepoort Veterinary Institute
Private Bag X5
Onderstepoort
0110

Tel: (012) 529 9272
Fax: (012) 529 9275

ARC • LNR

AN INSTITUTE OF THE
AGRICULTURE RESEARCH COUNCIL

CONTENTS

GENERAL INFORMATION

USING THIS MANUAL

Available diagnostic services and tests performed by the Onderstepoort Veterinary Institute (OVI) are grouped and tabulated in accordance with the organization of specialities within the OVI.

The prices quoted include VAT.

All export profiles and large volumes of samples are eligible for an *ad hoc* discount and will be quoted on an *ad hoc* basis. Prices available on request.

ENQUIRIES

Onderstepoort Veterinary Institute

For enquiries regarding submissions, results or other information, please contact the Specimens Registration Office **Tel:(012) 529 9272/3/4**. The institute is open Monday to Friday from 7:30 to 16:00.

After hours Tel: 529 9111

Results of diagnostic tests will be transmitted by telephone or fax where possible, and will be followed by a written report.

For enquiries concerning foot-and-mouth disease and African swine fever, dial **(012) 529 9511**. The Onderstepoort Institute for Exotic Diseases (OIED) is manned 24 h per day; the after hours number is (012) 529 9502 (security office).

COLLECTION AND SUBMISSION OF SPECIMENS

Specimens

An accurate diagnosis depends on the provision of proper specimens. It is therefore essential that specimens should be collected and submitted as outlined in the *DIAGNOSTIC SERVICES: USERS' MANUAL*. Specimens should be sent to the OVI as quickly as possible and, when necessary, a courier service should be used. Specimens can be submitted after hours, preferably with prior notification of the section involved, and in such cases they should be delivered to the security office. A pathologist is available after hours to attend **emergency cases** and can be contacted telephonically by dialling (012) 529 9111.

Specimens for the diagnosis of **foot-and-mouth disease** and **African swine fever** should only be sent in collaboration with the local S.V. (see also below), and must always be delivered directly to the Onderstepoort Institute for Exotic Diseases. Specimens that must be **kept cool** during transport should be refrigerated first at 4 °C and then sent packed on frozen cool packs.

Suitable **containers** for the submission of specimens as well as **swabs** for bacteriological cultures and virological isolations are available from the institute. For further information please contact the Specimen Registration Office Tel:(012) 529 9272.

Address

a) The address for **all** submissions (**except** for **foot-and-mouth disease** and **African swine fever**) is:

The Director
Onderstepoort Veterinary Institute
0110 Onderstepoort

*b) The address for the submission of specimens for the diagnosis of **foot-and-mouth disease** and **African swine fever** is:*

The Director
Onderstepoort Institute for Exotic Diseases
0110 Onderstepoort

Submission forms

*Specimens submitted for **Brucellosis** serology must be accompanied by the 'Brucella CA5 form' and for **dourine** by the 'Dourine test and agreement form'. These and the **general submission form** for all other specimens are available from the Specimen Registration Office*

(012) 529 9272. Should the general submission form not be available, the specimens must be accompanied by a covering letter. This letter should include relevant information concerning the owner, name and district of the farm, animal(s) involved, history, symptoms of illness and postmortem lesions. Test/tests required must be indicated.

Payments

Cheques should include VAT and be made payable to: THE DIRECTOR, OVI.

If no payment is received with the samples an account will be sent to <u>THE SUBMITTER</u> after completion of the tests required.

PLEASE NOTE THAT PRICES MAY CHANGE WITHOUT NOTICE DUE TO CURRENCY FLUCTUATIONS.

Diagnostic Services/Prices - 2000/2001

BACTERIOLOGY
Dr M. Henton
Tel: (012) 529 9379/82

Test		*Unit*	*Total*
Aerobic culture			R 66.00
Anaerobic culture			R 66.00
Fungal culture			R 110.00
Antibiogram			R 35.00
FAT			R 66.00
Mycobacterium culture			R 150.00
Clostridium botulinum toxin			R 200.00
Bacterial typing			R 150.00
Sheathwash:	*Campylobacter*		R 30.00
	Trichomonas		R 30.00
Complete faecal examination			R 250.00
Salmonella enteritidis phage typing			R 200.00
Examination of smears			R 30.00

Bacteriology: All prices are per case or per isolate. A case is usually taken as one animal. Should samples from several animals be submitted during a disease outbreak, the full cost will be charged for the first animal and 50% thereof for each subsequent animal. This only applies to samples submitted on the same day. Samples submitted on different days are seen as separate cases. The price for antibiograms and bacterial typing are per isolate. In the case of Escherichia coli typing, the price for typing is per case. All prices include VAT. Clients are very welcome to discuss prices with us prior to sample submission, if uncertainty exists about the likely cost of a case.

BACTERIAL SEROLOGY
Dr A. Potts
Tel: (012) 529 9117

Test		*Unit*	*Total*
ELISA test:	*Brucella abortus*	/sample	R 9.00
Complement fixation test:	Q-fever	/sample	R 26.00

Please note: Prices include VAT

BACTERIAL SEROLOGY
Dr A. Potts
Tel: (012) 529 9117

Test		*Unit*	*Total*
	Contagious bovine pleuropneumonia	/sample	R 13.00
	Contagious caprine pleuropneumonia	/sample	R 13.00
	Dourine (Slapsiekte)	/sample	R 24.00
	B abortus/ovis/melitensis	/sample	R 10.00
	Paratuberculosis	/sample	R 20.00
	Contagious equine metritis	/sample	R 13.00
Microscopic agglutination test:	Leptospirosis - canine	/sample	R 55.00
	Leptospirosis - other 8 serovars per sample (*L. canicola; L. icterohaemorrhagiae; L. grippotyphosa; L. hardjo; L. bratislava; L. pomona; L. szwajizak; L. tarassovi; L. muenchen; L. australis*)	/sample	R 26.00
Isolation:	Leptospirosis	/sample	R 55.00
Milk Ring Test:	*B abortus*	/sample	R 9.00
RBT, SAT & CFT on RBT positives:	*B abortus*	/sample	R 9.00
Slide agglutination test:	*B canis*	/sample	R 253.00
Antigen and reference sera:	Dourine positive antisera	/1ml	On request
	Leptospira antigen	/tube	On request
	Contagious Equine Metritis (CEM) positive sera	/1ml	On request
	CEM antigen	/0.1ml	On request

Please note: Prices include VAT

DIAGNOSTIC SUPPLIES
Dr H. Booker
Tel: (012) 529 9272 / Sel: 082 773 2486

Test	*Unit*	*Total*
28ml sterile plastic specimen jars	/jar	R 0.95
Amies swabs	/swab	R 4.20
15ml McCartney bottles with transport medium for *Chlamydia* or viral swabs	/bottle	R 7.20
200ml bottle with formalin	/bottle	R 4.40
20 and 21g needles	/box (100)	R 127.00
Needle holders	/holder	R 2.00
Venoject tubes	/box (100)	R 143.00
Rodac plates (prepared on request	/plate	R 3.10
Note: The above prices do not include packaging, transport or postage		

ELECTRON MICROSCOPY
Mr J.F. Putterill
Tel: (012) 529 9174

Test		*Unit*	*Total*
Electron microscopy	Negative staining	/sample	R 42.00
Projects utilising Scanning- and/or Transmission electron microscopy			On request
Prints/slides			On request

ENTOMOLOGY & ACAROLOGY
Ms H. Heyne
Tel: (012) 529 9187

Test	*Unit*	*Total*
Identification of external parasites	/specimen	R 33.00
More than one specimen	/hour	R 120.00
Light-trap with a blow off fan of 220V and a 8W UV light tube to catch midges	/fan	R 825.00

Please note: Prices include VAT

FEED PATHOGEN LABORATORY
Dr M. Henton
Tel: (012) 529 9401

Test		*Unit*	*Total*
Water analysis	*E coli*, Coliforms and total count	/sample	R 150.00
	Salmonella, Anthrax, *Clostridium* combination	/sample	R 145.00
Isolation	*Salmonella*	/sample	R 66.00
	Clostridium	/sample	R 66.00
	Anthrax	/sample	R 66.00
	Faecal *Escherichia coli*	/sample	R 66.00
Four plate test	1-5 samples per plate	/plate	R 110.00

PARASITOLOGY - HELMINTHOLOGY
Ms L. Michael
Tel: (012) 529 9247

Test		*Unit*	*Total*
Compost samples	Detection of *Ascaris suum* eggs	/sample	R 104.00
Evaluating blood for anaemia		/sample	R 9.00
Faecalyser		/sample	R 29.00
Measles viability test		/sample	R 20.00
Nematode egg count		/sample	R 29.00
Nematode egg count - pooled (10 samples)		/10 samples	R 62.00
Nematode larvae (culture/stabilate)	for sheep	/20 doses	R 3,762.00
	for cattle	/20 doses	R 5,016.00
Nematode larval typing and identification		/sample	R 101.00
Trematode egg count		/sample	R 56.00
Trematode egg count - pooled (10 samples)		/10 samples	R 80.00

PARASITOLOGY - HELMINTHOLOGY
Ms L. Michael
Tel: (012) 529 9247

Test		*Unit*	*Total*
Total worm count - sheep	without digestion	/animal	R 836.00
	with digestion	/animal	R 1,881.00
Worm count - sheep	without digestion	/organ	R 275.00
	with digestion	/organ	R 627.00
Total worm count - cattle	without digestion	/animal	R 1,265.00
	with digestion	/animal	R 3,762.00
Worm count - cattle	without digestion	/organ	R 1,254.00
	with digestion	/organ	R 440.00
Faecal egg count reduction test	Examination of resistant worm strains/ flocks	See *	R 2,497.00

*Notes: *Include 75 animals for the 1st and 2nd leg of the test, but excludes subsistence and travel allowance.*

PARASITOLOGY - PROTOZOAL/RICKETTSIAL DISEASES
Dr L.M. Lopzez-Rebollar
Tel: (012) 529 9217; Cel: 083 773 4084

Test		*Unit*	*Total*
Smear examination		/sample	R 31.00
Serology	Bovine babesiosis (*Babesia bigemina/ bovis/occultans*/spp: 2 or 4 antigens)	/antigen/ sample	R 17.00
	Besnoitiosis (*Besnoiti*: 1 antigen)	/antigen/ sample	R 17.00
	Heartwater (*Cowdria ruminantium*: 1 antigen)	/antigen/ sample	R 17.00
	Toxoplasma gondii - card agglutination test	/sample	R 95.00
	Trypanosoma (antibody detection - non-specific)	/sample	R 60.00

PARASITOLOGY - PROTOZOAL/RICKETTSIAL DISEASES
Dr L.M. Lopzez-Rebollar
Tel: (012) 529 9217; Cel: 083 773 4084

Test		*Unit*	*Total*
	Anaplasmosis (*Anaplasma* 1 antigen) 1-4 samples	/sample	R 40.00
	Anaplasmosis (*Anaplasma* 1 antigen) 5 or more samples	/sample	R 28.00
	Herd examination - anaplasmosis (min 20 samples per herd)	/sample	On request
	Herd examination - Redwater [Both *B bigemina* and/or *B bovis* (min of 20 samples per herd)]	/sample	On request
	Herd examination - Redwater (*B bigemina* and *B bovis*) and Anaplasmosis (min of 20 samples per herd)		On request
Dogs: *Babesia gibsoni,*	Determination of *B gibsoni* status	/sample	R 60.00
Trypanosoma evansi, Leishmania spp	Determination of *T evansi* status	/sample	R 60.00
	Determination of *Leishmania* spp status	/sample	R 192.00
Equine piroplasmosis:	Serology: *Babesia (Theileria) equi* **and** *B caballi* IFAT	/sample	R 60.00
	Serology: *Babesia (Theileria) equi* **or** *B caballi* IFAT	/sample	R 30.00
	Complete equine piroplasmosis examination - Serology: *Babesia (Theileria) equi* **and** *B caballi* IFAT and blood smear examination, as well as *Babesia (Theileria) equi* culture	/sample	R 300.00

PARASITOLOGY - PROTOZOAL/RICKETTSIAL DISEASES
Dr L.M. Lopzez-Rebollar
Tel: (012) 529 9217; Cel: 083 773 4084

Test		*Unit*	*Total*
	Babesia (Theileria) equi culture	/sample	R 214.00
	*Export testing for equine piroplasmosis - *Babesia (Theileria) equi* **and** *B caballi* IFAT	/sample	On request
*Theileriosis in buffaloes	Determination of *Theileria* spp status for transport/import purposes; DNA hybridization, serology and blood smear examination	/sample	On request
Intestinal protozoa	Species identification	/sample	R 29.00
	Differential identification and quantification	/sample	R 60.00
ANTIGEN AND REFERENCE SERA			
Babesia spp antigen (24 well slides)			US$ 15.00 R 67.00
Babesia positive serum (2ml freeze dried)			US$ 12.00 R 40.00
Babesia negative serum (2ml freeze dried)			US$ 12.00 R 40.00

**If samples are requested as "urgent", a specified surcharge applies*
Other diagnostic products available on request

PARASITOLOGY - TRAINING & AUDIOVISUAL AIDS
Ms H. Heyne, Tel: (012) 529 187 or Ms L. Michael, Tel: (012) 529 9247

Test	*Unit*	*Total*
Tick identification training course - 1 day course	/person*	R 825.00
Tick identification kit, up to 8 species for students, teachers, lecturers	/set	R 351.00
Tick specimens	/each	R 29.00
Black and white prints of ticks [8"x10" print = (20cm x 25cm)]	/print	R 36.00

PARASITOLOGY - TRAINING & AUDIOVISUAL AIDS Ms H. Heyne, Tel: (012) 529 187 or Ms L. Michael, Tel: (012) 529 9247		
Test	***Unit***	***Total***
Black and white prints of ticks [7"x9" print = (17,5cm x 22,5cm)]	/print	R 26.00
Black and white prints of ticks [5"x7" print = (12,5cm x 17,5cm)]	/print	R 19.00
Helminthology demonstration set of endoparasites	/sample	R 31.00
Helminthology kit for students, teachers, lecturers (includes basic life cycles)	/8 samples	R 313.00
Helminthology kit for students, teachers, lecturers (includes basic life cycles	/16 samples	R 627.00
Cestode demonstration set	/microsco-pic slide	R 15.00
Training course in basic helminthological procedures (2 days)	/person*	R 440.00
Training course in advanced helminthological procedures (3 days)	/person*	R 682.00
Training course in basic and more advanced helminthological procedures (4 days)	/person*	R 902.00
Photographic slides for demonstration purposes only (lecturers)/for demonstration - no printing	/slide	R 33.00
Photographic slides for publications/adverts - for single printing run - copyright retained by OVI	/slide	R 330.00
Educational videos (posted)	/video	R 200.00
Educational videos (to collect at the OVI)	/video	R 189.00
Parasitology laboratory bench fee	/person/ day	R 250.00
**Minimum 3 and maximum 4 persons*		

PATHOLOGY Ask for pathologist on duty Tel: (012) 529 9172		
Test	***Unit***	***Total***
*PM on cage bird/fish/foetus/other laboratory animals/poultry/rodents	/animal	R 55.00
*PM on calf/cat/crocodile/dog/foal/goat/ostrich/pig/sheep	/animal	R 77.00
*PM on cattle and horse	/animal	R 110.00
Field investigation		On request
*Histopathology	/case	R 77.00
Preparation/slide	/slide	R 11.00
Peroxidase test	/slide	R 50.00
Smear examination	/smear	R 30.00
FA *Chlamydia*	/case	R 66.00
** +50% of normal fee for each additional animal; +R35.00 if histopathology requred*		

PCR ASSAYS Dr G. Viljoen Tel: (012) 529 9441		
Test	***Unit***	***Total***
Actinobacillus pleuropneumonia	/sample	R 55.00
African horsesickness virus	/sample	R 80.00
Bird sexing	/sample	R 45.00
Brucella 1. *Brucella* detection	/each/ sample	R 66.00
2. Species identification: *B aboruts/ovis/ melitensis*	/each/ sample	R 66.00
3. Differentiation of field- from vaccine strains	/each/ sample	R 66.00
Clostridium perfringens Typing (types A, B, C and D)	/sample	R 100.00
Ehrlichia canis	/sample	R 50.00
Leptospira	/sample	R 90.00

PCR ASSAYS
Dr G. Viljoen
Tel: (012) 529 9441

Test		*Unit*	*Total*
Bovine Malignant catarrhal fever virus	Identification of wildebeest- and sheep-associated forms	/sample	R 90.00
Newcastle disease virus	Differentiation between virulent from avirulent strains	/sample	R 100.00
Pasteurella multocida toxigenic strain (PAR)		/sample	R 45.00
Salmonella spp and *Lawsonia intracellularis* (PIA)		/each/ sample	R 55.00
		/both	R 66.00
Mycoplasma	Contagious Bovine Pleuropneumonia (CBPP)	/each/ sample	R 50.00
	Contagious Caprine Pleuropneumonia (CCPP)	/each/ sample	
	Mycoplasmal contaminants of cell cultures or reagents	/each/ sample	R 50.00
Trichomonas			Under validation
Campylobacter			Under validation

Note: Fees are now being requested for Ehrlichia canis, Brucella and Newcastle disease, as well as African horsesickness virus assyas. We have also decided to offer 10% discount for each sample exceeding ten samples previously submitted by a particular individual for a specific assay.

RABIES
Dr J. Bingham
Tel: (012) 529 9420

Test	*Unit*	*Total*
Fluorescent antibody test and virus isolation	/brain	R 110.00
Neutralisation test	/sample	R 440.00

RESIDUE ANALYSIS
Ms A. Swemmer
Tel: (012) 529 9131/401

Test	*Unit*	*Total*
Antibiotic screening (4 plate test)	/sample	R 40.00
Antibiotic confirmation	/sample	On request

TOXICOLOGY
Dr J.P.J. Joubert
Tel: (012) 529 9260/3; Cel: 083 259 9362

Test	*Unit*	*Total*
Pesticides	/sample	R 100.00
Strychnine	/sample	R 80.00
Arsenic	/sample	R 50.00
Aflatoxin	/sample	R 100.00
Ochratoxin	/sample	R 100.00
Zearalenone	/sample	R 100.00
Ionophore	/sample	R 100.00
Ionophore quantify	/sample	R 200.00
Cholinesterase (blood)	/sample	R 80.00
Cardiac glycosides	/sample	R 120.00
Urea	/sample	R 100.00
Sodium chloride	/sample	R 70.00
Cyanide	/sample	R 70.00

TOXICOLOGY
Dr J.P.J. Joubert
Tel: (012) 529 9260/3; Cel: 083 259 9362

Test	*Unit*	*Total*
Trace elements	/sample	R 50.00
Trace element SCAN preparation	/sample	R 25.00
Trace element SCAN	Client pays ISCW**	
Electrolytes (Ca, Mg, Na, K)*	/sample	R 20.00
Ergot (stereo-microscope examination)	/sample	R 35.00
Nitrate/Nitrite	/sample	R 35.00
Metaldehyde	/sample	R 85.00
Monofluoro-acetate "1080)	/sample	R 120.00
Sodium fluosilicate	/sample	R 85.00
Plant identification	/sample	R 80.00
Fungi identification	Client pays PPRI***	
Gossypol	/sample	R 170.00
Mouse test (algal toxins)	/sample	R 75.00
Oxalate	Client pays ANAPI****	
Phosphine	/sample	R 50.00
Ph	/sample	R 30.00

*Notes: *New test name; **Institute for Soil, Climate and Water; ***Plant Protection Research Institute; ****Animal Nutrition and; Animal Products Institute*

Please note: Prices include VAT

TUBERCULOSIS
Dr A. Michel
Tel: (012) 529 9384

Test				*Unit*	*Total*
Tuberculosis -	Bovine	γ-Interferon	<5 samples	/sample	R 82.00
			5-100 samples	/sample	R 52.00
			>100 samples	/sample	R 31.00
	Monkey	γ-Interferon		/sample	R 75.00
Microscopic examination for mycobacterial species				/sample	R 30.00
Isolation and identification of mycobacterial species				/sample	R 136.00
ELISA for tuberculosis				/sample	R 26.00
ELISA for paratuberculosis in sheep and cattle				/sample	R 26.00

VIROLOGY: VIRAL SEROLOGY
Dr J. Paweska
Tel: (012) 529 9117

Test			*Unit*	*Total*
Neutralisation tests:	Lumpy skin disease	<10	/sample	R 90.00
		≥10	/sample	R 72.00
	Pseudolumpy skin disease	<10	/sample	R 90.00
		≥10	/sample	R 72.00
	Equine viral arteritis	<10	/sample	R 90.00
		≥10	/sample	R 72.00
ELISA tests:	African horsesickness	<10	/sample	R 19.00
		≥10	/sample	R 18.00
	Bovine virus diarrhoea antibody	<10	/sample	R 40.00
		≥10	/sample	R 35.00
	Bovine virus diarrhoea antigen		/sample	R 60.00

Please note: Prices include VAT

VIROLOGY: VIRAL SEROLOGY Dr J. Paweska Tel: (012) 529 9117					
Test			***Unit***	***Total***	
	Bluetongue	1-20 samples	/sample	R	19.00
		≥20 samples	/sample	R	18.00
	Equine encephalosis	1-20 samples	/sample	R	19.00
		≥20 samples	/sample	R	18.00
	Infectious bovine rhinotracheitis	1-20 samples	/sample	R	19.00
		≥20 samples	/sample	R	18.00
	Maedi-Visna	1-20 samples	/sample	R	19.00
		≥20 samples	/sample	R	18.00
	Newcastle disease	1-20 samples	/sample	R	19.00
		≥20 samples	/sample	R	18.00
	Para-influenza 3	1-20 samples	/sample	R	19.00
		≥20 samples	/sample	R	18.00
	Rift Valley Fever	1-20 samples	/sample	R	19.00
		≥20 samples	/sample	R	18.00
Hemagglutination inhibition:	Avian influenza - H5		/sample	R	24.00
	Avian influenza - H7		/sample	R	24.00
	Equine influenza - Hugenot		/sample	R	24.00
	Equine influenza - Prague		/sample	R	24.00
	Newcastle disease		/sample	R	24.00
	Rift Valley Fever		/sample	R	24.00
	Wesselsbron		/sample	R	24.00
Complement fixation tests:	Bluetongue	1-20 samples	/sample	R	22.00
		≥20 samples	/sample	R	21.00

Please note: Prices include VAT

VIROLOGY: VIRAL SEROLOGY Dr J. Paweska Tel: (012) 529 9117					
Test			***Unit***	***Total***	
	Enzootic haemorrhagic disease	1-20 samples	/sample	R	22.00
		≥20 samples	/sample	R	21.00
	Bovine ephemeral fever	1-20 samples	/sample	R	22.00
		≥20 samples	/sample	R	21.00
	Chlamydia	1-20 samples	/sample	R	22.00
		≥20 samples	/sample	R	21.00
	Akabana virus	1-20 samples	/sample	R	22.00
		≥20 samples	/sample	R	21.00
	African horsesickness	1-20 samples	/sample	R	22.00
		≥20 samples	/sample	R	21.00
	Equine encephalosis	1-20 samples	/sample	R	22.00
		≥20 samples	/sample	R	21.00
	Equine herpes virus 1	1-20 samples	/sample	R	22.00
		≥20 samples	/sample	R	21.00
	Equine herpes virus 4	1-20 samples	/sample	R	22.00
		≥20 samples	/sample	R	21
Agar Gel Immunodiffusion:	Bovine leukemia		/sample	R	24.00
	Equine infectious anaemia		/sample	R	24.00
	Johne's disease		/sample	R	24.00
	Others		/sample	On request	

Please note: Prices include VAT

VIROLOGY: VIRUS ISOLATION & IDENTIFICATION

Dr G.H. Gerdes
Tel: (012) 529 9117/4

Test		*Unit*	*Total*
Professional time, consumables etc		/isolation	R 192.00
Non-SPF eggs* (all routes)		/each	R 1.80
SPF-eggs* (all routes)		/each	R 15.00
Mice		/isolation	R 40.00
Tissue culture		/isolation	R 72.00
Electron microscopy (negative staining)		/sample	R 42.00
Neutralisation test	<10	/<10 samples	R 90.00
	≥10	/≥10 samples	R 72.00
Certification of trout farms		/farm	R 408.00
Trout ova testing			R 90.00
Autogenous vaccine (Papillomas)			On request
Biological tests in sheep/cattle			On request
Testing of disinfectants			On request
Examination of smears:	Giemenez	/smear	R 30.00
	Immunofluorescence	/smear	R 30.00

**Embryonated hen's eggs used at 5-6 days for yolksac route; 9-11 days for allantoic sac or CAM routes*

Minimum of 5 used per passage; usually 3X passages needed to certify negative

Note: There will be a price revision every 3 months due to currency fluctuations. All export profiles and large volumes of samples are eligible for an ad hoc discount and will be quoted on an ad hoc basis - prices available on request.

VIROLOGY: OIE REFERENCE LABORATORY FOR AFRICAN HORSESICKNESS & BLUETONGUE

Dr J. Paweska
Tel: (012) 529 9117

Test		*Unit*	*Total*
Virus samples	All Africa horsesickness reference strains (9 serotypes)	/sample	R 440.00
	All Bluetongue reference strains (24 serotypes)	/sample	R 880.00
Serum samples	African horsesickness (9 serotypes)	/sample	R 220.00
	Bluetongue (24 serotypes)	/sample	R 440.00
Reagent:	Virus (AHS; BT; EEV)	/sample	On request
	Type specific sera	/sample	On request

EXOTIC DISEASES DIVISION

Dr W. Vosloo
Tel: (012) 529 9588/92

Test		*Unit*	*Total*
Foot and mouth- (FMD) and other exotic diseases:	ELISA	/serotype	R 72.96
	Virus neutralisation test	/serotype	R 72.96
	Testing of embryo wash- and flush fluids	/pool -max 8 animals/pool	R 196.08
	PCR	/animal	R 589.38
	Virus isolation - PORCINE kidney cells	/animal	R 196.08
African Swine Fever	ELISA	/animal	R 72.96
	Virus isolation - bone marrow culture	/animal	R 196.08
	PCR	/animal	R 589.38

Note: Large consignments (>100) are eligible for an ad hoc discount

Department of Veterinary Tropical Diseases
Faculty of Veterinary Science
University of Pretoria
&
ARC-Onderstepoort Veterinary Institute

Animal Health Technicians' Course in Epizootic Diseases of Livestock

13 - 15 November 2000

VENUE

Small Auditorium, Department of Veterinary Tropical Diseases (DVTD)
and
Post Mortem Hall, Department of Pathology
Faculty of Veterinary Science, University of Pretoria, Onderstepoort

ARC • LNR

University of Pretoria

PROGRAMME

Monday, 13 November 2000

08:00 – 08:30	Registration and tea/coffee in Lapa of DVTD	
08:30 – 08:40	Opening	Prof J A W Coetzer Head of Department of Veterinary Tropical Diseases (DVTD)
08:40 – 09:30	Rift Valley fever	Prof J A W Coetzer
09:35 – 10:30	Foot-and –mouth disease	Dr G R Thomson Director of Onderstepoort Veterinary Institute (OVI)
10:30 – 11:00	***Tea/coffee in Lapa***	
11:00 – 11:45	African horse sickness	Prof J A W Coetzer
11:50 – 12:40	Bluetongue	Prof J A W Coetzer
12:40 – 14:00	***Lunch in Faculty's cafeteria in Arnold Theiler Building***	
14:00 – 14:35	Demonstration of a post mortem examination of a fowl.	Dr A J Olivier Department of Pathology
14:45 - 15:25	Newcastle disease	Dr A J Olivier
15:30 - 16:30	Rinderpest and pestes des petits ruminants	Prof R C Tustin (DVTD)
17:00 - 19:00	***Social function in Lapa***	

Tuesday, 14 November 2000

08:00 – 08:15	Tea/coffee in Lapa	
08:15 – 10:45	Post mortem demonstration and smear and specimen taking: Post mortem hall, Department of Pathology	Dr M-L Penrith (OVI) and Prof R C Tustin (DVTD)
10:45 – 11:15	***Tea/coffee in Lapa***	
11:15 – 11:45	Slide show of smears	Dr M-L Penrith and Prof R C Tustin
11:50 – 13:00	Anthrax in livestock and wildlife (Lecture Hall 1.37, Arnold Theiler Building)	Dr J Picard (DVTD)
13:00 – 14:00	***Lunch in cafeteria***	

14:00 – 14:50	Blackquarter and its differential diagnosis	Dr M Henton (OVI)
15:00 – 15:45	Botulism	Dr M Henton

Wednesday, 15 November 2000

08:00 – 08:15	***Tea/coffee in Lapa***	
08:15 – 09:00	African swine fever	Dr M-L Penrith
09:05 – 09:50	East Coast fever and Corridor disease	Dr H Stoltsz (DVTD)
09:55 – 10:35	Contagious bovine pleuropneumonia	Dr J Picard
10:35 – 11:05	***Tea in Lapa***	
11:05 – 12:00	Tuberculosis in domestic animals and wildlife in South Africa	Prof N P J Kriek Dean, Faculty of Veterinary Science
12:00 – 13:00	Presentation of available extension material (videos, cd roms, posters) followed by evaluation and conclusion of course.	
13:00	***Issuing of certificates and lunch in Lapa.***	

AFRICAN EPIZOOTIC DISEASES COURSE
PROGRAMME
9 – 13 OCTOBER 2000

Sunday, 8 October 2000

Arrival of delegates

18:00 : Cocktail party

Hotel 224, Cnr Leyds & Schoeman Streets, Arcadia
Pretoria

Monday, 9 October 2000

Venue: Department of Veterinary Tropical Diseases
Faculty of Veterinary Science

08:15 - 08:30	:	Welcome and introduction	*DR G BRÜCKNER* *Director: Veterinary Services* *National Department of Agriculture*
08:30 – 09:30	:	Contagious bovine pleuropneumonia (CBPP): An overview, with particular reference to the epidemiology, diagnosis and control	*DR J PICARD*
09:30 – 10:00	:	CBPP: Video and discussion	
10:00 – 10:30	:	Tea break	
10:30 – 11:10	:	Lumpy skin disease: Video and discussion	*PROF JAW COETZER*
11:10 – 12:00	:	Epidemiology, diagnosis and control of Rift Valley fever (including video)	*PROF JAW COETZER*
12:00 – 12:15	:	Discussion	
12:15 – 13:15	:	Canine rabies	*MR G BISHOP*
13:15 – 14:00	:	*Lunch*	
14:00 - 14:40	:	Wildlife rabies	*DR J BINGHAM*
14:40 – 16:00	:	Specimen submission and diagnosis of rabies (including practical sessions)	*DR J BINGHAM*
16:00 – 17:00	:	Rabies: Videos	

Tuesday, 10 October 2000

Venue: Department of Veterinary Tropical Diseases
Faculty of Veterinary Science

08:15 – 09:00	:	Anthrax: An overview with particular reference to the Southern African situation *PROF N P J KRIEK*
09:00 – 09:15	:	Discussion
09:15 - 10:00	:	Practical session *DR J E PICARD*
10:00 - 10:30	:	*Tea break*
10:30 - 11:15	:	Rinderpest: A global perspective *DR P ROEDER*
11:15 – 11:30	:	Discussion
11:30 - 12:00	:	Pestes des petits ruminants *DR P ROEDER*
12:-00 – 12:15	:	Discussion
12:15 – 13:00	:	African horsesickness *PROF A GUTHRIE*
13:00 – 13:15	:	Discussion
13:15 - 13:45	:	*Lunch*
13:45 - 14:30	:	Bluetongue: Epidemiology, diagnosis and control. *DR B ERASMUS*
14:30 – 14:45	:	Discussion
14:45 – 15:45	:	Emergency preparedness *DRS A BOGHOSSIAN, A KNOWLES, T MCKENNA & G SVETLIK*
15:45 – 16:00	:	Discussion

Wednesday, 11 October 2000

Venue: Department of Veterinary Tropical Diseases
Faculty of Veterinary Science

08:15 – 10:30	:	Theilerioses: An overview (including practical sessions) *DR H STOLTSZ*
10:30 – 11:00	:	Discussion
11:00 - 11:30	:	Epidemiology of foot-and-mouth disease in Southern Africa *PROF GR THOMSON*
11:30– 12:00	:	Video – Foot and mouth disease: An African perspective
12:00 – 12:30	:	Foot-and-mouth disease: Diagnostics *DR W VOSLOO*
12:30 – 13:00	:	Foot-and-mouth disease: control *PROF GR THOMSON*
13:00 – 13:30	:	Discussion
13:30 – 14:15	:	*Lunch*
14:15 – 15:00	:	Newcastle disease: An overview including ostriches *DR C LE ROUX*
15:00 – 15:15	:	Discussion
		Tour of Faculty or OVI (optional)
18:00	:	*Social evening*

Thursday, 12 October 2000

Venue: OIED

08:00 - 09:20 : African swine fever – overview and video
DR M PENRITH

09:20 - 10:00 : Hog cholera: an overview
PROF J T VAN OIRSCHOT

10:00 - 10:30 : *Tea break*

10:30 - 13:00 : Practical session (1)

13:00 - 15:30 : Practical session (2)

I. issue of laboratory clothes/explanation of shower procedure
II. demonstrate clinical foot-and-mouth disease, African swine fever, Newcastle disease
III. probang sampling of cattle
IV. discussion

DR C PHIRI

Lunch - 2 groups

Group 2: 12:00 - 12:30
Group 1: 13:00 - 13:30

Friday, 13 October 2000

Venue: OIED

08:30 - 10:30	:	Practical session Group 1
10:30 - 10:40	:	Discussion/Course evaluation Group 1
10:30 - 12:30	:	Practical session Group 2
12:30 - 12:40	:	Discussion and evaluation Group 2

I. monitor progress of clinical disease: foot-and-mouth disease and African swine fever, Newcastle disease
II. post-mortem on cases of African swine fever, New-Castle disease
III. collection and submission of specimens for foot-and-mouth disease and African swine fever
IV. discussion

SECURITY REGULATIONS AT THE ONDERSTEPOORT INSTITUTE OF EXOTIC DISEASES (HIGH SECURITY LABORATORY) APPLICABLE AFTER ATTENDANCE OF PRACTICALS OF THE COURSE

Any delegate who took part in the practical sessions during the last two days of the course may:

1. for a period of five days after the last day of the course, not visit any farms, institutions, game reserves or area where cloven-hoofed animals are found or kept, or food is prepared for such animals;
2. for a period of three days after the last day of the course, not have any contact with persons who work with cloven-hoofed animals.

Video: Rift Valley fever

Video: Contagious bovine pleuropneumonia

Video: Bovine spongiform encephalopathy

Video: African horsesickness: clinical and pathological features

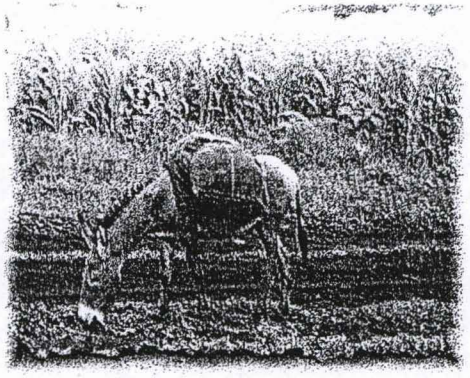
Video : Bluetongue: clinical and pathological features

Foot-and-mouth disease : video on clinical signs *Pirbright*

ARC · LNR

Animal Health for Developing Farmers

Price List

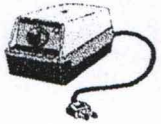


ARC-Onderstepoort Veterinary Institute
Private Bag X5
Onderstepoort
0110
Tel.: (012) 5299158
Fax: (012) 5299427

June 2000

Slide sets

Slide sets consist of a folder containing numbered and labeled slides, instructions on how to use that particular series and an information leaflet which can be duplicated for distribution (at present in English only, but in the future these should be available in all major languages).



Allow a month for delivery after order.

Slide sets available:

1. African swine fever (M)
2. Are my chickens healthy (M)
3. Are my pigs healthy (M)
4. Brucellosis and Tuberculosis (M)
5. Clostridial diseases of ruminants (M)
6. Common diseases of cattle (L)
7. Common diseases of chickens (L)
8. Common diseases of pigs (M)
9. Common diseases of sheep and goats (L)
10. Community tick control (S)
11. Condition scoring (M)
12. External parasites of cattle (M)
13. External parasites of goats and sheep (M)
14. Foot and mouth disease/Lets work together to control foot and mouth (M)
15. Is my animal healthy? (cattle, sheep and goats) (L)
16. Mastitis (L)
17. Methods of tick control in cattle (S)
18. My cow is unable to stand up (M)
19. Newcastle disease (S)
20. Rabies (M)
21. Sheep scab (S)
22. Skin conditions in goat and sheep (M)
23. Skin conditions in pigs (L)
24. Tick life cycle (S)
25. Tick-borne diseases (L)
26. Tissue parasites - meat (M)
27. Tissue parasites - organs (M)
28. Udder and teat lesions (M)
29. What is the difference between vaccination and treatment (M)
30. Why are ticks important? (M)
31. Why did my animal die? (L)
32. Worms in your goats, sheep and cattle (L)
33. Zoonotic diseases (L)

* (L) = Large set * (M) = Medium set * (S) = Small set

Prices of the slides are:

	Price (excl. VAT)	VAT	Price (incl. VAT)
Small set	150,00	21,00	171,00
Medium set	210,00	29,40	239,40
Large set	285,00	39,90	324,90

Discount prices: Order of 10 or more sets of a specific series
Less 10%

	Price (excl. VAT)	VAT	Price (incl. VAT)
Small set	135,00	18,90	153,90
Medium set	189,00	26,46	215,46
Large set	256,50	35,91	292,41

Posters

The posters are available in English, and 2 sizes can be ordered (except where otherwise indicated)

A1 (594 mm x 840 mm)
A2 (420 mm x 594 mm)
They can also be ordered unlaminated or laminated.
If posters are required in different languages or sizes, this can be arranged on discussion.

Posters available or soon to be available

1. Acaricide resistance (only available in A2)
2. African horse sickness (only available in A2)
3. African swine fever - farmer (only available in A2)
4. Brucellosis (only available in A2)
5. Clostridial diseases
6. Condition scoring
7. Common diseases of small-scale broilers
8. Community medicine stores
9. Community tick control
10. External parasites of cattle
11. External parasites of goats and sheep
12. Foot and mouth disease
13. Frequency of tick control in cattle (only available in A2)
14. How should medicines be used
15. Important Vet. procedures in pigs (injection and tail docking) (only available in A2)
16. Important Vet. procedures in sheep and goats (identification) (only available in A2)
17. Important Vet. procedures in sheep and goats (castration) (only availabe in A2)
18. Important Vet. procedures in sheep and goats (foot/claw) (only available in A2)
19. Important Vet. procedures in sheep and goats (injection) (only available in A2)
20. Important Vet. procedures in pigs (identification) (only available in A2)
21. Lets work together to control foot and mouth disease
22. Mastitis
23. Methods of tick control in cattle
24. My cow is unable to stand up
25. Newcastle disease - farmer (only available in A2)
26. Parasitic cysts and lesions that occur in meat
27. Parasitic cysts and lesions that occur in organs
28. Sheep scab (only available in A2)
29. Skin conditions in pigs
30. Skin conditions in goats and sheep
31. Tick life cycle (only available in A2)
32. Tick-borne diseases in cattle, goats and sheep
33. Tuberculosis (only available in A2)
34. Udder and teat lesions
35. What is the difference between vaccination and treatment
36. Why are ticks important
37. Worms in your goats, sheep and cattle
38. Zoonotic diseases (diseases spread by bites): Rabies
39. Zoonotic diseases (diseases spread by eating infected meat and drinking infected milk)
40. Zoonotic diseases (diseases spread by handling infected animals)

The prices of the posters are:

	Price (excl. VAT)	VAT	Price (incl. VAT)
A2 Unlaminated	40,00	5,60	45,60
A2 Laminated	60,00	8,40	68,40
A1 Unlaminated	60,00	8,40	68,40
A1 Laminated	100,00	14,00	114,00

Discount prices: Order of 10 to 19 posters of a specific series
Less 5%

	Price (excl. VAT)	VAT	Price (incl. VAT)
A2 Unlaminated	38,00	5,32	43,32
A2 Laminated	57,00	7,98	64,98
A1 Unlaminated	57,00	7,98	64,98
A1 Laminated	95,00	13,30	108,30

ARC · LNR

Animal Health for Developing Farmers

Price List

ARC-Onderstepoort Veterinary Institute

Private Bag X5

Onderstepoort

0110

Tel.: (012) 5299158

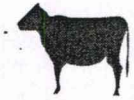
Fax: (012) 5299427

June 2000

Animal Health for Developing Farmers Programme

Livestock health problems can prevent small-scale farmers from achieving optimal agricultural production, and many communities have little or no access to veterinary services. This can result in reduced productivity, disease and death of livestock.

The Animal Health for Developing Farmers programme at the Onderstepoort Veterinary Institute commenced in April 1998 with the specific aim of developing appropriate and relevant information modules on animal health at a suitable level for small-scale farmers to empower them to better recognise, prevent and treat diseases in their livestock.



The information modules consist of posters, slide presentations, written and cartoon type pamphlet (translated into all relevant languages) and electronic information modules. They are designed to be delivered by those doing extension work with small-scale farmers (government, NGOs, educational and research institutes, private sector, commodity organisations, farmer unions).

For further information, please phone (012) 5299158

Slide sets

Slide sets consist of a folder containing numbered and labeled slides, instructions on how to use that particular series and an information leaflet which can be duplicated for distribution (at present in English only, but in the future these should be available in all major languages).

Allow a month for delivery after order.

Slide sets available:

1. African swine fever (M)
2. Are my chickens healthy (M)
3. Are my pigs healthy (M)
4. Brucellosis and Tuberculosis (M)
5. Clostridial diseases of ruminants (M)
6. Common diseases of cattle (L)
7. Common diseases of chickens (L)
8. Common diseases of pigs (M)
9. Common diseases of sheep and goats (L)
10. Community tick control (S)
11. Condition scoring (M)
12. External parasites of cattle (M)
13. External parasites of goats and sheep (M)
14. Foot and mouth disease/Lets work together to control foot and mouth (M)
15. Is my animal healthy? (cattle, sheep and goats) (L)
16. Mastitis (L)
17. Methods of tick control in cattle (S)
18. My cow is unable to stand up (M)
19. Newcastle disease (S)
20. Rabies (M)
21. Sheep scab (S)
22. Skin conditions in goat and sheep (M)
23. Skin conditions in pigs (L)
24. Tick life cycle (S)
25. Tick-borne diseases (L)
26. Tissue parasites - meat (M)
27. Tissue parasites - organs (M)
28. Udder and teat lesions (M)
29. What is the difference between vaccination and treatment (M)
30. Why are ticks important? (M)
31. Why did my animal die? (L)
32. Worms in your goats, sheep and cattle (L)
33. Zoonotic diseases (L)

* (L) = Large set * (M) = Medium set * (S) = Small set

Prices of the slides are:

	Price (excl. VAT)	VAT	Price (incl. VAT)
Small set	150,00	21,00	171,00
Medium set	210,00	29,40	239,40
Large set	285,00	39,90	324,90

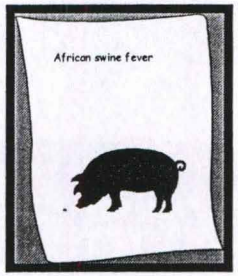
Discount prices: Order of 10 or more sets of a specific series
Less 10%

	Price (excl. VAT)	VAT	Price (incl. VAT)
Small set	135,00	18,90	153,90
Medium set	189,00	26,46	215,46
Large set	256,50	35,91	292,41

More technical posters used in training courses for AHTs and veterinarians are also available

The topics covered are:

African swine fever (*only available in A2* - same price as above)
Newcastle disease (*only available in A2* - same price as above)



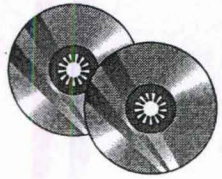
Electronic information

The information modules are also available in an electronic format, to be used on CD Roms and the Internet. These can be purchased as CDs.

Topics presently available as CDs are:

1. Is my animal healthy?
2. Tick-borne diseases
3. Common diseases of small pig herds
4. Rabies

5. Are my chickens healthy?
6. Brucellosis and tuberculosis
7. Newcastle Diseases
8. Poultry Diseases
9. What is the difference between vaccination and treatment?
10. Zoonotic diseases



R150,00 each VAT included

The above prices do not include packaging, transport or postage

Posters

The posters are available in English, and 2 sizes can be ordered (except where otherwise indicated)

A1 (594 mm x 840 mm)
A2 (420 mm x 594 mm)
They can also be ordered unlaminated or laminated.
If posters are required in different languages or sizes, this can be arranged on discussion.

Posters available or soon to be available

1. Acaricide resistance (only available in A2)
2. African horse sickness (only available in A2)
3. African swine fever - farmer (only available in A2)
4. Brucellosis (only available in A2)
5. Clostridial diseases
6. Condition scoring
7. Common diseases of small-scale broilers
8. Community medicine stores
9. Community tick control
10. External parasites of cattle
11. External parasites of goats and sheep
12. Foot and mouth disease
13. Frequency of tick control in cattle (only available in A2)
14. How should medicines be used
15. Important Vet. procedures in pigs (injection and tail docking) (only available in A2)
16. Important Vet. procedures in sheep and goats (identification) (only available in A2)
17. Important Vet. procedures in sheep and goats (castration) (only availabe in A2)
18. Important Vet. procedures in sheep and goats (foot/claw) (only available in A2)
19. Important Vet. procedures in sheep and goats (injection) (only available in A2)
20. Important Vet. procedures in pigs (identification) (only available in A2)
21. Lets work together to control foot and mouth disease
22. Mastitis
23. Methods of tick control in cattle
24. My cow is unable to stand up
25. Newcastle disease - farmer (only available in A2)
26. Parasitic cysts and lesions that occur in meat
27. Parasitic cysts and lesions that occur in organs
28. Sheep scab (only available in A2)
29. Skin conditions in pigs
30. Skin conditions in goats and sheep
31. Tick life cycle (only available in A2)
32. Tick-borne diseases in cattle, goats and sheep
33. Tuberculosis (only available in A2)
34. Udder and teat lesions
35. What is the difference between vaccination and treatment
36. Why are ticks important
37. Worms in your goats, sheep and cattle
38. Zoonotic diseases (diseases spread by bites): Rabies
39. Zoonotic diseases (diseases spread by eating infected meat and drinking infected milk)
40. Zoonotic diseases (diseases spread by handling infected animals)

The prices of the posters are:

	Price (excl. VAT)	VAT	Price (incl. VAT)
A2 Unlaminated	40,00	5,60	45,60
A2 Laminated	60,00	8,40	68,40
A1 Unlaminated	60,00	8,40	68,40
A1 Laminated	100,00	14,00	114,00

Discount prices: Order of 10 to 19 posters of a specific series
Less 5%

	Price (excl. VAT)	VAT	Price (incl. VAT)
A2 Unlaminated	38,00	5,32	43,32
A2 Laminated	57,00	7,98	64,98
A1 Unlaminated	57,00	7,98	64,98
A1 Laminated	95,00	13,30	108,30

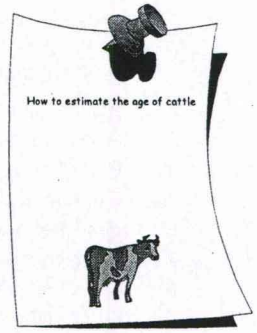
Discount prices: Orders of 20 and more posters of a specific series
Less 10%

	Price (exl. VAT)	VAT	Price (Inc. VAT)
A2 Unlaminated	36,00	5,04	41,04
A2 Laminated	54,00	7,56	61,56
A1 Unlaminated	54,00	7,56	61,56
A1 Laminated	90,00	12,60	102,60

Information brochures (Infopaks)

Information brochures have been developed in conjunction with the Directorate of Agricultural Communication and are available free of charge directly from them*. These will eventually be available in all major languages.

The topics presently available are:



1. Is my animal healthy? (cattle, goats and sheep) (**E, A, Z, X)
2. Tick-borne diseases in ruminants
3. Rabies
4. How to determine the age of goats and sheep
5. How to determine the age of cattle
6. Condition scoring of cattle
7. What is the difference between vaccination and treatment?
8. Zoonotic diseases
9. Newcastle disease
10. Causes of disease in animals
11. Parasitic cysts and lesions in organs
12. Are my chickens healthy?
13. My cow is unable to stand up

---

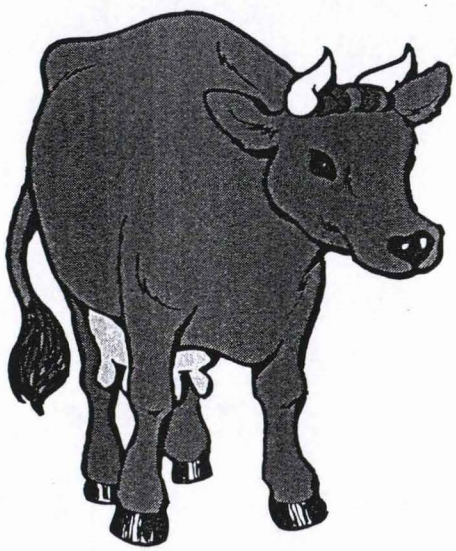
* Private Bag X144,
Pretoria
0001
Tel (012) 319 7141

**E = English A = Afrikaans Z = Zulu X = Xhosa

DEPARTMENT: AGRICULTURE

Brucellosis and tuberculosis

A.J. Olivier



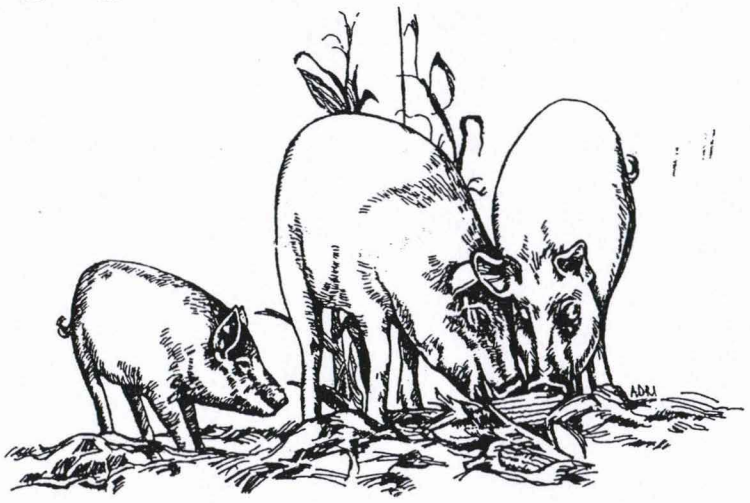
Directorate Communication ——— National Department of Agriculture

Zoonotic diseases

Jenny Turton

DEPARTMENT: AGRICULTURE

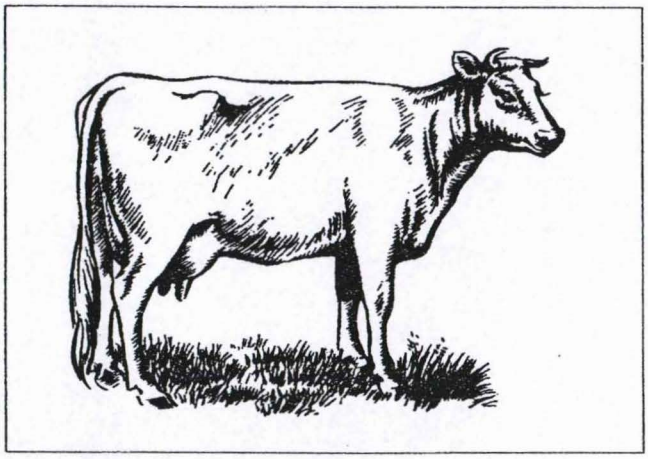
Common diseases of small pig herds



M-L Penrith

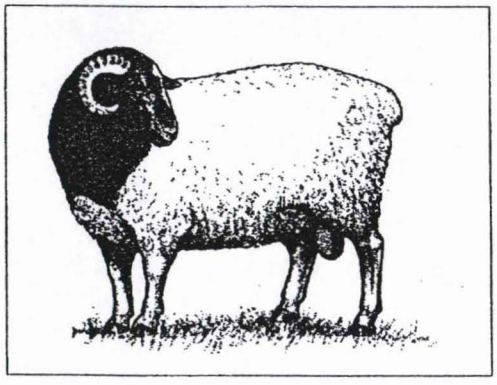
National Department of Agriculture
ARC–Onderstepoort Veterinary Institute

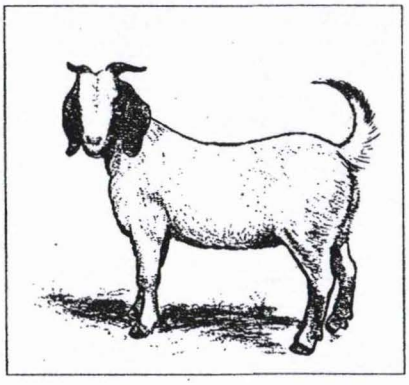
ARC • LNR

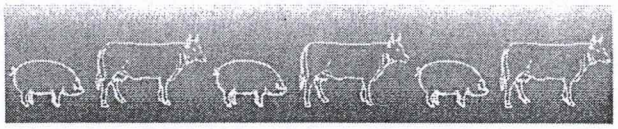


TICK-BORNE DISEASES IN RUMINANTS

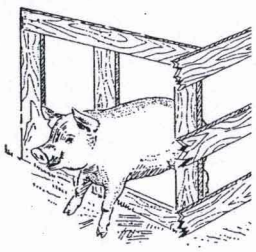
Compiled by Jenny Turton



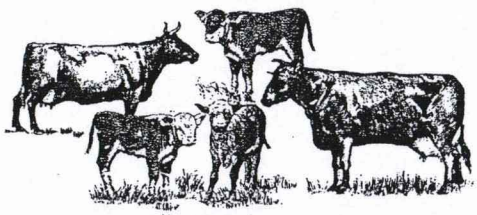




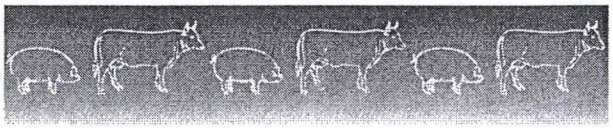
Department: Agriculture
Directorate Veterinary Services
and ARC–Onderstepoort
Veterinary Institute



Foot-and-mouth disease



S. Y. Mangera



ANNEXE 4

OIE

Situtation zoosanitaire
Afrique du Sud

Année 2000

SOUTH AFRICA

I. NEW ACTIVITIES OF THE VETERINARY SERVICES

The main objectives of veterinary services in South Africa are to control and prevent notifiable and zoonotic diseases in order to promote human and animal health.

Some new activities of the South African Veterinary Services include:

1. Residue Monitoring Program of the National Department of Agriculture for fresh meat was completely redesigned in order to streamline data capturing. Data generated during previous programs was processed by hand, but the scope and size of the program has become too large to allow for manual data capturing. The first results from the new computerised system should be available by mid 2001.
2. The Meat Safety Act (No. 40 of 2000) was passed and promulgated during the year. This Act replaces the Abattoir Hygiene Act (No. 121 of 1992). The Meat Safety Act complies with the constitutional requirements of having a Provincial Veterinary Services competent on abattoir matters, and makes provision for the National Directorate of Veterinary Services to control all meat imports and to certify fresh meat for export from specific abattoirs.
3. Amendments were made to the Regulations of the Animal Diseases Act (No. 35 of 1984). These include compulsory Newcastle disease vaccination of all chickens, racing pigeons and domesticated ostriches, and compulsory rabies vaccination of all dogs and cats throughout the country.
4. Various import and export protocols for animals and animal products were negotiated between a number of countries during the reporting period, as well as the undertaking of numerous visits to other countries by Veterinary Services officials.
5. The mammoth task of developing a new web site for the South African Veterinary Services is in the final stage of development and at the brink of publication under the coverage of the web site of the National Department of Agriculture. This initiative is expected to improve client access and information distribution considerably, thereby alleviating the workload on a very overburdened staff component.
6. After a very successful introduction of the Meat Inspectors Manual for red meat, an Afrikaans version was released and a revised manual for poultry meat (English and Afrikaans) will be released early in 2001. A Meat Inspectors Manual for Ostrich meat was released and distributed.

II. COMMENTS ON SELECTED LIST A DISEASES

Due to the higher than average rainfall in many parts of the country, there was an increase in vector-borne diseases. There were increased reports of lumpy skin disease, bluetongue and African horse sickness. No outbreaks of African swine fever or Rift Valley fever were reported.

Comments on selected diseases

1. Foot and mouth disease

   Foot and mouth disease (FMD) is a controlled disease in South Africa. It is found in the Kruger National Park (KNP) and surrounding game reserves, which is a declared FMD controlled area. Before the outbreaks of FMD in South Africa in 2000, the rest of South Africa was an FMD free zone without vaccination (declared by the OIE in 1995). The last outbreak of FMD, prior to 2000, in the free zone was in 1957.

South Africa had a total of four FMD outbreaks during the year. Two of the outbreaks occurred in the traditional FMD control area of the country. The other two outbreaks occurred in the FMD-free zone; one in KwaZulu-Natal province and one in Mpumalanga province.

Outbreak in KwaZulu-Natal Province (September 2000)[1]

On 15 September 2000, the initial outbreak of FMD was confirmed in pigs at a farm in the Camperdown magisterial district. Infected animals were confirmed positive on two adjacent farms in that vicinity. The virus was serotyped by the Exotic Disease Laboratory Onderstepoort Veterinary Institute, Agricultural Research Council (ED-OVI-ARC) in Pretoria as serotype O, which is an exotic strain to South Africa. All laboratory diagnosis for exotic diseases is done at this OVI ARC Veterinary Laboratory. It is thought that the virus was introduced into South Africa via pig swill from a passing ship, obtained by the farmer at the Durban harbour. An immediate stamping out program was instituted and all cloven-hoofed animals within a 3-km zone around the outbreak were culled in order to create a buffer zone. A 10-km quarantine area and a further 20-km surveillance zone was declared, as well as a controlled area that included 16 magisterial districts in KwaZulu-Natal.

Outbreak in Mpumalanga Province (Middelburg and Nkomazi)[2]

A diagnosis of FMD was made on 30 November 2000 in cattle at a feedlot in the Middelburg district in Mpumalanga Province. This outbreak was serotyped and sequenced at the Exotic Disease Laboratory Onderstepoort Veterinary Institute, Agricultural Research Council (ED-OVI-ARC), as SAT 1 virus originating from the southern part of the KNP. Trace back investigations from the feedlot infection revealed that the disease had originated in the Nkomazi area, between the southern borders of the KNP and the north-east border of Swaziland. The feedlot in Middelburg was a very isolated location, which made containment of the disease easier than in KwaZulu-Natal. The Nkomazi area, however, was also largely communal. This area is within the traditional FMD control area of South Africa, which also made containment of the disease easier.

Detection of FMD viral activity (virus serotype SAT 1) in buffalo calves in the FMD control area (end August 2000)[3]

On 29 August, 2000, a suspicion of viral activity for FMD virus was detected from serological results taken from buffalo calves and their surrogate Jersey cow mothers on a farm within the FMD enzootic/ red line zone of the FMD-control area, adjoining the KNP (±15 km from the KNP fence).

III. COMMENTS ON SELECTED LIST B DISEASES

The high rainfall in most parts of the country and the accompanying hot weather experienced, created ideal conditions for the increase in ticks and insects, and therefore a resultant increase in tick and insect-borne diseases. There were increased reports of heartwater, bovine babesiosis and anaplasmosis.

The official Government eradication schemes for bovine tuberculosis and bovine brucellosis continued.

Bovine tuberculosis has been found to occur in African buffalo (*Syncerus caffer*) in the southern and central parts of the KNP, as has been reported in previous reports. During the year, bovine tuberculosis was diagnosed in a wild spotted hyena (*Crocuta crocuta*) in the KNP, for the first time.

---

1 See *Disease Information*, **13** (37), 164, dated 22 September 2000; **13** (38), 170, dated 29 September 2000; **13** (39), 177, dated 6 October 2000; **13** (40), 183, dated 13 October 2000; **13** (41), 186, dated 20 October 2000; **13** (42), 188, dated 27 October 2000; **13** (49), 230, dated 15 December 2000; **14** (2), 9, dated 12 January 2001.

2 See *Disease Information*, **13** (48), 221, dated 8 December 2000; **13** (49), 229, dated 15 December 2000; **13** (50), 236, dated 22 December 2000; **14** (2), 9, dated 12 January 2001.

3 See *Disease Information*, **13** (36), 159, dated 15 September 2000.

	Population	Establishments
Cattle	10,353,750	...
Buffaloes	...	...
Sheep	21,512,681	...
Goats	6,279,299	...
Equidae	424,500	...
Camelidae	...	...
Cervidae	...	...
Swine	1,083,041	...
Birds	...	...
Rabbits/hares	...	...

	Production (kg)	Establishments
Fish	...	...
Molluscs	...	...
Crustaceans	...	...

	Hives	Apiaries
Bees	...	...

LIST A AND B DISEASES	OCCUR.	SPE	Number of			CONTROL	Number of animals			Note
			Outbreaks	Cases	Deaths	MEASURES	Destroyed	Slaughtered	Vaccinated	No
LIST A DISEASES										
Foot and mouth disease	+()	bov	3	1,031	0	* Cr M Qf Qi S Su Te V Z	1,051		150,762	1
virus : SAT 1, O		buf	0	0	0	* Cr Qf Qi Su Te Z				2
		ovi	0	0	0	* Cr Qf Qi S Su V Z			3,718	3
		cap	0	0	0	* Cr Qf Qi S Su V Z			1,007	4
		sui	1	247	83	* Cr Qf Qi S Su V Z	1,694		48,376	5
		fau	0	0	0	* Cr Qf Qi Su Z				
Vesicular stomatitis	0000	bov				* Qf S Su				
Swine vesicular disease	0000	sui				* Qf S Su				
Rinderpest	(1904)	bov				* Qf S Su				
Peste des petits ruminants	0000	ovi				* Qf S Su				
Contagious bov. pleuropneumonia	(1924)	bov				* Qf S Su				
Lumpy skin disease	+	bov	587	4,818	156	* V			38,958	
Rift Valley fever	(01/1999)									
Bluetongue	+	ovi	95	1,681	617	* V			...	
		bov	2	4	0	*				
		cap	1	6	0	* V			...	
Sheep pox and goat pox	0000	ovi				* Qf S Su				
African horse sickness	+	equ	186	353	178	* M Qi Su V Z			...	6
African swine fever	(12/1998)	sui				* Cn Cr M Qf Qi S Su				
Classical swine fever	(1918)	sui				* Qf S Su				
Highly path. avian influenza	0000	avi				* Qf S Su				
Newcastle disease	+	avi	9	51,398	9,285	* Qf Qi Sp V	101,000		...	
LIST B DISEASES										
Multiple species										
Anthrax	+	cap	1	4	4	* M Qi V			...	
		fau	2	5	5	* M Qi V			...	7
Aujeszky's disease	0000	sui				* Qf S Su				
Echinococcosis/hydatidosis	+	bov	...	...	...					
		o/c	...	...	...					
		sui	...	...	...					
		equ	...	...	...					
Heartwater	+()	bov	...	...	...	V			...	
		o/c	...	...	...	V			...	
Leptospirosis	+	bov	...	...	...					
		sui	...	...	...					
		equ	...	...	...					
		o/c	...	...	...					
Q fever	+	bov	...	...	...					
		o/c	...	...	...					
Rabies	+	bov	62	75	63	* Sp V	12		...	
		ovi	3	5	5	* V			...	
		cap	2	3	2	* Sp V	1		...	
		equ	3	6	3	* Sp V	3		...	
		can	178	204	92	* Qf Qi Sp V	123		...	
		fel	9	9	6	* Sp V	14		...	
		fau	113	113	113	* Sp				8
Paratuberculosis	+()	bov	0	0	0	* M Qf Qi Sp				
		ovi	1	13	5	* M Qf Qi Sp	6			
		cap	0	0	0	* M Qf Qi Sp				
N. w. screwworm (*C. hominivorax*)	0000	bov				* Qf Su				
O. w. screwworm (*C. bezziana*)	+	bov	...	...	...					
Cattle										
Bovine anaplasmosis	+()	bov	...	...	...	V			...	9
Bovine babesiosis	+()	bov	...	...	...	V			...	10
Bovine brucellosis	+	bov	323	4,663	0	* Qf Qi Sp Te V		1,443	...	11
Bov. genital campylobacteriosis	+	bov	...	...	...	V			...	12
Bovine tuberculosis	+	bov	10	174	0	* Qf Qi Sp Te		181		
		buf	...	...	...	* Cr M Qf Qi Sp Su				13
Bovine cysticercosis	+	bov	...	...	...					
Dermatophilosis	+	bov	...	...	...					
Enzootic bovine leukosis	+	bov	...	...	...					
Haemorrhagic septicaemia	+	bov	...	...	...					
Inf.bov.rhinotracheit. (IBR/IPV)	+	bov	...	...	...					
Theileriosis	+()	bov	2	140	128	* Cn Cr M Qf Qi Sp		10		14
Trichomonosis	+	bov	...	...	...					
Trypanosomosis (tsetse-transmitted)	+	bov	...	...	...	* Cn M Qf				15
Malignant catarrhal fever	+	bov	...	...	...					
Bovine spongiform encephalopathy	0000	bov				* Qf S Su				
Sheep and goats										
Ovine epididymitis (*B. ovis*)	+	ovi	...	...	...	V			...	
Cap/ovi brucel. (not *B. ovis*)	(1999)	ovi				* Qf Qi S Te Vp				
Caprine arthritis/encephalitis	0000	cap				* Qf S Su				
Contagious agalactia	0000	o/c				* Qf S Su				
Contagious cap. pleuropneumonia	0000	cap				* Qf S Su				
Enzootic abortion (chlamydiosis)	+	o/c	...	...	...	V			...	16
Ovine pulmonary adenomatosis	+	ovi	...	...	...					

...

LIST A AND B DISEASES	OCCUR.	SPE	Number of			CONTROL	Number of animals			No
			Outbreaks	Cases	Deaths	MEASURES	Destroyed	Slaughtered	Vaccinated	N
Sheep and goats (contd)										
Nairobi sheep disease	0000	ovi				* Qf S Su				
Salmonellosis (*S.* abortusovis)	0000	ovi				* Qf S Su				
Scrapie	(1972)	o/c				* Qf S Su				
Maedi-visna	+	ovi	...	...	...					
Equidae										
Contagious equine metritis	0000	equ				* Qf S Su				
Dourine	+	equ	18	46	0	* Qf Sp Su	4			
Epizootic lymphangitis	+	equ	...	...	...					
Encephalomyelitis (East. and W.)	0000	equ				* Qf S Su				
Equine infectious anaemia	(1955)	equ				* Qf S Su				
Equine influenza	+	equ	...	...	...	V			...	
Equine piroplasmosis	+	equ	...	...	...					
Equine rhinopneumonitis	+	equ	...	...	...					
Glanders	(1945)	equ				* Qf S Su				
Horse pox	-									
Equine viral arteritis	+?()	equ				* Qf Vp				
Japanese encephalitis	0000	equ				* Qf S Su				
Horse mange	+	equ	...	...	...					
Surra (*Trypanosoma evansi*)	0000	equ				* Qf S Su				
Venezuelan equ.encephalomyelitis	0000	equ				* Qf S Su				
Swine										
Atrophic rhinitis of swine	+	sui	...	...	...					
Porcine cysticercosis	+	sui	...	...	...					
Porcine brucellosis	0000	sui				* Qf S Su				
Transmissible gastroenteritis	0000	sui				* Qf S Su				
Enterovirus encephalomyelitis	0000	sui				* Qf S Su				
Reproductive/respiratory syndr.	0000	sui				* Qf S Su				
Birds										
Avian infectious bronchitis	+	avi	...	...	...	V			...	17
Avian infect. laryngotracheitis	+	avi	...	...	...	V			...	18
Avian tuberculosis	+	avi	...	...	...					
Duck virus hepatitis	0000	avi				* Qf S Su				
Duck virus enteritis	0000	avi				* Qf S Su				
Fowl cholera	+	avi	...	...	...	V			...	
Fowl pox	+	avi	...	...	...	V			...	19
Infec bursal disease (Gumboro)	+	avi	...	...	...					20
Marek's disease	+	avi	...	...	...	V			...	21
Mycoplasmosis (*M. gallisepticum*)	+	avi	...	...	...					
Avian chlamydiosis	+	avi	...	...	...					
Pullorum disease	-									
Lagomorphs										
Myxomatosis	0000	lep				* Qf S Su				
Tularemia	0000	lep				* Qf S Su				
Rabbit haemorrhagic disease	0000	lep				* Qf S Su				
Fish										
Viral haemorrhagic septicaemia	0000	pis				* Qf				
Spring viraemia of carp	0000	pis				* Qf				
Infect. haematopoietic necrosis	0000	pis				* Qf Su				
Bees										
Acariosis of bees	0000	api				* Qf				
American foulbrood	0000	api				* Qf				
European foulbrood	0000	api				* Qf				
Nosemosis of bees	0000	api				* Qf				

The OIE has no information on List A and B diseases not included in the above table

Notes

1. **Foot and mouth disease (bov)**: 2 of the outbreaks occurred in the traditional FMD controlled area around the Kruger National Park. The other outbreak occurred at a feedlot in the Mpumalanga Province. Vaccination was used for control. Stamping out was used in cases in KwaZulu-Natal Province (see note for sui).
2. **Foot and mouth disease (buf)**: buf = African buffalo.
3. **Foot and mouth disease (ovi)**: 1247 animals were vaccinated with FMD serotype 0 as part of the control of the FMD outbreak that occurred in KwaZulu-Natal. 2471 animals were vaccinated as a control measure for the outbreak that occurred in Mpumalanga Province.
4. **Foot and mouth disease (cap)**: animals that were vaccinated with FMD serotype 0 as part of the control of the FMD outbreak that occurred in KwaZulu-Natal.
5. **Foot and mouth disease (sui)**: this was an outbreak of FMD serotype 0, which occurred in KwaZulu-Natal in September. This is the first time that this serotype has occurred in South Africa. The vaccinations were part of the FMD control measures for the outbreak in Mpumalanga (SAT 1)
6. **African horse sickness**: Zoning: the Western Cape Province is a declared control zone. The Cape Town Metropolitan Area is an African horse sickness-free zone.
7. **Anthrax**: 1 outbreak in wild antelope in the Western Cape Province and one in a cheetah in Northern Province.
8. **Rabies**: fau=36 yellow mongoose; 14 black backed jackal; 25 bat-eared fox; 38 cases in other wild species.
9. **Bovine anaplasmosis**: unofficial vaccination.
10. **Bovine babesiosis**: unofficial vaccination.
11. **Bovine brucellosis**: there is an official Government eradication scheme for bovine brucellosis.
12. **Bov. genital campylobacteriosis**: unofficial vaccination
13. **Bovine tuberculosis**: buf = African buffalo. The disease is endemic in the Kruger National Park (KNP) and Hluhluwe-Umfolozi National Park in KwaZulu-Natal Province. Bovine tuberculosis was also reported in a lion (private game reserve in Mpumalanga Province) and a wild spotted hyena in the KNP.
14. **Theileriosis**: *Theileria parva lawrencei* outbreaks (Corridor disease).The Kruger National Park & surrounding areas, and the north eastern parts of KwaZulu-Natal Province are the only enzootic areas of Corridor disease.Other benign Theileriosis occurs throughout South Africa.
15. **Trypanosomosis (tsetse-transmitted)**: no outbreaks were reported for this period, but the disease is known to occur in the northern parts of KwaZulu-Natal.
16. **Enzootic abortion (chlamydiosis)**: unofficial vaccination
17. **Avian infectious bronchitis**: commercial broilers, layers and breeders are vaccinated.
18. **Avian infect. laryngotracheitis**: commercial layers and breeders are vaccinated.

tes (contd)

Fowl pox: commercial layers and breeders are vaccinated.

Infec bursal disease (Gumboro): commercial broilers, replacement pullets and breeders are vaccinated.

Marek's disease: commercial layers and breeders are vaccinated.

FIÈVRE APHTEUSE EN AFRIQUE DU SUD
Virus SAT 2 dans la zone de contrôle traditionnelle (rapport de suivi n° 1)

Voir aussi : 9 mars 2001, 9 mars 2001, 9 février 2001, 12 janvier 2001, 12 janvier 2001, 22 décembre 2000, 15 décembre 2000, 15 décembre 2000, 8 décembre 2000, 27 octobre 2000, 13 octobre 2000, 6 octobre 2000, 29 septembre 2000, 22 septembre 2000, 15 septembre 2000

Traduction d'un courrier électronique reçu le 8 mars 2001 du Docteur Emily Mmamakgaba Mogajane, directrice de la production agricole, département national de l'agriculture, Pretoria :

Terme du rapport précédent : 6 février 2001 (voir *Informations sanitaires*, **14** [6], 29, du 9 février 2001).

Terme du présent rapport : 7 mars 2001.

La fièvre aphteuse dans la Province du Nord semble être maîtrisée.

Des barrages routiers ont été mis en place le 5 février 2001. Ces barrages sont tenus par des fonctionnaires de la police sud-africaine, de l'armée sud-africaine, de la gendarmerie et des services vétérinaires du département national de l'agriculture.

La vaccination des bovins et les opérations de surveillance dans les districts de Mhala et de Mapulaneng ont débuté le 5 février 2001. La vaccination de rappel a débuté le 5 mars 2001. La vaccination des animaux appartenant aux autres espèces sensibles a débuté le 19 février 2001.

Données concernant la vaccination au 28 février 2001 :

	Bovins	Autres espèces sensibles
Nombre d'animaux vaccinés	76 983	16 919

Données concernant les opérations de surveillance au 28 février 2001 :

	Bovins	Autres espèces sensibles
Animaux inspectés	144 276	11 549
Bains détiqueurs inspectés	292	101

Les districts de Mhala, Mapulaneng et une partie de Pilgrim's Rest 2 ont été déclarés "zone de quarantaine". Une zone de surveillance de 10 km de large entoure cette zone de quarantaine. Ces districts se trouvent dans la zone de contrôle de la fièvre aphteuse.

PESTE ÉQUINE EN AFRIQUE DU SUD
Reprise des exportations d'équidés à partir de la zone indemne

Voir aussi : 26 mai 2000, 24 mars 2000, 25 février 2000

Traduction d'une télécopie reçue le 18 mai 2001 de la Docteure Emily Mmamakgaba Mogajane, directrice de la production agricole, département national de l'agriculture, Pretoria :

Date du rapport : 17 mai 2001.

Etant donné qu'aucun cas de peste équine n'a été épidémiologiquement mis en évidence au cours des deux dernières années dans la zone indemne et la zone de surveillance de la peste équine, situées dans la province de Western Cape(1), et étant donné qu'aucune vaccination systématique n'a été appliquée dans ces zones depuis plus de 12 mois, la décision de suspendre les exportations d'équidés, qui dépendaient de l'intégrité de la zone indemne, a été rapportée.

(1) Pour plus d'informations sur le zonage de la peste équine en Afrique du Sud, voir *Bulletin* de l'OIE, vol. 112, n° 2, p. 148.

ANNEXE 5

Annexe 5 - A : Déroulement de la mission

Annexe 5 - B : Personnes rencontrées

ANNEXE 5 - A

DÉROULEMENT DE LA MISSION EN AFRIQUE DU SUD

Dimanche 1er Juillet 2001

- Après-midi :
  - Vol international Moroni (RFI Comores)/Johannesbourg
  - Arrivée à l'aéroport de Johannesbourg en fin d'après-midi et accueil par J-P. LOYER (Représentant du CIRAD en Afrique du Sud)
  - Transfert à l'hôtel à Pretoria

Lundi 2 Juillet 2001

- Matin :
  - Réunion de présentation de la mission et de travail au SCAC de Pretoria avec :
    - ✓ M. Pierre COLOMBIER, Conseiller de coopération,
    - ✓ M. J-Pierre GAY, Attaché de coopération.

- Après-midi :
  - Entretien au South African Bureau of Standards (SABS) à Pretoria avec M. Mike Mc NERNEY, Divisional Manager, Visite des laboratoires en présence de M. J-P. GAY.

Mardi 3 Juillet 2001 :

- Matin :
  - Réunion de travail à l'ARC-OVI d'Onderstepoort avec le Dr S.T. CORNELIUS, Directeur et ses collaborateurs en présence de M. J-P. GAY

- Après-midi :
  - Entretien à Pretoria avec le Dr G. BRÜCKNER, Directeur des services vétérinaires d'Afrique du Sud en présence de M. J-P. GAY,
  - Réunion de restitution au SCAC de Pretoria avec Mr P. COLOMBIER et M. J P. GAY

Mercredi 4 Juillet 2001 :

- Matin :
  - Transfert à l'aéroport de Johannesbourg par J-P. LOYER : vol international Johannesbourg/Maputo (Mozambique)

ANNEXE 5 - B

PERSONNES RENCONTRÉES

➢ **South African Bureau of Standards**

- M. Mike Mc NERNEY
  Divisional manager
  Scientific services
  1 Dr Lategan Road Groenkloof
  Private Bag X 191
  PRETORIA 0001
  South Africa
  Tel : (27) 12 428 60 17
  Fax : (27) 12 428 62 68
  Email : mcnernmj@sabs.co.za
  Website : www.sabs.co.za

➢ **Agricultural Research Council – Onderstepoort Veterinary Institute : ARC/OVI**

- Dr Steven T. CORNELIUS, Director
  Tel : (27) 12 529 91 01
  Fax : (27) 12 565 46 67
  Cell : (27) 082 781 6055
  Email : steven@moon.ovi.ac.za

- Dr P.T. POTGIETER, Deputy Director, Business Development

- Dr W. VOSLOO, Deputy Director, Exotic Diseases Division

- Dr B. DUMGU, Vaccine Production, Exotic Diseases Division
  Tel : (27) 12 529 95 11
  Fax : (27) 12 529 94 32
  Cell : (27) 082 784 1359
  Email : baty@saturn.ovi.ac.za

- Dr M.L. PENRITH, Diagnostics

- Dr B. ALLSOPP, Researcher
  Private Bag X 05
  ONDERSTEPOORT 0110
  South Africa
  Tel : (27) 12 529 91 11
  Fax : (27) 12 565 65 73
  Email : postmaster@moon.ovi.ac.za
  Website : www.ovi.ac.za

➢ **Department of Agriculture : Veterinary Services**

- Dr G. BRÜCKNER, Director
  Private Bag X 138
  PRETORIA 0001
  South Africa
  Tel : (27) 12 319 76 79
  Fax : (27) 12 329 72 18
  Cell : (27) 083 310 2587
  Email : dvs@nda.agric.za

➢ **Service de Coopération et d'Action Culturelle, Ambassade de France en Afrique du Sud**

- M. Pierre COLOMBIER, Conseiller de coopération et d'action culturelle
  Email : pierre.colombier@diplomatie.gouv.fr

- M. Patrick LEFORT, Attaché pour la science et la technologie
  Email : patrick.lefort@diplomatie.gouv.fr

- M. Jean-Pierre GAY, CIRAD-CA, Attaché de coopération
  SCAC-Ambassade de France
  795 George Avenue
  Arcadia 0083 - Po Box 290086
  Sunnyside 0132
  PRETORIA
  South Africa
  Tel : (27) 12 429 70 42/45
  Fax : (27) 12 429 70 47
  Cell : (27) 083 380 0598
  Email : jean-pierre.gay@cirad.fr ou jean-pierre.gay@diplomatie.gouv.fr

➢ **Représentation du CIRAD en Afrique du Sud**

- M. Jean-Paul LOYER, Représentant du CIRAD en Afrique du Sud
  AGRIBIS CC
  P.O. Box 70793
  BRYANSTON 2021
  South Africa
  Tel : (27) 11 706 77 83
  Fax : (27) 11 706 76 54
  Cell : (27) 082 950 2535
  Email : j-p.loyer@global.co.za