

CERTIFICATE OF ACCREDITATION

BOTSWANA NATIONAL VETERINARY LABORATORY

Disease of Animals' Act: 1966, Cap 37: 01

Facility Accreditation Number: VET 003

is a SADCAS accredited Testing Laboratory
provided that all SADCAS conditions are complied with

This certificate is valid as per the scope stated in the accompanying schedule of accreditation,
Annexure "A", bearing the above accreditation number for

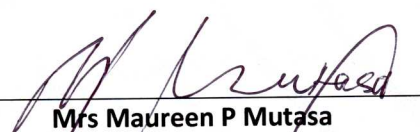
**MICROBIOLOGY, BACTERIOLOGY, VIROLOGY/SEROLOGY
HISTOPATHOLOGY, CHEMISTRY (BNVL)
VIROLOGY AND MOLECULAR BIOLOGY (BVI)**

The facility is accredited in accordance with the recognized International Standard

ISO/IEC 17025:2017

*The accreditation demonstrates technical competency for a defined scope and the operation
of a laboratory quality management system*

*SADCAS is a subsidiary organization of SADC. A memorandum of understanding between SADC and
SADCAS serves as the basis for the recognition of SADCAS by SADC Member States
as a multi-economy accreditation body*


Mrs Maureen P Mutasa

SADCAS Chief Executive Officer

Original date of Accreditation: 20 March 2018

Effective Date (Issue No: 2): 31 July 2020

Certificate Expires: 19 March 2023

ANNEXURE A

SCHEDULE OF ACCREDITATION

Laboratory Accreditation Number: **VET 003 (ISO/IEC 17025:2017)**

<u>Permanent Address of Laboratory</u> Botswana National Veterinary Laboratory Sebele Content Farm Off Gaborone-Francistown A1 Road Sebele Botswana <u>Site Laboratory</u> Botswana Vaccine Institute (BVI) Broadhurst Industrial Estate Plot 6385/50, Lejara Road, Gaborone Botswana <u>Postal Address</u> Private Bag 0035 Gaborone Tel : +267 392 8816 Fax : +267 392 8956 Cell : +267 7588 2846 Email : rmackenzie@gov.bw	<u>Technical Signatories</u> Ms B R Bogatsu (All Dairy Hygiene methods) Mr O M Moeng (All Dairy Hygiene methods) Mr P Tikologo (All Dairy Hygiene methods) Mr I O Bika (All Dairy Hygiene Methods) Ms O Sekaba (All Bacteriology methods) Ms M Bagali (Salmonella spp.) Mr J Ikopoleng (All Bacteriology methods) Mrs D Tladi (All Food Hygiene methods) Ms P Dinoge (All Food Hygiene methods except Salmonella BAX and Culturable Microorganisms) Ms K Kgwabi (All Food Hygiene methods except Culturable Microorganisms) Mrs K Kemoabe (All Food Hygiene methods except Salmonella BAX and Culturable Microorganisms) Ms L K Gasebonwe (All Food Hygiene methods except Salmonella BAX) Mrs G G Seadimo (All Water methods except Culturable Micro-organisms) Dr J N Golekanye (<i>E. coli</i> 0157 & Salmonella spp., Culturable Micro-organisms) Mr D Letuwe (Salmonella spp.) Ms G Modise (Histopathology) Mrs D Mokhukhu (Histopathology) Mr R Tshepho (Residues – Avermectins, Penicillins, Aflatoxins, Benzimidazoles, Antimicrobials, Quinolones) Mr S Mookantsa (Residues – Tetracyclines, Sedatives, Cadmium, Lead) Mrs K Gaolape (Residues – Quinolones, Penicillins, Lincomycin, Tetracyclines) Mrs O Kemokgatla (Residues - Chloramphenicol, Lincomycin, Arsenic, Antimicrobials) Mr P Kolanyane (Sulphonamides, Synthetic Hormones, Carbamates) Ms S Lentswe (Residues – Sulphonamides, Carbamates) Mr E Sewane (Residues - Antimicrobials, Aflatoxins, Chloramphenicol) Mr K Thitoyamore (Residues – Aflatoxins) Mrs O Balone (Residues – Synthetic Hormones) Mr P Kgothi (Lead, Cadmium) Ms J Kapo (Avermectins) Dr S Letsholo (Serology – New Castle Disease Virus, Avian Influenza) Mrs L Nwako (Serology – New Castle Disease, Avian Influenza) Mr K Dipuo (Serology – CBPP, Brucellosis –CFT, Brucellosis-RBPT) Mr E Dihoro (Serology – PPR) Dr G J Kesiametswe (Serology – FMD Prior Check kits) Mr M Palai (Serology – FMD Prior Check kits) Mrs L Mafoko (Serology – Dourine CFT) Mr K Mogwera (Serology – Dourine CFT) <u>Virology (BVI Site)</u> Mrs K Masoba (FMD ELISA, FMD-RT-PCR, FMD genome detection – RT-PCR) Mr E Fana (FMD- ELISA, FMD-RT-PCR, FMD genome detection – RT-PCR) Ms P Made (FMD- ELISA) <u>Nominated Representative</u> : Mr R Mackenzie <u>Issue No</u> : 03 <u>Date of Issue</u> : 31 July 2020 <u>Expiry Date</u> : 19 March 2023
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ANNEXURE A

Laboratory Accreditation No: VET 003 (ISO/IEC 17025:2017)

Issue No: 03

Date of Issue: 31 July 2020

Date of Expiry: 19 March 2023

MATERIALS/PRODUCTS TESTED	TYPES OF TESTS/PROPERTIES MEASURED, RANGE OF MEASUREMENT	STANDARD SPECIFICATIONS, EQUIPMENT/TECHNIQUES USED
<u>MICROBIOLOGY</u> Dairy Hygiene Milk and Milk products	Enumeration of Total Viable Microorganisms by Pour plate method Enumeration of Yeasts by Colony count technique Detection and enumeration of presumptive <i>Escherichia coli</i> by Most Probable Number Enumeration of Total Coliform organisms by Pour plate	BNVL/MS. WI 0035 DH (ISO 4833-1:2013) BNVL/MS. WI 0424 DH (ISO 6611:2004) BNVL/MS. WI 0315 DH (ISO 7251:2005) BNVL/MS. WI 0283 DH (ISO 4832:2006)
Food Hygiene Meat, Meat Products and Animal Feeding Stuffs	Detection and enumeration of coagulase-positive <i>Staphylococcus aureus</i> by spread plate method Enumeration of Total Viable Microorganisms by Pour plate method Detection and enumeration of Coliforms and <i>Escherichia coli</i> by Most Probable Number method Detection of <i>Escherichia coli</i> 0157 Detection of <i>Salmonella</i> spp. Detection and enumeration of Lactic acid bacteria by Colony count technique Detection and enumeration of Enterobacteriaceae by Colony count technique Detection and enumeration of Enterococcus (Fecal streptococcus) by Colony count technique Detection and enumeration of <i>Clostridium perfringens</i> by Colony count technique Screening of <i>Salmonella</i> spp. using BAX System	BNVL/MS. WI 0005 FHS (ISO 6888-1:2003) BNVL/MS. WI 0006 FHS (ISO 4833:2003) BNVL/MS. WI 0008 FHS (ISO 4831:2006) BNVL/MS. WI 0015 FHS (ISO 16654:2001) BNVL/MS. WI 0016 FHS (ISO 6579:2002) BNVL/MS. WI 0472 FHS (ISO 15214:1998) BNVL/MS. WI 0450 FHS (ISO 21528-2:2004) BNVL/MS. WI 0471 FHS (Oxoid Manual-1998) BNVL/MS. WI 0292 FHS (ISO 7937:2004) BNVL/MS. WI 0049 FHS
Treated Water	Detection and enumeration of <i>Clostridium perfringens</i> by Membrane Filtration method Detection of enumeration of <i>Escherichia coli</i> and Coliform bacteria by Membrane filtration method Detection and enumeration of Intestinal enterococci by Membrane filtration method Enumeration of Culturable Microorganisms by Colony Count	BNVL/MS. WI 0220 FHS (ISO 14189:2013) BNVL/MS. WI 0219 FHS (ISO 9308-1:2000) BNVL/MS. WI 0218 FHS (ISO 7899-2:2000)
<u>BACTERIOLOGY</u> Clinical samples, Animal Tissue, Faeces	Culture, isolation and identification of <i>Salmonella</i> spp. from clinical samples	BNVL/MS. WI 0550 BACT (OIE)
Blood	Microscopic identification of <i>Bacillus anthracis</i>	BNVL/MS. WI 0212 BACT (OIE)

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<u>HISTOPATHOLOGY</u>		
Animal Feed	Determination of constituents of animal origin for The official control of feed by Microscopy method	BNVL/MS. WI 0003 PATH
<u>VIROLOGY/SEROLOGY</u>		
Bovine Serum	Detection of Brucella antibodies by Complement Fixation Test	BNVL/MS. WI 0512 BACT
	Detection of Brucella antibodies by Rose Bengal Precipitate Test	BNVL/MS. WI 0510 BACT
Avian and Ostrich Serum	New Castle Disease (NDV) Virus, antibody screening and titration by HI test	BNVL/MS. WI 0210 VIRO
	Avian Influenza Virus, antibody screening and titration by HI test	BNVL/MS. WI 0282 VIRO
Bovine Serum	Detection of Contagious Bovine Pleuro-pneumonia (CBPP) antibodies by Compliment Fixation Test	BNVL/MS. WI 0165 BACT
Bovine and Caprine Serum	Detection of Antibodies against non-structural protein of Foot and Mouth Disease (FMD) Virus using Prio-Check Kits	BNVL/MS. WI 0781 SERO
Equine Serum	Complement Fixation Test - Dourine	BNVL/MS. WI 0395 PARA
Sheep and Goat serum	Detection of antibodies against Peste des Petits Ruminants (PPR) virus in sheep and goat serum and plasma by competitive ELISA (ID Screen PPR Competition	BNVL/MS. WI 0171 SERO
<u>CHEMISTRY (Residues)</u>		
Bovine liver tissue	Multiresidue analysis of Avermectins by HPLC-FLD	BNVL/MS. WI 0060 RES
Bovine muscle and milk	Analysis of Chloramphenicol by LC-ESI-MS/MS	BNVL/MS. WI 0785 RES
Bovine Kidney	Sulphonamides by LC-ESI-MS/MS	BNVL/MS. WI 0026 RES
	Multi-residue analysis of Penicillins by LC-ESI-MS/MS	BNVL/MS. WI 0017 RES
	Multiresidue analysis of Quinolones LC-ESI-MS/MS	BNVL/MS. WI 0020 RES
	Analysis of Tetracyclines by LC-ESI-MS/MS	BNVL/MS. WI 0030 RES
	Analysis of Lincomycin by LC-ESI-MS/MS	BNVL/MS. WI 0019RES
	Analysis of Sedatives by LC-ESI-MS/MS	BNVL/MS. WI 0029 RES
Feeds	Multi-residue analysis of Aflatoxins (B1, B2, G1, G2) HPLC-FLD	BNVL/MS. WI 0076 RES
Bovine liver tissue	Multi-residue analysis of Benzimidazoles by LC-ESI-MS/MS	BNVL/MS. WI 0031 RES
	Multi-residue analysis of Carbamates pesticides by LC-ESI-MS/MS)	BNVL/MS. WI 0025 RES
	Multi-residue analysis of Cadmium by FAAS	BNVL/MS. WI 0065 RES
	Multi-residue analysis of Lead by FAAS	BNVL/MS. WI 0090 RES

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<u>CHEMISTRY (Residues)</u>		
Urine	Multiresidue analysis of Synthetic Hormones (Stilbenes and Zeranol) by LC-ESI-MS/MS	BNVL/MS. WI 0793 RES
Water	Analysis of Arsenic by GFAAS	BNVL/MS. WI 0753 RES
Bovine Muscle	Antimicrobial screening by LC-ESI-MS/MS	BNVL/MS. WI 0820 RES
<u>BVI SITE</u>		
<u>VIROLOGY</u>		
Lamb kidney	Foot and Mouth Disease (FMD) virus isolation in primary cells and identification (serotyping) by Antigen ELISA	BNVL/MS. WI 0097 VIR-BVI
<u>MOLECULAR BIOLOGY</u>		
Lamb kidney	Foot and Mouth Disease (FMD) virus isolation in primary cells by RT-PCR and nucleotide sequencing	BNVL/MS. WI 0121 VIR-BVI
Probang swabs and tissue samples	Foot and Mouth Disease (FMD) Virus genome detection by RT-PCR and nucleotide sequencing	BNVL/MS. WI 0100 VIR-BVI

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Pinkie Malebe
SADCAS Technical Manager