

# ANNUAL PROGRESS REPORT

FY 2079/80



**Government of Nepal**  
**Ministry of Agriculture and Livestock Development**  
**Department of Livestock Services**  
**Foot & Mouth Disease & TADS Investigation Laboratory**  
**Chapali, Budhanilkanth, Kathmandu, Nepal**

## FMD and ASF Outbreak Investigation



Fig: FMD Outbreak Investigation Team at Morang



Fig: FMD Outbreak investigation at Okhaldhunga



Fig: Sample Collection from Buffalo



Fig: Sample collection from a Pig farm



Fig: ASF Outbreak investigation at Chitwan



Fig: ASF Outbreak investigation at Chitwan

# FOREWORD

It is my Great pleasure to publish this Annual Progress Report for the fiscal year 2079/080. This issue includes activities and progress report of Foot and Mouth Disease & TADs Investigation Laboratory, Budhanilkantha, Kathmandu.

As a reference laboratory for the Foot and Mouth Disease, Classical Swine Fever and Blue Tongue, the lab has been using ELISA diagnostic tests for FMDV Serotyping, FMD carrier status, FMD vaccine seromonitoring, Classical Swine Fever antigen and antibody detection and Blue Tongue sero-surveillance. Likewise, Molecular diagnosis of FMDV by Conventional Multiplex RT-PCR & Real Time Multiplex RT-PCR has been doing routinely in the laboratory.

I would like to express my sincere thanks to Dr. Nisha Poudel, Veterinary Officer for her hard work to prepare this bulletin. Similarly, my special thanks to all the staffs for their remarkable assistant and support to bring the report in this form.

Last but not least, I will be very happy to get any comments and suggestions for the improvement of the future publication.

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Some photo glimpses

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## 1. INTRODUCTION

The laboratory was established in 2040 B.S in the name of Foot and Mouth Disease (FMD) Control Laboratory. However, the name of office changed to National Foot and Mouth Disease and Transboundary Animal Diseases Laboratory (NFMD & TADs Lab) in 2061/62 B.S. From 2075/76 B.S., the laboratory is providing its service in the name of Foot and Mouth Diseases & Transboundary Animal Diseases Investigation Laboratory.

This lab has been serving as a National Reference Laboratory for the diagnosis of Foot and Mouth Disease, Classical Swine Fever and Blue Tongue in the country. The diagnosis of FMDV is conducted by serotyping of the tissue samples by Antigen ELISA, Conventional Multiplex RT-PCR and Real Time Multiplex RT- PCR. Likewise, FMD Antibodies Elisa Test for FMD vaccine Seromonitoring and FMD- NSP ELISA Test for FMD Sero-Surveillance are carried out in the lab. Similarly, the lab has also carried out the antigen ELISA test for Classical Swine Fever diagnosis and antibody ELISA for Classical Swine Fever vaccine Seromonitoring and also Sero-surveillance of Bluetongue disease by antibody ELISA Test.

Nepal has been participating in OIE/WOAH and SAARC Progressive Control Pathway for the control of FMD in the Regional level since 2012 AD. For this purpose, the lab has started carrier status surveillance from non-vaccinated animals of non- outbreak areas.

In fiscal year 2079/80, serotype O is predominantly circulating in 8 districts (100%). None of the tested samples were positive for other serotypes, out of 294 sample tested for FMD diagnosis.

This lab has also been participated in Proficiency Testing program conducted by World Reference Laboratory for Foot and Mouth Disease (WRLFMD), Pirbright, UK.

## 2. OBJECTIVES

Following are the major objectives of FMD & TADs Investigation Laboratory.

1. Act as a National Reference Laboratory for FMD, Classical Swine Fever, Blue Tongue and other TADs.
2. Provide technical support to Department of Livestock Services to develop policies, strategies and program for the control of FMD and TADs and eventual eradication of FMD and TADs.
3. Acquire, adopt, upgrade and establish different laboratory diagnostic methods for FMD, CSF & Blue Tongue
4. Conduct different laboratory tests to diagnose FMD virus serotypes.
5. Conduct Sero-Surveillance of FMD, Blue Tongue & CSF.
6. Create awareness to the public and farmers about FMD & TADs.

## 3. ANNUAL PROGRAM AND PROGRESS FY 2079/80

**Table 1: Annual Program and Progress of FMD & TADs Investigation Laboratory during FY 2079/80**

S.N.	Programs / Activities	Expenditure title	Unit	Annual target		Annual progress		
				Quantity	Weightage	Quantity	Weightage	
<b>A. Under the Capital Expenditure</b>								
11.1.2.618	Construction of 20000 liters drinking water tank for office	31112	number	1	2.91	1	2.89	
11.1.2.619	Construction of safety tank	31112	number	1	1.01	1	1.00	
11.1.2.621	Construction of 336 square feet generator house	31112	number	1	2.77	1	2.75	

S.N.	Programs / Activities	Expenditure title	Unit	Annual target		Annual progress	
				Quantity	Weightage	Quantity	Weightage
11.3.2.6	Purchase of scooter	31121	number	1	0.85	1	0.84
11.3.7.1234	Purchase and installation of PCR Strip Spinner 1, Vortex Mixer 3, Digital Weighing Machine 1 Microplate Mixer 1, Fire Extinguisher for fire safety 2	31122	number	8	0.65	7	0.53
11.3.8.23	Purchase and installation of CC camera	31122	number	1	0.3	1	0.24
11.3.11.747	Purchase of Gel documentation Dark Hood for Conventional RT-PCR Machine	31122	number	1	3.38	1	3.37
11.3.11.748	Purchase and installation of inverter and tubular battery for RT PCR machine	31122	number	1	0.42	1	0.42
11.3.11.749	Purchase and installation of inverter and tubular batteries for office computers, printers and photocopy machine	31122	number	1	0.85	1	0.85
11.3.11.750	Purchase of laptop for Elisa reader and PCR machine in laboratory	31122	number	2	0.68	2	0.67
11.3.11.751	Purchase of 3 in 1 printer for Elisa reader and PCR machine in laboratory	31122	number	2	0.3	2	0.27
11.3.11.752	Purchase and installation of AC for laboratory	31122	number	2	0.68	2	0.67
11.3.11.753	Purchase and installation of microcentrifuge machine	31122	number	1	1.69	1	0.92
11.3.11.754	Euro-guard (R/O plus UV filter) for water purification in the office	31122	number	1	0.24	1	0.24
11.3.11.755	Purchase of double door refrigerator for laboratory	31122	number	3	0.91	3	0.88
11.6.13.651	Purchase of furniture and furnishing (Revolving Chair 3, Office Table 3, Cupboard 3, Tea Table 3, Carpet Sofa-set 3, Steel Rack 3, Curtain etc.)	31123	number	18	1.34	18	1.34
11.4.16.40	Construction of well in office premises	31156	number	1	0.27	1	0.26
11.1.3.487	Construction and management of garden in office premises	31161	number	1	2.3	1	2.29
<b>Total of Capital Expenditure</b>				47	21.55	48	20.42
<b>B Under the Current Expenditure</b>							
1.1.1.100	Gazetted Class II	21111	Person	1	2.51	1	2.44
1.1.1.101	Gazetted Class III	21111	Person	3	6.63	2	6.40
1.1.1.117	Light driver Level-5	21111	Person	1	2.05	1	1.94
1.1.1.136	Non-Gazetted I Class (Technical)	21111	Person	2	3.62	2	3.60
1.1.1.137	Non-Gazetted II Class (Technical)	21111	Person	1	1.88	1	1.83
1.1.1.207	Non-Gazetted I Class (Admin/ Account)	21111	Person	1	1.86	1	1.79
1.1.1.208	Non-Gazetted II Class (Admin)	21111	Person	1	1.79	1	1.70
1.3.1.1	Dress cost for office Staffs	21121	Person	10	0.34	9	0.30
1.2.2.2	Expensive allowance	21132	Person	10	0.81	10	0.71
1.2.8.16	Infant care allowance	21139	number	2	0.03	0	0.00
1.2.10.4	Palo Pahara Meeting allowance	21139	number	4	0.16	0	0.00

S.N.	Programs / Activities	Expenditure title	Unit	Annual target		Annual progress	
				Quantity	Weightage	Quantity	Weightage
1.6.4.1	Expenditure on employee contribution-based insurance fund	21213	person	10	0.32	10	0.14
2.1.1.1	Water Cost Tariff	22111	number	4	0.1	6	0.10
2.1.2.1	Electricity Tariff	22111	number	4	3.08	5	3.08
2.1.3.1	Drinking water (Jar)	22111	jar	980	0.16	961	0.09
2.1.3.2	Tanker water	22111	number	12	0.08	12	0.08
2.1.6.11	Communication Tariff	22112	month	2	0.16	6	0.15
2.1.6.43	Telephone Cost	22112	number	2	0.1	2	0.10
2.1.7.2	Website update	22112	number	1	0.17	1	0.17
2.2.2.11	Petrol for Motorcycle	22212	liter	600	0.31	600	0.27
2.2.2.33	Mobil, brake oil, gear oil, etc. for vehicles	22212	liter	72	0.16	66	0.15
2.2.2.239	Fuel for Surveillance & Diseases Investigation	22212	liter	960	0.42	960	0.41
2.2.2.240	Diesel for collecting samples from FMD infected animals	22212	liter	948	0.42	952	0.37
2.2.2.315	Fuel for Staff/Official Purpose	22212	number	480	0.23	480	0.19
2.2.2.316	Fuel for four-wheelers (office purposes) to carry out seromonitoring sample collection program for testing efficacy of FMD and swine fever vaccine	22212	number	540	0.25	540	0.21
2.2.2.323	Fuel for monitoring and evaluation of FMD and TADs animal diseases and related programs at provincial and local levels	22212	number	480	0.23	480	0.21
2.3.1.5	Repair Motorcycle (Two wheel)	22213	number	6	0.2	5	0.17
2.3.1.11	Repair Vehicle	22213	number	2	1.35	5	1.21
2.9.2.8	Insurance & renew of vehicles	22214	number	5	0.34	5	0.28
2.3.2.98	Maintenance expenses (Computer/laptop, fax, photocopy, printer, telephone)	22221	number	4	0.27	4	0.24
2.3.2.199	Repair and maintenance of equipment and other materials used in Laboratory; Autoclave, Bio-safety cabinet, analyzers (maintenance and operating expenses of machinery and tools)	22221	number	3	0.3	2	0.28
2.3.2.249	Maintenance of -40°C and -80°C deep fridge (maintenance and operating expenses of machinery and tools)	22221	number	2	0.54	2	0.54
2.3.8.32	Maintenance and electrical wiring in office buildings	22231	number	1	1.12	1	0.88
2.3.9.306	Tiling and other repairs in the toilets of offices and residences.	22231	number	1	0.78	1	0.77
2.3.9.307	Laboratory Building Biosecurity Fence and Drainage Management	22231	number	1	1.72	1	1.70

S.N.	Programs / Activities	Expenditure title	Unit	Annual target		Annual progress	
				Quantity	Weightage	Quantity	Weightage
2.3.9.333	Repair, maintenance and painting of office buildings, premises and residential buildings	22231	number	1	2.03	1	2.02
2.4.1.4	Office stationery, toners and other supplies	22311	number	4	0.47	3	0.44
2.4.1.110	Expenses such as office supplies	22311	number	4	0.61	4	0.57
2.9.5.47	Feed for Lab Animals	22312	number	12	0.34	12	0.34
2.2.3.98	Fuel expenses in machinery tools, generators, grass cutters other than vehicles (office purposes)	22314	number	500	0.23	475	0.20
2.4.12.152	Printing of informative flex/ brochures/ pamphlets etc. regarding the investigation and sample collection for FMD &TADs.	22315	number	2	0.58	2	0.46
2.4.13.7	Purchase of newspapers and books	22315	number	4	0.1	4	0.08
2.4.13.35	Annual report publications	22315	number	1	0.14	1	0.11
2.4.14.3	Information publication expenses	22315	number	2	0.17	1	0.07
2.5.2.484	Calibration of laboratory equipment	22411	number	1	1.35	1	1.30
2.5.3.555	Laboratory equipment operation, routine maintenance, repair service contract	22411	number	4	0.27	0	0.00
2.5.3.588	Security guard service contract	22411	number	2	1.62	2	1.62
2.5.7.5	Cost of office dress for service contract employees	22413	number	2	0.07	2	0.07
2.5.7.20	Contract service for gardener	22413	person	1	0.2	1	0.19
2.5.7.91	Contract for office assistant	22413	person	2	1.75	2	1.71
2.5.7.222	Festive expenses for service contract employees (individual contract)	22413	number	2	0.15	2	0.15
2.5.8.9	Contract for office computer/ photocopy etc. machinery repair service	22413	person	1	0.14	1	0.00
2.5.8.126	Cleaning service contract	22413	person	1	0.2	1	0.13
2.6.1.398	FMD Real Time RT-PCR Diagnosis related one week training in OIE/FAO reference laboratory for FMD diagnosis.	22511	person	2	2.37	0	0.00
2.6.2.2	Employee driving training	22511	number	4	0.41	4	0.26
2.6.4.1073	3 days field level training for technician on quality sample collection, conservation, coding and dispatch of animal diseases	22512	number	2	0.95	1	0.34
2.6.4.1074	Interactive program related to investigation and control of FMD &TADs disease at provincial and local levels	22512	number	4	0.81	2	0.37
2.6.5.300	FMD related school education program	22512	number	4	0.27	2	0.12
2.7.18.1489	Prepare and distribution of Media kits	22522	number	600	0.51	500	0.13
2.7.25.1069	Health checkup for office staff	22522	number	12	0.2	3	0.02
2.7.25.1088	Purchase of Viral RNA Extraction Purification Minikit, 250 Test	22522	number	2	1.49	2	1.49

S.N.	Programs / Activities	Expenditure title	Unit	Annual target		Annual progress	
				Quantity	Weightage	Quantity	Weightage
2.7.25.1093	Examination of samples collected from vaccinated animals (seromonitoring) under the National FMD Control Program	22522	number	600	0.41	2619	0.37
2.7.25.1095	Sero-surveillance of FMD NSP carrier status under the National FMD Control Program	22522	number	800	0.41	960	0.25
2.7.25.1107	Purchase of ELISA kit for CSF(Ag)	22522	number	1	0.51	1	0.45
2.7.25.1119	Samples Preservation and send to OIE Reference lab	22522		1	0.51	1	0.00
2.7.25.1111	Samples Collection and Investigation of CSFV Disease	22522	number	150	0.14	44	0.13
2.7.25.1257	Purchase of FMD Virus Molecular Diagnosis Kit and Reagent	22522	number	2	1.12	2	0.89
2.7.25.1255	Purchase of FMD NSP ELISA Kit and Reagent	22522	number	3	1.83	3	1.83
2.7.25.1252	Purchase of FMD Sero-typing Reagent kit	22522	number	6	3.04	6	3.02
2.7.25.1260	Management and testing of ELISA kits required for testing samples collected from vaccinated animals (seromonitoring) under the National FMD Control Program	22522	number	3	1.62	3	1.62
2.7.25.1428	Purchase of Primer Probe Master Mix Reagent Kit for FMD Real-Time RT-PCR test	22522	number	2	1.35	2	1.35
2.7.25.1427	Investigation and sample collection of FMD outbreaks in sheep, goats and pigs	22522	number	120	0.24	223	0.24
2.7.25.1426	Investigation and sample collection of FMD outbreak in cattle	22522	number	120	0.24	71	0.00
2.7.25.1425	FMD surveillance and sample collection in domestic animals raised in the National Park Buffer Zone area	22522	number	200	0.2	213	0.2
2.7.25.1423	Risk-based FMD surveillance and sample collection	22522	number	300	0.3	322	0.23
2.7.25.1429	Purchase of probe master mix reagent for conventional RT PCR	22522	number	2	1.01	2	1.01
2.7.25.1422	FMD carrier status serosurveillance and sample collection of cattle, buffalo, sheep and goats	22522	number	300	0.3	368	0.30
2.7.25.1432	Surveillance, investigation, sample collection and laboratory testing of Swine fever disease in pigs	22522	number	150	0.17	110	0.17
2.7.25.1431	Examination of samples collected from vaccinated animals from other federal offices at the provincial level under the National FMD Disease Control Program (seromonitoring)	22522	number	600	0.41	1615	0.12

S.N.	Programs / Activities	Expenditure title	Unit	Annual target		Annual progress	
				Quantity	Weightage	Quantity	Weightage
2.7.25.1430	Purchase of reagent kit for differential diagnosis of FMD	22522	number	2	1.22	1	1.07
2.7.25.1433	Collection of samples from vaccinated animals under National Classical Swine Fever Disease Control Program (seromonitoring)	22522	number	150	0.17	381	0.00
2.7.25.1439	Logistic support for laboratory staff (soap, surf, gumboot, mask, apron, sanitizer, torch light, etc.)	22522	number	1	0.3	1	0.09
2.7.25.1438	Preparation and broadcast of FMD related public awareness radio material	22522	number	1	0.61	0	0.00
2.7.25.1436	Purchase of antibody ELISA kit for diagnosis of Bluetongue disease in sheep	22522	number	2	1.08	2	1.08
2.7.25.1435	Surveillance and sample collection of Bluetongue disease in sheep, goats, cows and buffaloes	22522	number	600	0.41	1206	0.00
2.7.25.1434	Purchase of antibody ELISA Kit Reagent for diagnosis of Swine Fever	22522	number	1	0.51	1	0.51
2.7.25.1441	Inter Laboratory visit Program	22522		2	0.61	0	0.00
2.7.25.1442	FMD carrier status serosurveillance, sample collection & laboratory examination on main live animal market/Quarantine Check Post/Festival target animal Hat Bazar	22522	number	300	0.3	448	0.00
2.8.1.579	Monitoring and Evaluation of TADs in Animal Disease Investigation Laboratory (Internal visit)	22611	number	3	0.3	3	0.26
2.8.1.580	Monitoring and Evaluation of FMD and Swine Fever disease at Provincial and Local Level (Internal visit)	22611	number	3	0.3	4	0.18
2.8.1.774	Visit to provide expert services related to animal disease investigation and control at provincial and local levels	22611	number	4	0.38	4	0.30
2.8.2.2	Various administrative Travel cost	22612	number	4	0.2	2	0.11
2.8.2.47	Payment Of TADA for Field Technician. (Internal Travel)	22612	number	4	0.14	11	0.12
2.8.2.295	FMD Carrier Status Sero-Surveillance on main market (Kathmandu valley) and Quarantine Check post (Internal Travel)	22612	number	2	0.24	2	0.24
2.8.2.394	FMD sample collection and sample kits distribution to other federal offices at the provincial and local levels visit expenses for	22612	number	4	0.47	7	0.34
2.8.2.396	FMD carrier status seroservillance and sample collection of Cattle, Buffalo, Sheep, Goat visit expenses	22612	number	3	0.36	3	0.34

S.N.	Programs / Activities	Expenditure title	Unit	Annual target		Annual progress	
				Quantity	Weightage	Quantity	Weightage
2.8.2.397	Risk-based FMD surveillance and sample collection travel cost	22612	number	3	0.36	3	0.34
2.8.2.398	FMD surveillance and sample collection in domestic animals raised in the National Park Buffer Zone area travel cost	22612	number	2	0.24	2	0.21
2.8.2.399	FMD Outbreak investigation and sample collection of cattle and buffalo travel cost	22612	number	4	0.47	2	0.24
2.8.2.400	FMD Outbreak investigation and sample collection of Sheep goat and pig travel cost	22612	number	4	0.47	2	0.37
2.8.2.401	Sample collection from vaccinated animals (seromonitoring) under the National FMD Disease Control Program travel cost	22612	number	4	0.47	4	0.41
2.8.2.402	Surveillance, investigation and sample collection of Swine fever disease in pigs travel cost	22612	number	3	0.41	3	0.37
2.8.2.403	Sample collection from vaccinated animals under National Classical Swine Fever Disease Control Program (seromonitoring) travel cost	22612	number	3	0.41	2	0.32
2.8.2.404	Surveillance & sample collection of Bluetongue disease in cattle, buffalo, sheep, goat travel cost	22612	number	4	0.44	3	0.33
2.9.6.1	Daily tea cost in office	22711	number	12	0.41	12	0.36
2.9.6.5	Miscellaneous cost in office	22711	month	12	0.08	12	0.06
2.9.6.7	Regular staff meeting tea cost	22711	month	12	0.1	12	0.09
2.9.8.7	Hospitality, welcome and farewell program cost	22711	number	4	0.08	3	0.07
7.2.9.40	Procurement of medicines for distribution to farmers during disease surveillance investigation and sample collection	27213	number	2	0.58	2	0.57
7.2.9.41	Procurement of medicines for distribution to farmers during seromonitoring activities under the National Disease Control Program	27213	number	2	0.58	2	0.57
<b>Under the Current Expenditure</b>				<b>10839</b>	<b>78.43</b>	<b>14868</b>	<b>65.74</b>
<b>Under the Capital and Current Expenditure</b>				<b>10886</b>	<b>100</b>	<b>14916</b>	<b>86.15</b>

**Total Financial progress: 86.15%**

**Total weightage progress: 86.17%**

## **4. MAJOR ACTIVITIES OF THE LABORATORY DURING FY 2079/80**

### **4.1 FMD Sample Collection and Virus Typing:**

In total, 294 samples were received from FMD outbreak & non outbreak areas of different districts. Out of 77 district, 8 districts were confirmed FMD Positive by our laboratory test and 2 district (Doti and

Lalitpur) that was clinically affected by FMD was not confirmed FMD Positive by laboratory test. Out of 294 samples, 35 samples were positive for FMD virus serotype O and none of the samples were positive for other Serotypes. In this fiscal year 2079/080, 10 outbreak were confirmed by our lab. Most of the received samples were negative. It might be due to improper sampling time, quality of samples or actual negative samples. The best samples like vesicular fluid, epithelium from the tissue, tongue, gums and dental pads and tissues from the inter-digital space at the early stage of infection within 4 days of onset of clinical signs are required for serotyping of FMD virus. Therefore, field veterinarians and technicians are required to know what and how the sample are collected and keep attention for the quality aspects of the samples in order to get better laboratory results.

**Table 2: Month Wise Sero-typing of FMD Virus by ELISA and PCR method FY 2079/80 (Surveillance and Outbreak )**

S.N.	Month	No of tested Samples	FMDV Serotype				FMDV Positive District
			O	A	Asia 1	NVD	
1	Shrawan	0	-	-	-	-	-
	Bhadra	17	8	-	-	9	Ramechhap, Kalikot
	Ashoj	63	1	-	-	62	Dadeldhura
2	Kartik	-	-	-	-	-	-
	Mangsir	48	-	-	-	48	
	Poush	48	8	-	-	40	Darchula, Baitadi, Dadeldhura
3	Magh	55	15	-	-	40	Okhaldhunga, Sindhuli
	Falgun	-	-	-	-	-	-
	Chaitra	2	2	-	-	0	Kaski
4	Baishakh	-	-	-	-	-	-
	Jestha	41	1	-	-	40	Kaski
	Ashar	20	-	-	-	20	
<b>Total</b>		<b>294</b>	<b>35</b>	<b>-</b>	<b>-</b>	<b>259</b>	

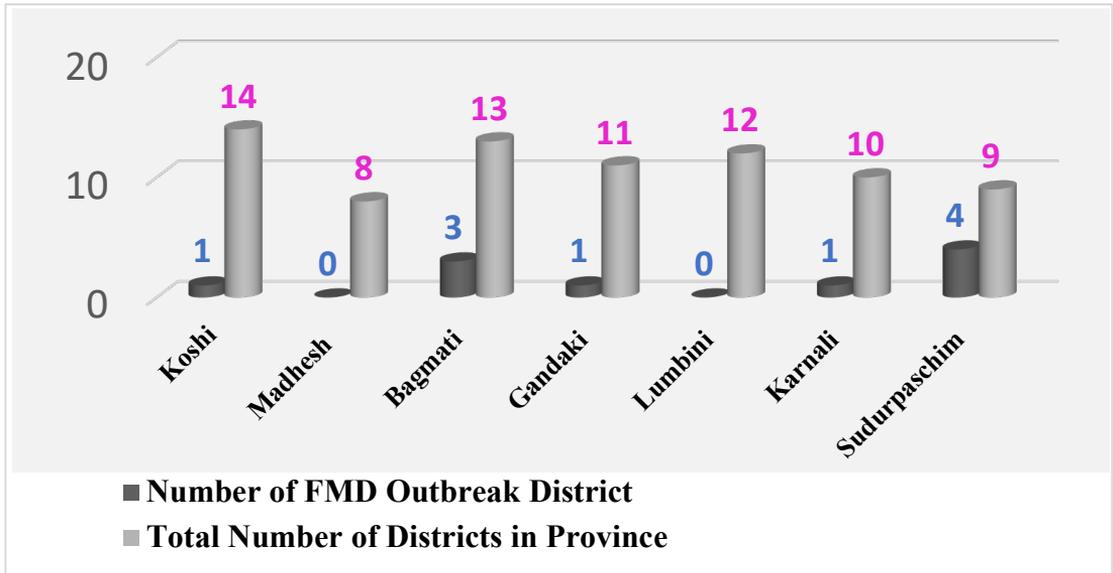
**Table 3: District Wise Serotyping of FMD Virus by ELISA and PCR method FY 2079/80 (Outbreak only)**

S.N.	District	No.of tested samples	FMDV Serotype				Remarks
			O	A	Asia1	NVD	
1	Baitadi	2	1	-	-	1	
2	Dadheldhura	6	2	-	-	4	
3	Darchula	21	6	-	-	15	
4	Kalikot	5	5	-	-	0	
5	Kaski	3	3	-	-	0	
6	Lalitpur	2	-	-	-	2	
7	Okhaldhunga	9	6	-	-	3	
8	Ramechhap	12	3	-	-	9	
9	Sindhuli	11	9	-	-	2	
	<b>Total</b>	<b>71</b>	<b>35</b>	<b>-</b>	<b>-</b>	<b>36</b>	

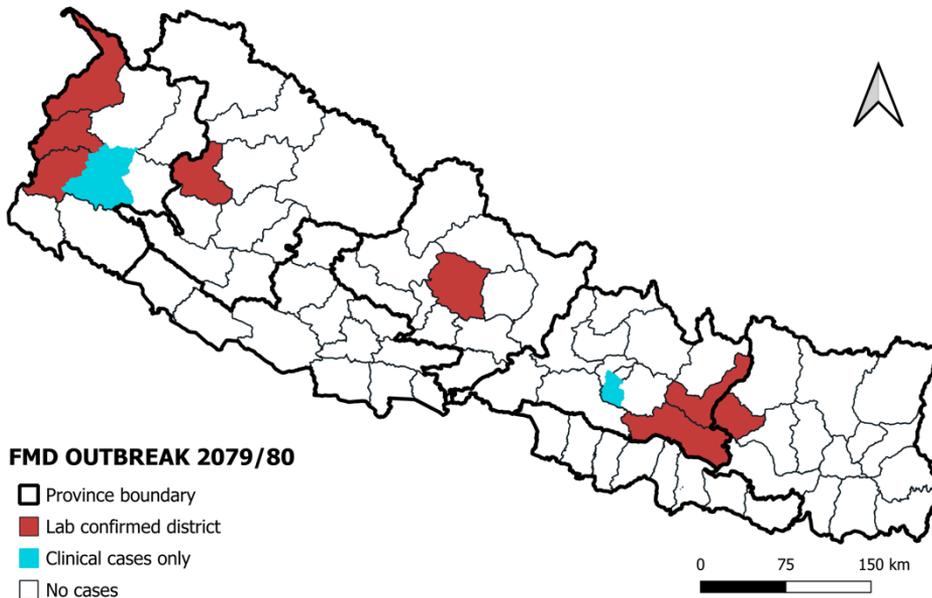
**Table 4: Province Wise FMD Outbreak Status FY 2079/80**

S.N.	Province	Lab Confirmed	Clinical cases only	FMD Outbreak District
1	Koshi	Okhaldhunga (1)	-	1/14
2	Madhesh	-	-	0/8
3	Bagmati	Ramechhap, Sindhuli (2)	Lalitpur (1)	3/13
4	Gandaki	Kaski (1)	-	1/11
5	Lumbini	-	-	0/12
6	Karnali	Kalikot (1)	-	1/10
7	Sudurpaschim	Darchula, Baitadi, Dadeldhura, (3)	Doti (1)	4/9
	<b>Total</b>	<b>8 Districts</b>	<b>2 District</b>	<b>10/77</b>

**Figure 1: Province Wise FMD Outbreak Pattern FY 2079/80**



**Figure 2: FMD outbreak Status of FY 2079/80**

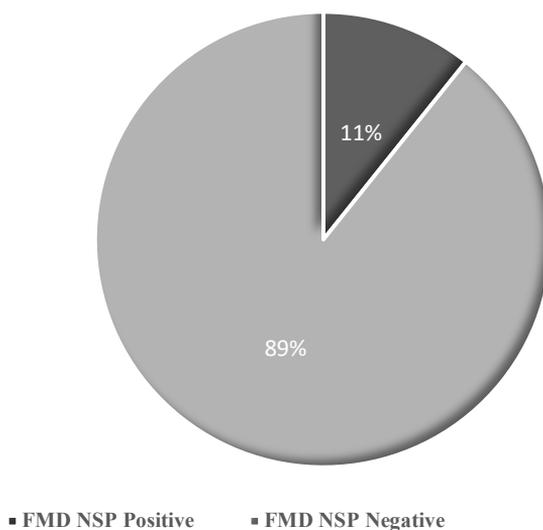


#### 4.2 FMD Carrier Status surveillance

A total no of 2311 serum samples from different districts were either collected by our lab staffs from different parts of country or received from other offices like different Quarantine offices, Veterinary Laboratories, Veterinary Hospitals & Local Levels. Those samples were tested by FMD NSP Antibody ELISA to study the carrier status of FMD in the animals. Out of 2311 serum samples, 248 samples (10.7%) were positive and 2063 Samples (89.27%) were negative.

**Table 5: Result of FMD NSP ELISA District wise FY 2079/80**

S.N.	District	No. of tested samples	Positive	Negative	Positive %
1	Bhaktapur	51	13	38	25.5
2	Darchula	10	10	0	100.0
3	Kailali	101	1	100	1.0
4	Kaski	180	43	137	23.9
5	Kathmandu	346	44	302	12.7
6	Kavre	265	29	236	10.9
7	Khotang	117	0	117	0.0
8	Lalitpur	171	65	106	38.0
9	Lamjung	150	6	144	4.0
10	Myagdi	78	0	78	0.0
11	Nawalparasi (East)	111	12	99	10.8
12	Nuwakot	101	5	96	5.0
13	Nuwakot	99	2	97	2.0
14	Panchthar	5	0	5	0.0
15	Parsa	106	7	99	6.6
16	Rasuwa	101	0	101	0.0
17	Sarlahi	37	5	32	13.5
18	Solukhumbu	70	0	70	0.0
19	Sunsari	112	2	110	1.8
20	Tanahu	100	4	96	4.0
<b>Total</b>		<b>2311</b>	<b>248</b>	<b>2063</b>	<b>10.7</b>

**Figure 3: FMD NSP Sero-Surveillance ELISA Result FY 2079/80****4.3 FMD Vaccine Seromonitoring**

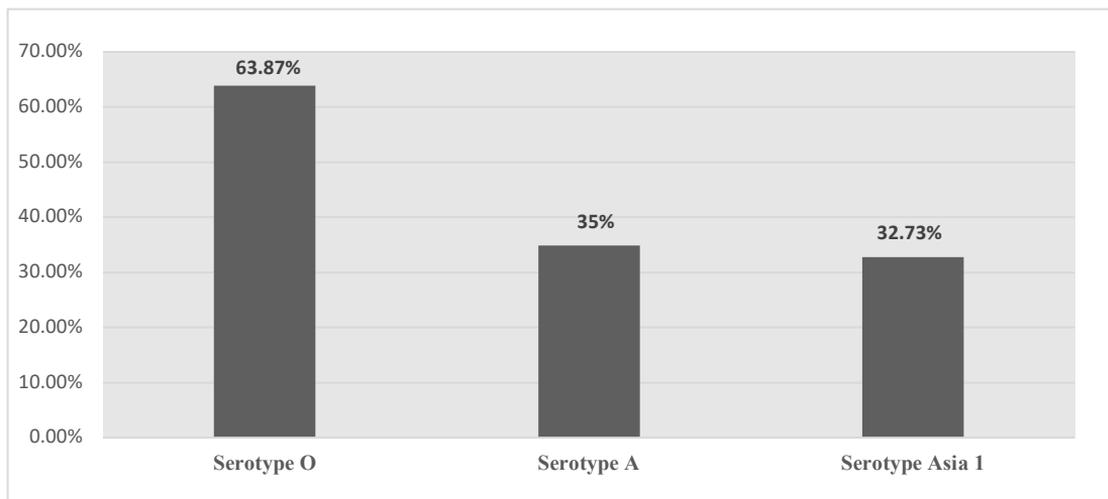
A total no of 1946 serum samples were received from 17 districts and tested by FMD Antibody ELISA test. All samples were tested for FMD type O antibody and 1243 (63.87%) out of total samples were found positive. Only 1152 serum samples were tested for type Asia1 and type A antibody. Out of which 377 (32.73%) samples were found positive for antibody type Asia 1 and 401(34.81%) samples were found positive for antibody Type A.

**Table 6: FMD Vaccine Seromonitoring**

S.N.	District	Total Sample	Antibody Type O			Antibody Type A			Antibody Type Asia 1		
			Positive	Negative	Positive %	Positive	Negative	Positive %	Positive	Negative	Positive %
1	Dang	16	7	9	43.8	3	13	18.8	2	14	12.5
2	Dhading	61	61	0	100	-	-	-	-	-	-
3	Dhankuta	92	19	73	20.7	11	81	12	10	82	10.9
4	Dhanusha	102	65	37	63.7	50	52	49	44	58	43.1
5	Dolakha	79	36	43	45.57	-	-	-	-	-	-
6	Ilam	94	56	38	59.6	31	63	33	38	56	40.4
7	Jhapa	128	96	32	75	68	60	53.1	71	57	55.5
8	Kanchanpur	212	87	125	41	57	155	26.9	58	154	27.4
9	Kaski	18	15	3	83.3	12	6	66.7	12	6	66.7
10	Kathmandu	81	65	16	80.2	8	21	27.6	1	28	3.4
11	Kavre	491	337	154	68.64	-	-	-	-	-	-
12	Morang	68	36	32	52.9	24	44	35.3	8	60	11.8
13	Nawalparasi	111	108	3	97.3	-	-	-	-	-	-
14	Panchthar	81	38	43	46.9	25	56	30.9	19	62	23.5
15	Siraha	104	78	26	75	24	80	23.1	10	94	9.6
16	Sunsari	99	56	43	56.6	25	74	25.3	41	58	41.4
17	Udaypur	109	83	26	76.1	63	46	57.8	63	46	57.8
<b>Total sample</b>		<b>1946</b>	<b>1946</b>	-	-	<b>1152</b>	-	-	<b>1152</b>	-	-
<b>Average Result</b>		<b>1946</b>	<b>1243</b>	<b>703</b>	<b>63.87</b>	<b>401</b>	<b>751</b>	<b>34.81</b>	<b>377</b>	<b>775</b>	<b>32.73</b>

**Figure 4: Sero-Conversion of FMD Vaccine FY 2079/80**

(Positive % in O, A &amp; Asia1 type antibody)

**4.4 Classical Swine Fever Laboratory Diagnosis:**

Classical Swine Fever (CSF) is a highly contagious and economically significant viral disease of pig caused by classical swine fever virus (CSFV), a member of the genus Pestivirus and family Flaviviridae. Only one CSFV serotype has been found, but minor antigenic variability has been demonstrated between viral strains.

In FY 2079/080 a total number of 44 tissue samples from pigs were received and tested by antigen ELISA method in the lab. Out of 44 samples only 4 (9.1 %) samples were antigen positive.

**Table 7: Result of CSFV Antigen Elisa Test FY 2079/80**

S.N.	District	Total Tested Samples	Positive	Negative	Remarks
1	Bardiya	3	0	3	ASF +ve
2	Chitwan	15	0	15	ASF +ve
3	Dang	4	0	4	ASF +ve
4	Kailali	14	1	13	
5	Surkhet	8	3	5	ASF +ve
<b>Total</b>		<b>44</b>	<b>4</b>	<b>40</b>	

**Table 8: CSV Sero-surveillance**

A total no of 110 serum samples were received from unvaccinated animals of 2 districts and tested by CSF Antibody ELISA Test. Out of 110 serum samples only 10 samples (9.10 %) were found positive for CSFV antibody

S.N	District	Total Samples	Positive	Negative	Positive%	Negative%
1	Morang	50	10	40	20	80
2	Dolakha	60	0	60	0	100
<b>Total</b>		<b>110</b>	<b>10</b>	<b>100</b>	<b>9.1%</b>	<b>90.9%</b>

**Table 9: CSFV Vaccine Seromonitoring**

A total no of 381 serum samples were received from 7 districts and tested by CSF Antibody ELISA Test. Out of 381 serum samples only 253 samples (66.44%) were found positive for CSFV antibody

S.N.	District	Total Samples	Positive	Negative	Positive%	Negative%
1	Bhojpur	16	12	4	75.0	25.0
2	Dhading	74	57	17	77.0	23.0
3	Dolakha	16	1	15	6.3	93.7
4	Kailali	142	106	36	74.6	25.4
5	Kanchanpur	58	50	8	86.2	13.8
6	Khotang	48	13	35	27.1	72.9
7	Terhathum	27	14	13	51.8	48.1
<b>Total</b>		<b>381</b>	<b>253</b>	<b>128</b>	<b>66.4%</b>	<b>33.6%</b>

#### 4.5 Blue Tongue Sero-surveillance Programme

Blue Tongue is an infectious, non-contagious, arthropod (Culicoides species) transmitted disease of sheep with possible occurrence in other domestic and wild ruminants. During 2079/80, a total number of 1368 serum samples collected from Cattle, Buffalo, Sheep & Goat from the 10 districts were collected. Out of tested samples, 480 (35.1%) were positive and 888 samples were negative. The results of the ELISA test of BTV is presented in below.

**Table 10: Blue Tongue Sero-surveillance FY 2079/80**

S.N.	District	Total Samples	Positive	Negative	Positive %
1	Dolakha	63	18	45	28.6
2	Kailali	101	61	40	60.4
3	Kaski	180	116	64	64.4
4	Kavre	80	9	71	11.3
5	Lalitpur	364	118	246	32.4
6	Lamjung	150	68	82	45.3
7	Myagdi	224	50	174	22.3
8	Nuwakot	99	3	96	3.0
9	Sarlahi	37	37	0	100.0
10	Solukhumbu	70	0	70	0.0
<b>Total</b>		<b>1368</b>	<b>480</b>	<b>888</b>	<b>35.1%</b>

## 5. STAFF DETAILS

**Table 11: Staff Details**

S. N.	Name of Staff	Post	Class	Post Sanction	Post Available	Vacant
1	Dr. Krishna Raj Pandey	Senior Veterinary Officer	G. Class II	1	1	0

S. N.	Name of Staff	Post	Class	Post Sanction	Post Available	Vacant
2	Dr. Nisha Poudel	Veterinary Officer	G.Class III	3	1	2
3		Veterinary Officer	G.Class III			
4		Veterinary Officer	G.Class III			
5	Mr. Shiba Kumar Karki	Animal Health Technician	Non G. Class I	2	2	0
6	Mr. Bal Kumar Rai	Animal Health Technician	Non G. Class I			
7	Mrs. Bhawani Bhandari/ Adhikari	Accountant	Non G. Class I	1	1	0
8	Mr. Chitra Bahadur Basnet	Assistant Animal Health Technician	Non G. Class II	1	1	0
9	Mr. Uttam Nath	Kharidar	Non G. Class II	1	1	0
10	Mr. Shankar Prasad Paudel	Light Driver	Unclassified	1	1	0
11	Mr. Radhika Rai	Office Helper	Unclassified	2	2	0
12	Mrs. Roshan Thapa	Office Helper	Unclassified			
Total				12	10	2

## 6. LABORATORY ANIMAL MANAGEMENT

FMD lab raises and take care of rabbits for the purpose of performing diagnostic procedures as well as producing vaccinations at the National Vaccine Production Laboratory.

**Table 12: Record of Lab Animals FY 2079/80**

Animal Details	Distributed in NVPL	Stock in the unit
Rabbit	27	10

## 7. BUDGET SUMMARY

**Table 13: Details of Budget Transaction & Expenditure FY 2079/80**

Budget line	Budget heads	Approved Budget (NRs. in 000)	Expenditure (NRs. in 000)
21111	Staff Salary	6015	5828
21121	Dress	100	90
21139	Guard duty Allowance	58	0
21132	Dearness Allowance	240	210
21213	Insurance Fund for staffs	96	42
22111	Water & Electricity Tariff	1014	992
22112	Telephone and Communication	128	123
22212	Fuel	599	534
22213	Repair of Vehicle	460	410
22214	Insurance and Renewal	100	84
22221	Machinery Equipment Repair Cost	330	314
22231	Cost of Maintenance of built public assets	1668	1590
22311	Masalanda and Office materials	320	300
22312	Animal feed	100	100
22314	Fuel (Extra Uses)	69	58
22315	Newspaper & Annual Report publication Cost	290	215
22411	Servive and Councillng Cost	400	386
22413	Contract Service Cost	1299	1141
22511	Staff Training Cost	820	78
22512	Skill development and Public Awareness Training Cost	600	245
22522	Program cost	6277	4858
22611	Evaluation and monitoring cost	292	222
22612	Travel cost	1379	1105
22711	Miscellaneous cost	198	172
27213	Cost of Veterinary Drugs	340	339
<b>Total</b>		<b>23192</b>	<b>19435</b>

Budget line	Budget heads	Approved Budget (NRs. in 00000)	Expenditures (NRs. in 00000)
31112	Non-Residential Building Construction	19.8	19.62
31121	Vehicle	2.5	2.49
31122	Machineries and Tools	29.9	26.74
31123	Furniture and Fixture	4.0	3.96
31156	Drinking Water structure Construction	0.8	0.78
31161	Structural repair of constructed buildings	6.8	6.78
<b>Total Amount</b>		<b>63.7</b>	<b>60.36</b>
<b>Grand Total Amount</b>		<b>295.65</b>	<b>254.71</b>

## 8. MAJOR ACHIEVEMENTS:

1. Routine Sero-typing of FMD virus at the laboratory has helped to know the status of FMD virus serotypes in the country and vaccine to be used. Finally, it helps to control the FMD in time and prevent from the heavy economic loss of farmers.
2. Routine Sero-Surveillance of FMDV to find out the status of FMD in non- outbreaks areas and help to lunch RBSP of FMD PCP Control Pathway.
3. Routine Sero-Surveillance of CSFV to find out the status of CSFV in the porcine population of Nepal.
4. Sero-Surveillance of Blue-Tongue disease in sheep, goat, cattle and buffalo also helps to know the status of disease in Nepal.
5. Routine Sero-Monitoring of vaccinated animals against FMDV and CSFV give the clear picture about the quality of vaccine and effectiveness of vaccination program.
6. The laboratory has been doing the molecular diagnosis of FMDV by Conventional Multiplex RT-PCR since 2012 and by Real Time Multiplex RT-PCR by 2022.
7. The laboratory has been sending the few FMD outbreak sample annually to WRLFMD, Pirbright, UK for Genotyping & Vaccine Matching Test.
8. The Laboratory has been actively participating in the Proficiency Testing (PT) done by WRLFMD, Pirbright, UK. Eight virology samples and four serology samples were received and tested in the fiscal year 2079/080 for proficiency testing.
9. The laboratory has been doing routine calibration of laboratory equipment in order to maintain measurement accuracy, uniformity, and repeatability, ensuring trustworthy standards and outcomes.

## 9. ABBREVIATION

AICP	:	Avian Influenza Control Project
ASF	:	African Swine Fever
BTV	:	Blue Tongue Virus
CSFV	:	Classical Swine Fever Virus
CVL	:	Central Veterinary Laboratory
ELISA	:	Enzyme Linked Immunosorbent Assay
F/Y	:	Fiscal Year
FMD	:	Foot and Mouth Disease
FMDV	:	Foot and Mouth Disease Virus
NSP	:	Non-Structural Protein
GPS	:	Global Positioning System
NVD	:	No Virus Detected
OIE	:	Office International des Epizooties
PCP	:	Progressive Control Pathway
PCR	:	Polymerase Chain Reaction
PT	:	Proficiency Test
RBSP	:	Risk Based Surveillance Programme
RT-PCR	:	Real Time Polymerase Chain Reaction
SAARC	:	South Asian Association for Regional Cooperation
TADs	:	Transboundary Animal Diseases
UK	:	United Kingdom
WOAH	:	World Organization for Animal Health
WRLFMD	:	World Reference laboratory for Foot and Mouth Disease.

## Some glimpse of activities related to FMD Sero-monitoring, Sero-surveillance and Interaction program with Stakeholders.



Fig: FMD &TADs related interactive program at province & Local level Dhadingbeshi, Dhading



Fig: Festival oriented FMD surveillance, sample collection program



Fig: Sero-surveillance sample collection team at Bagmati, Lalitpur



Fig: Sero-monitoring sample collection team at Kageswori, Kathmandu

## Disease Surveillance at different Genetic Resource center



Fig: Disease Surveillance at Sheep Genetic Resource center, Pansayakhola, Nuwakot



Fig: Disease Surveillance at Goat Genetic Resource center, Buditola, Kailali



Fig: Disease Surveillance team at Cattle Genetic Resource center, Jiri, Dolakha



Fig: Disease Surveillance team at Forage Genetic Resource Center, Ranjitpur, Sarlahi



Fig: Disease Surveillance at Yak Genetic Resource center, Syangboche, Solukhumbu



**Some glimpse of sample collection for TADs diagnosis**



Fig: Sample collection for Blue-Tongue Sero-surveillance



Fig: Sample collection for CSF Sero-surveillance



Fig: Sample collection for FMD Sero-surveillance



Fig: Sample collection for FMD Sero-monitoring



Fig: FMD & TADs Lab Team at Terahthum for CSF seromonitoring

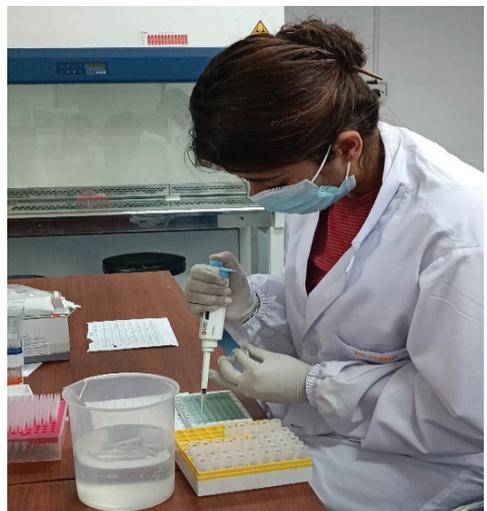


Fig: FMD diagnosis by ELISA Test

## FMD Laboratory Investigation at FMD & TADS Lab, Budhanilkantha, Kathmandu

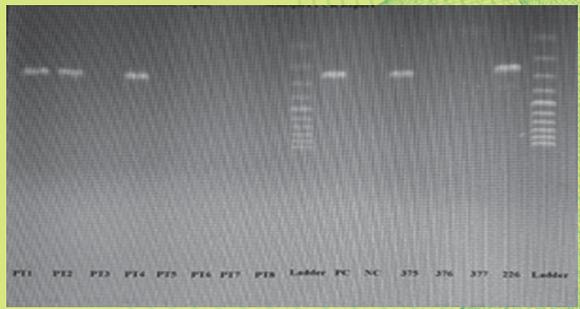


Fig: Diagnosis of FMD by Conventional Multiplex RT-PCR

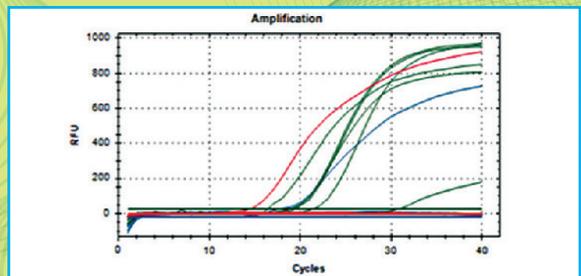


Fig: Diagnosis of FMD by Real Time Multiplex RT- PCR



Government of Nepal  
Ministry of Agriculture and Livestock Development  
Department of Livestock Services

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