GOVERNMENT OF INDIA

MINISTRY OF AGRICULTURE

DEPARTMENT OF ANIMAL HUSBANDRY, DAIRYING & FISHERIES

ANNUAL REPORT

2014-2015

AN IS/ISO 9001:2000 ORGANIZATION

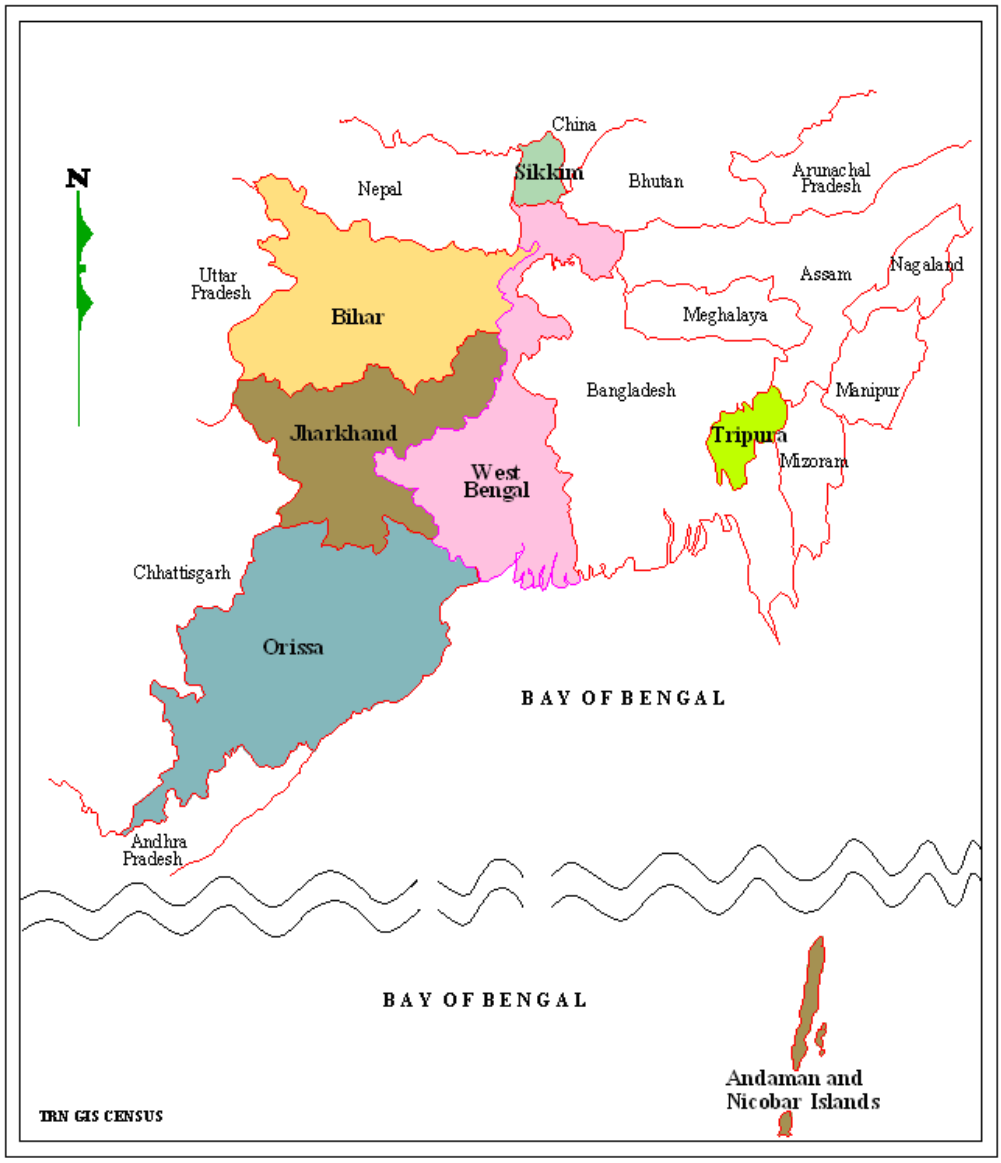
REGIONAL DISEASE DIAGNOSTIC LABORATORY

EASTERN REGION

INSTITUTE OF ANIMAL HEALTH & VETERINARY BIOLOGICALS
(RESEARCH & TRAINING)
37, Belgachia Road, Kolkata - 700 037

LOCATION OF RDDLs IN INDIA

3
STATES UNDER JURISDICTION OF REGIONAL DISEASE DIAGNOSTIC LABORATORY (ER)



With the establishment of Regional Disease Diagnostic Laboratory (ER), Kolkata diagnostic facilities have been extended to eastern & north-eastern states viz. Bihar, Orissa, Jharkhand, Sikkim, Tripura and Andaman & Nicobar Islands.

PREFACE

Since its inception, Regional Disease Diagnostic Laboratory (ER) has been efficiently performing its role by concentrating on the specified mandate in areas of disease surveillance, diagnosis, documentation, imparting training, maintenance of data bank on the epidemiology of economically important diseases with the ultimate target of up-gradation of livestock health.

All efforts were delivered for application of the latest diagnostic techniques for diagnosis of different livestock and avian diseases. The Pre-fabricated BSL-III Laboratory has been functioning effectively by screening of routine sera samples by competitive ELISA for detection of Influenza Type 'A' viral antibody and Haemagglutination Inhibition test for detection of Influenza virus Subtype H5 antibody. Routine screening of morbid surveillance samples for Avian Influenza Virus in Embryonated Chicken Eggs (ECE) is being carried out purposefully. The competence of the laboratory for handling any unusual mortality sample suspected for HPAI (Avian Influenza virus Subtype H5) has been proved at several instances.. Standardization of the pesticides like Cypermethrin, Deltamethrin, Endosulfon, Quinalphos, BHC, Malathion, Mycotoxin like Aflatoxin-B1, B2, M1, G2 and Ochratoxin has been done in HPLC Laboratory. Analysis of Pesticide and Mycotoxin in specific samples has been done successfully. BSE surveillance work and histopathological examination for diagnosis of several other diseases are being performed regularly. Regular monitoring of the microbiological parameters of Frozen Semen Bull stations, Bull Mother Farms of different states including West Bengal is executed as per MSP laid down by the DADF, Government of India. Standardisation of PCR technique for BoHV-I has been achieved and multiplex-PCR for different species of Brucella has been accomplished previously. Recently, standardization of PCR for detection of Bacterial pathogens like *Listeria* sp., *Anthrax bacilli* from blood and dried meat & HS specific Bovine *Pasteurella* sp. from blood, *Mycobacterium tuberculosis* from tissue specimen, *Mycoplasma* sp. from nasal secretion, milk and synovial fluid had been done successfully. PCR has been standardised satisfactorily for diagnosis of viral diseases like PPR, LSD, Goat Pox, Classical Swine Fever, Duck Viral Enteritis and New Castle Disease also. qPCR technique is being routinely employed for screening of Bovine Frozen Semen for BoHV-I viral DNA. Further, RDDL (ER), Kolkata is also imparting training to the officials attached to disease diagnostic work of the dependant states and U/T especially on screening of serum samples for sero- surveillance work against Avian Influenza, BSE surveillance work and upgrading the knowledge against new techniques of different disease diagnosis.

Having gathered the experience of this and previous years, we along with the co-operation of all will strive to continue performing all the designated works with excellence in the future too.

Sd/-

(Dr. SWARUP BAKSHI)
Joint Director, RDDL (ER)
Institute of Animal Health & Vety. Biologicals (R&T)
Belgachia, Kolkata

CENTRAL SECTOR SCHEME OF
DEPARTMENT OF ANIMAL HUSBANDRY & DAIRYING

REGIONAL DISEASE DIAGNOSTIC LABORATORY (EASTERN REGION)

ANNUAL REPORT

2014-2015

1.	**Project Title**	Central Sector Scheme **Animal Disease Management and Regulatory Medicine,** Department of Animal Husbandry and Dairying, Ministry of Agriculture. Govt. of India.
2.	**Sanction No.**	F. No. 53-83/97-LDT (LH)
3.	**Date of Commencement**	July, 1999
4.	**Report Period**	2014 - 2015
5.	**Head of Regional Disease Diagnostic Laboratory**	Joint Director Regional Disease Diagnostic Laboratory Eastern Region
6.	**Location**	Institute of Animal Health & Veterinary Biologicals (R&T) 37, Belgachia Road, Kolkata- 700037 *Ph. :* 033-2532-8033/033-2546-7087/033-2556-5021 *Fax :* 033-2532-8033 *e-MAIL ID :* erddl_kolkata@yahoo.co.in iahvb.kolkata@rediffmail.com

REGIONAL DISEASE DIAGNOSTIC LABORATORY
EASTERN REGION

M A N D A T E

1. To serve as regional referral laboratory for economically important livestock diseases (bacterial, viral, parasitic etc.) and study of effects of any drugs/pesticides residue/toxicants in the livestock products by providing diagnostic services (both primary and confirmatory) to the states of the region.

2. To maintain a data bank on the epidemiology of the economically important diseases of the region and circulate to all the states on a periodic basis.

3. Be responsible to collect and transmit all isolates of viral, bacterial and parasitic agents to the National Repository to be maintained at the National Reference Laboratory.

4. To follow the approved standard reagents and techniques for generation of the diagnostic results.

5. To train scientists/officers from State Disease Diagnostic Laboratories of the region to update different technology for diagnosis of animal diseases and provide consultancy and expert services to the states of the region.

6. To undertake special programme for disease surveillance/diagnosis as per the direction of Govt. of India from time to time in view of epidemiological significance and importance etc.

7. Any data generated by the RDDL could be published only after prior permission obtained from Department of Animal Husbandry, Dairying and Fisheries, Government of India.

STAFF PATTERN OF
REGIONAL DISEASE DIAGNOSTIC LABORATORY
EASTERN REGION, KOLKATA

Sl. No.	Name of the post	Sanctioned strength	Present incumbent
1.	Joint Director, RDDL (ER)	01	Dr. Swarup Bakshi MVSc. (Bacteriology)
2..	Specialist (Diagnostic Pathology)	01	Dr. Tuhin Chakraborty MVSc. (Pathology)
3.	Specialist (Diagnostic Virology)	01	Dr. Shamindra Nath Sarkar MVSc. (Virology)
4.	Specialist (Sero Epidemiology)	01	Dr. Joyjit Mitra MVSc (Microbiology)
5.	Specialist (Epidemiology & Informatics)	01	Dr. Bidhan Bandyopadhyay MVSc (Epidemiology & PVM)
6.	Specialist (Diagnostic Parasitology)	01	Dr. Rabindra Nath Sikari MVSc. (Parasitology)
7.	Specialist (Diagnostic Bacteriology & Mycology)	01	Dr. Anup Singha MVSc. (Bacteriology)
8.	Specialist (Diagnostic Biochemistry & Toxicology)	01	Dr. Arun Kumar Brahmachari MVSc. (Biochemistry)
9.	Laboratory Technician	09	Vacant
10.	Laboratory Attendant	11	02

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ANNUAL ACTION PLAN AND TECHNICAL PROGRAMME
FOR RDDL (ER), KOLKATA

2014-2015

1. To provide referral and consultancy services to the state diagnostic laboratories for economically important Livestock and poultry diseases.

2. Development of epidemiological Data Bank including epidemiological maps of economically important livestock diseases of the region.

3. Screening of Bulls, teaser animals and bovine semen against sexually transmitted diseases including estimation of microbial load in Frozen Semen Straw in the region.

4. PCR based diagnosis with special reference to detection BoHV-1 in bovine semen sample.

5. Multiplex PCR based diagnosis for Brucella sp.

6. Surveillance work of infectious causes of abortion in Livestock population in organized farm and in the rural areas.

7. Surveillance on Tuberculosis and Johne's disease by γ- interferon assay.

8. Surveillance work on BSE based on Histopathological studies and ELISA based diagnosis of brain samples (as per target of Govt. of India).

9. Screening of brain samples from *Bovine Sp.* exhibiting neurological disorders for Listeriosis.

10. ELISA based diagnosis of important livestock and poultry disease and establishment of poultry disease diagnostic laboratory.

11. Immune status studies on Ranikhet Disease in vaccinated organized and backyard poultry population.

12. Standardization of molecular biological diagnostic techniques for different pathogens (livestock & poultry diseases other than Avian Influenza) with special reference to Capripox , PPR and Classical Swine Fever virus.

13. Standardization of PCR techniques for diagnosis of haemoprotozoan infection in cattle.

14. Routine Sero-surveillance work and antigen detection in morbid samples of HPAI.

15. Surveillance of Avian Influenza virus as per guideline of Govt. of India and framed surveillance strategies adopted by different states under jurisdiction of RDDL (ER), Kolkata.

16. Diagnosis of Rabies infection in post-mortem material by immuno-chromatographic technique.

17. Standardization of ELISA technique for detection of Mycotoxin in animal and poultry feed.

18. Proximate Analysis of animal and poultry feed.

19. To impart analytical facilities of pesticides, antibiotics and drug residues in livestock and poultry products by HPLC.

20. A) Study of nutritional status in infertility cases.
    B) Clinical Haematology and Bio-chemistry to aid disease diagnosis.

21. Soil testing of Anthrax spore in the endemic area.

22. Testing of export materials as per OIE protocol.

23. Maintenance of Repository of infective agents isolated from the Eastern Region.

24. Organizing training programme for veterinary & para-veterinary work force.

25. Preparation of different Audio-visual presentation for Mass awareness of vets/para-vets and common people against economically important livestock and poultry diseases.

26. Detection of microbial agents responsible for clinical and sub-clinical mastitis and its antibiogram.

27. Monitoring of State Sponsored Scheme on disease investigation.

28. Monitoring of Centrally Sponsored Scheme of NPRE/AICRP on FMD.

ACTIVITY REPORT OF RDDL(ER)

2014-2015

A. Maintenance of Data Bank on epidemiology on various Disease encountered in the Region (as per technical programme-2):

DISEASE OUTBREAK REPORTS OF EASTERN REGION

Sl. No.	Disease	West Bengal	Tripura	Bihar	Odisha	Andaman & Nicobar Islands	Other States under jurisdiction of RDDL(ER)
1.	Anthrax	23	*	0	6	*	Report not yet Received
2.	Anaplasmosis	01	14	4	14	5	
3.	Avian Influenza	Nil	0	0	0	0	
4.	Avian Salmonellosis	02	12	11	0	79	
5.	Babesiosis	04	15	3	1	4	
6.	Black Quarter	29	8	8	17	0	
7.	CCPP	Nil	*	*	4	7	
8.	CRD	Nil	12	2	5	7	
9.	Duck Cholera	01	14	4	0	0	
10.	Duck Plague	14	28	2	*	3	
11.	Foot & Mouth Disease	09	*	*	*	0	
12.	Fowl Cholera	01	21	2	11	16	
13.	Fowl Pox	10	33	6	29	37	
14.	Goat Pox	06	2	8	5	*	
15	H.S.	32	8	12	5	0	
16	I.B.D.	04	22	6	5	38	
17	PPR	61	17	14	10	*	
18	Rabies	01	17	0	*	0	
19	Ranikhet	80	84	27	34	89	
20	Swine Fever	01	3	*	*	*	
21	Theileriosis	07	2	8	3	6	
22	Trypanosomiasis	02	3	5	2	8	

*Report not available

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OUTBREAK OF ANTHRAX, PPR & GOAT POX IN WEST BENGAL
N
W
E
S
SIKKIM
BHUTAN
NEPAL
Darjeeling
DARJEELING
Jalpaiguri
JALPAIGURI
KOCH BIHAR
Koch Bihar
UTTAR DINAJPUR
BIHAR
Raiganj
DAKSHIN DINAJPUR
Balurghat
MALDAH
English Bazar
BANGLADESH
PPR
GOAT POX
ANTHRAX
Map Not To Scale
MURSHIDABAD
Baharampur
JHARKHAND
Siuri
BIRBHUM
Nadia
Krishnanagar
Puruliya
PURULIYA
Bankura
BANKURA
Bardhaman
BARDDHAMAN
HOOGLI
Chunchura
Bara
KOLKATA
Haora
Alipore
Medinipur
EAST MEDINIPUR
Tamluk
SOUTH 24 PARGANAS
NORTH 24 PARGANAS
ORISSA
WEST MEDINIPUR

OUTBREAK OF FMD, HS & BQ
IN WEST BENGAL
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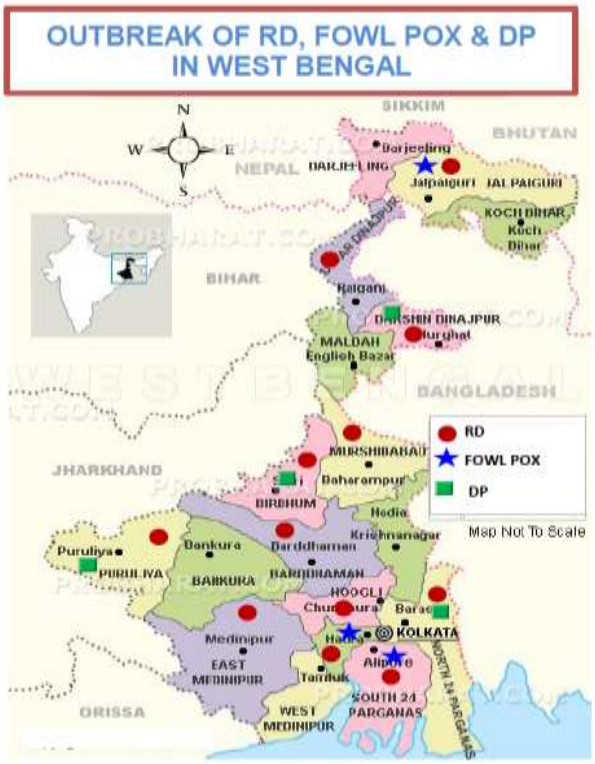
SIKKIM
BHUTAN
NEPAL
DARJEELING
Darjeeling
Siliguri
JALPAIGURI
KOCH BIHAR
Koch Bihar
UTTAR DINAJPUR
BIHAR
DAKSHIN DINAJPUR
Tohat
MALDAH
English Bazar
BANGLADESH
HS
FMD
BQ
Map Not To Scale
MURSHIDABAD
JHARKHAND
Sainthia
Baharampur
BIRBHUM
Nadia
Krishnanagar
Purulya
Bankura
Barddhaman
PURULIYA
BANKURA
BARDDHAMAN
HOOGLI
Barasat
KOLKATA
Medinipur
Alipore
EAST MEDINIPUR
Tamluk
SOUTH 24 PARGANAS
NORTH 24 PARGANAS
ORISSA
WEST MEDINIPUR


OUTBREAK OF RD, FOWL POX & DP
IN WEST BENGAL
N
W
E
S
SIKKIM
BHUTAN
NEPAL
BIHAR
BANGLADESH
JHARKHAND
ORISSA
Darjeeling
Jalpaiguri
JALPAIGURI
KOCH BIHAR
Koch Bihar
Raiganj
DAKSHIN DINAJPUR
Hurghat
MALDAH
English Bazar
MURSHIDABAD
Baharampur
BIRBHUM
Nadia
Krishnanagar
Puruliya
PURULIYA
Bankura
BANKURA
Darddhaman
BARDDHAMAN
HOOGLI
Barasat
KOLKATA
Medinipur
EAST MEDINIPUR
Tamluk
Alipore
SOUTH 24 PARGANAS
WEST MEDINIPUR
NORTH 24 PARGANAS
RD
FOWL POX
DP
Map Not To Scale

B. To provide referral and consultancy services to the state diagnostic laboratories for economically important livestock and poultry diseases (as per technical programme-1):

1. Provided diagnostic services to Frozen Semen Bank, Cuttack, Orissa against Brucellosis, Campylobacteriosis, Trichomonosis.

2. Imparted sero diagnostic support against Brucellosis, IBR of samples from CCBF, Koraput, Orissa, CCBF, Chiplima, Orissa, Intensive Cattle Breeding Farm, Sikkim and Bihar Livestock Development Agency, Patna.

3. Arranged sero diagnostic support against Leptospira for Andaman and Nicobar Islands.

4. Imparted sero diagnostic support against Bovine Viral Diarrhoea (BVD) for antigen, antibody detection of samples from Intensive Cattle Breeding Farm, Sikkim and NRC on Yak, Dirang, Arunachal Pradesh

5. Provided diagnostic support in connection with PPR outbreak in Eastern Region.

6. Provided diagnostic support in connection with Anthrax outbreak among livestock and wild life in Eastern Region.

7. Provided diagnostic support in connection with CCPP in Odisha and Andaman & Nicobar Islands.

8. Performed Sero monitoring under National Sero Surveillance Programme for the state of Sikkim.

9. Performed examination of all the serum and morbid samples for surveillance of Avian Influenza received from the eastern & north-eastern state (Tripura) under jurisdiction.

10. Imparted Training on Avian Influenza diagnosis to the officers of different States against proposal of Station In charge, IVRI Eastern Regional Station, Kolkata and instructed by the competent authority.

11. Organized Residential Training on BSE as per the mandate of RDDL for different Officers under jurisdiction of RDDL (ER).

12 Students of final year B V Sc & A H from WBUAFS, Kolkata attended to different section of this Institute in batch wise for training on practical aspect of disease diagnosis.

13 Imparted Training to laboratory technicians of Animal Quarantine and Certification Service (ER), NSCBI Airport, Kolkata on bacteriological isolation for different organisms, urine cultural examination etc. against proposal from their end.

14. Provided diagnostic services to Frozen Semen Bank, Cuttack, Orissa, CCBF, Koraput, Orissa, CCBF, Chiplima, Orissa, Livestock Breeding & Dairy Farm, Cuttack, Odisha, Intensive Cattle Breeding Farm, Sikkim against Tuberculosis and Johnin.

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C. Screening of bulls, teaser animals and bull semen against sexually transmitted diseases including estimation of microbial load in frozen semen straw (as per technical programme-3, 4, 6)

As per mandate of ERDDL different samples were received/collected from organized/unorganized farms in West Bengal and other States during this period. Different tests undertaken in the laboratory during the period of April, 2014 to March, 2015 and results are shown in different tables.

C-1. Serological examination reports of different sexually transmitted diseases :

Source	Brucellosis				IBR				Leptospira			Remarks
	Total Samples	P	S	N	Total Samples	P	S	N	Total Sample	P	N	
Organized Farms of West Bengal	1827	153	89	1585	216	125	14	77	-	-	-	P= Positive S= Suspected N= Negative
Unorganized Farms of West Bengal	794	07	04	783	28	-	-	28	-	-	-	
OTHER STATES												
CCBF, Koraput, **Odisha**	644	64	32	548	-	-	-	-	-	-	-	
FSB, Cuttack, **Odisha**	170	-	-	170	170	43	-	127	-	-	-	
CCBF,Chiplima, **Odisha**	-	-	-	-	-	-	-	-	-	-	-	
Sr.V.O, Junglighat Port Blair**, A & N Islands**	1020	-	-	1020	-	-	-	-	-	-	-	
PD,BLDA, Patna, **Bihar**	18	-	-	18	12	-	-	12	-	-	-	
Intensive Cattle Breeding Farm, **Sikkim**	39	-	1	38	39	12	03	24	-	-	-	
Sr. V.O.,RP Unit **A & N Islands**	-	-	-	-	-	-	-	-	707	520	187	
TOTAL	**4512**	**224**	**126**	**4162**	**465**	**180**	**17**	**268**	**707**	**520**	**187**	

C-2. Serological examination on Bovine Viral Diarrhoea (BVD) for Antibody Detection:

Name of the Farm/ Place	Total No. Animals Tested	No. of Positive Animals	No. of Suspected Animals	No. of Negative Animals
Frozen Semen Bull Stations, West Bengal	180	68	13	99
NRC on Yak, Dirang, Arunachal Pradesh	84	42	05	37
TOTAL	**264**	**110**	**18**	**136**

C-3. Serological examination on Bovine Viral Diarrhoea (BVD) for Antigen Detection:

Name of the Farm/ Place	Total No. Animals Tested	No. of Positive Animals	No. of Suspected Animals	No. of Negative Animals
Frozen Semen Bull Stations, West Bengal	245	4	-	241
Intensive Cattle Breeding Farm, Sikkim	39	-	-	39
FSB, Cuttack, Odisha	170	-	-	170
TOTAL	**454**	**4**	**-**	**450**

C-4. Estimation of microbial load in Frozen Semen straw (as per technical programme-3) :

Source	Total Sample tested	Satisfactory	Unsatisfactory
Frozen Semen Bull Stations, West Bengal	676	659	17
SDDL of other States	Samples not received	-	-
TOTAL	**676**	**659**	**17**

D. Surveillance work on infectious causes of abortion in livestock population (as per technical programme-6) :

D-1. Cultural examination reports on different sexually transmitted diseases:

Tested at	Source	Type of samples	Total samples received	Campylo-bacteriosis		Tricho-moniasis	
				P	N	P	N
RDDL(ER), Kolkata	**FSBS West Bengal**	Preputial washing	126	-	126	-	126
	FSB, Cuttack, Odisha		105	-	105	-	105
	Intensive Cattle Breeding Farm, Sikkim		18	-	18	-	18
	TOTAL		**249**	**-**	**249**		**249**

E. PCR based detection :

E-1 PCR based detection of BoHV - I in neat semen (As per technical programme Sl. No. 4) :

As per direction laid down in the "OIE Terrestrial manual (2009) for standardization of Diagnostics and vaccines", the recommended tests for International trade for IBR is Real time (quantitative) -PCR technique. As per proposed MSP of Govt. of India for application of q-PCR, a resolution has been taken in midyear of 2012 - 2013, which was incorporated in MSP. We have standardized the test in this current year 2014 –2015. Results of q-PCR based detection of frozen semen straws in batches during the year 2014 –2015 are stated below-

Tested at	Source	Total Sample tested	Positive	Negative
RDDL(ER), Kolkata	**Sperm Stations, West Bengal**	770	11	759
	Bihar Livestock Dev. Agency, Patna	152	30	122
	TOTAL	**922**	**41**	**881**

F-1 Surveillance work on Tuberculosis (as per technical programme-7, partial/modified) :

During the year 2014-2015, the Instt. of Animal Health & Vety. Biologicals (R&T), Kolkata, as per RDDL mandate, tested 112 nos. of animals for tuberculosis in bovine population and in wild life in the state of West Bengal using single interdermal test by tuberculin PPD. No animal was found reactor. In case of Johne's disease there was no reactor animal out of 85 animals tested in organized farms of West Bengal.

F-1. Tuberculin Sensitivity Test at Govt. Farms/ Private Farms/ organization :

Name of the Farm	No. of Animal Tested	No. of Reactor Animal	No. of Doubtful Animal	No. of Non Reactor Animals
Organized Farms of West Bengal	1105	-	-	1105
Wildlife, West Bengal	41	-	-	41
Central Cattle Breeding Farm , Chiplima, Odisha	259	-	-	259
Central Cattle Breeding Farm ,Koraput, Odisha	289	-	-	289
Intensive Cattle Breeding Farm, Sikkim	39	-	-	39
Livestock Breeding & Dairy Farm, Cuttack, Odisha	65	-	7	58
Frozen Semen Bank, Khapuria, Cuttack, Odisha	17	-	-	17
TOTAL	**1815**	**-**	**7**	**1808**

F-2. Johnin Sensitivity Test at State Farms/ Private Farms/ organization :

Name of the Farm	No. of Animal Tested	No. of Reactor Animal	No. of Doubtful Animal	No. of Non Reactor Animals
Organized Farms of West Bengal	1105	-	-	1105
Central Cattle Breeding Farm , Chiplima, Odisha	259	-	-	259
Central Cattle Breeding Farm ,Koraput, Odisha	289	-	-	289
Intensive Cattle Breeding Farm, Sikkim	39	-	-	39
Livestock Breeding & Dairy Farm, Cuttack, Odisha	65	-	1	64
Frozen Semen Bank, Khapuria, Cuttack, Odisha	17	-	-	17
TOTAL	**1774**	**-**	**1**	**1773**

F-3. Total Test Performed :

Sl. No.	Name of the Test	No. of Animal Tested	No. of Reactor animal	No. of Doubtful animal	No. of Non-reactor animal
1	**Tuberculin Sensitivity Test**	**1815**	**-**	**7**	**1808**
2	**Johnin Sensitivity Test**	**1774**	**-**	**1**	**1773**
Total		**3589**	**-**	**8**	**3581**

G. Surveillance work on BSE by Histopathological studies and ELISA based diagnosis of brain samples (as per technical programme-8) :

Active Surveillance:

A total of one hundred forty nine (149) brain samples (mostly cattle) were collected or received in 10% formalin or ice pack at different slaughter houses from West Bengal, Jharkhand, Sikkim. Besides, sample from clinically suspect cases were collected /received from different places of West Bengal, Sikkim, Jharkhand, Andaman & Nicobar, Orissa, Bihar and Tripura exhibiting neurological sign before death.

The coronal section from different anatomical sites particularly obex of medulla, caudal cerebellar peduncle, rostral colliculi and others were cut and fix immediately in 10 % formalin to avoid autolytic changes. After fixation tissues were processed , cut and stained (H&E) and Seller's per standard procedure for microscopical examination. Ice pack tissues were screened to detect Listeria species and Rabies (negri bodies) by Seller's staining.

None of the brain sample screened had hallmark lesion suggestive to BSE. Though some of the samples taken from clinical suspect cases having few nervous sign showed mostly vascular or neurodegenerative changes.

All of the brain samples screened for rabies and Listeriasis were also found negative.

G-1. Target and achievement of receiving Bovine Brain Samples (clinical suspect cases) from different States of ERDDL (April 2014- March 2015)

Sl. No.	Name of the States	Target from clinical suspect case	No of samples received		Shortfall of clinical suspect cases
			Slaughter house	Clinical suspect case	
1.	Bihar	17	10	00	17
2.	Jharkhand	09	-	00	09
3	Orissa	16	-	21	02
4.	Sikkim	05	-	00	05
5.	Tripura	05	-	04	01
6	West	20	120	03	16
7	A & N	02	-	04	-
Total		**74**	**130**	**33**	**51**

G-2. Overall progress of diagnosis of different neurological diseases with special reference to BSE/ TSE diagnosis & surveillance done by ERDDL (Kolkata) (April, 2014 – March, 2015)

Sl.No.	Parameter	Total	Source & Result
1.	Total no. of brains collected	163	Abattoirs & Fields-
2.	Number of brains processed	163	-
3.	Brain to be processed	Nil	-
4.	Number of brain screened for histopathology	163	Negative to BSE hallmark lesion
5.	Total number of brain send for screening of Listeriosis	13	Negative to Listeriosis
6.	Brain examined for Rabies by Seller's staining	22	Negative to Rabies

G-3. Histopathological Interpretation of Bovine Brains (April 14 -March 15)

Sl No.	Histopathological Observation	No. of Brains	Percentage of lesion (%)	Remarks
1.	Total No of Brains collected	163	-	Different Abattoirs & fields of West Bengal, Andaman &Nicobar Island ,Bihar, Jharkand, Orissa ,Sikkim
2.	No. of brains screened	163	-	-
3.	Chronic encephalopathy	03	1.84	Special emphasis should be given for collection of brain samples from clinically suspected cases of, Bihar, Jharkhand, Sikkim as per GOI guideline, otherwise the target will not be completed in future
4.	Vasculo encephalopathy	13	7.98	
5.	Rabiform encephalopathy	Nil	Nil	
6.	Bac./Viral/Toxic infective encephalopathy	Nil	Nil	
7.	Low grade encephalopathy	29	17.79	
8.	Tumors/ cyst/ parasitic lesion	00	00	
9.	No significant lesion except mild degeneration	118	72.39	
10.	Brain under process	Nil		

G-4. Surveillance Point values for samples collected from animals in the given Sub population & age Category in the Bovines of Eastern Region at ERDDL, Kolkata

Summary Table for BSE Surveillance									
April 14 - March 15									
Surveillance Subpopulation									
Age	Routine Slaughter		Fallen Stock		Casualty Slaughter		Clinical Suspect		Total
	Sample	Points	Sample	Points	Sample	Points	Sample	Points	
>1&<2 yrs	-	-	-	-	-	-	-	0	
>2&<4 yrs	03	0.3	-	-	-	-	01	260	
>4&<7 yrs	37	7.4	-	-	-	-	24	18000	
>7&<9 yrs	52	5.2	-	-	-	-	07	1540	
>9 yrs	38	00	-	-	-	-	01	45	
Total	130	6.7	-	-	-	-	33	19485	19851.7

G-6: Audit findings in feed mills producing feed for ruminants (inspections and sampling)

Type of plant	Number of plants	Number of plants in (A) inspected	Total number of visual inspections in (B)	Total number of plants in (B) with infarctions	Total number of inspected plants in (B) with sampling	Total number of plants in (C) with positive test results
	(A)	(B)			(C)	
For ruminants only	5*	3	3	0	0	0
For multi-species	5*	3	3	0	0	0

* State Run Feed Mill Plant In West Bengal 4 Nos and in Orissa 1 No. and this plants do not use MBM in feed

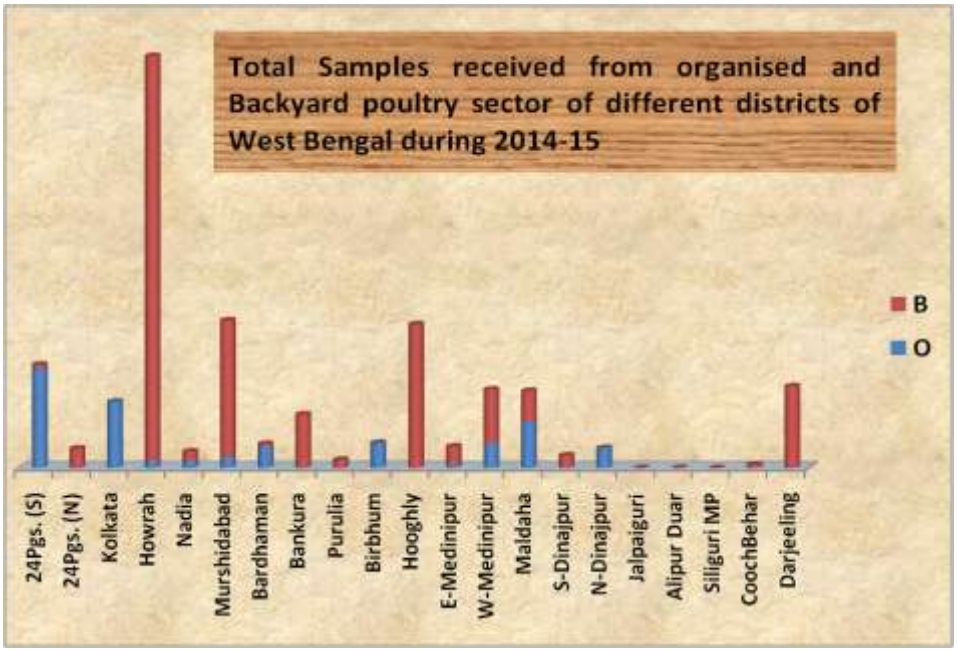
H. Immune status studies on Ranikhet Disease in vaccinated organized and backyard poultry population in the region (as per technical programme 11) **:**

To study immune status in organized poultry farms following scheduled vaccination against Ranikhet disease as well as sero survey work against Pullorum disease were conducted during the period. A total of 3652 no. of serum samples were received from backyard and organized farms of West Bengal, out of which 1326 (36.31%) samples exhibited protectivity against Ranikhet disease.

H-1. Results of serum antibody against Ranikhet & Pullorum diseases :

Source of sample	No. of Sera sample collected	No. of sera sample tested	Test Performed	Result for Ranikhet Disease		Result of Serological test for *S. pullorum*
				Protective (>1:32)	Unprotective (<1:16)	
West Bengal (Backyard and organized Farm)	3652	3652	HA, HI	1326 (36.31%)	2326 (63.69%)	384 samples were shown sero-positive(10.58%) for detection of *Salmonella Pullorum* out of 3652 samples tested
Samples from other States	Nil	Nil	Nil	-	-	-

The absence of development of protective titer to the desired level among immunized birds for R.D. Immune Status Studies may be due to various reasons. The improper maintenance of cold chain, presence of immune suppressive factors (as IBD infection) or other consistent infection may play some role in it.



I. Routine sero-surveillance work and Antigen detection in morbid samples of HPAI in the region (as per technical programme-14 and 15) :

Avian Influenza Laboratory was established to detect an area affected with Avian Influenza in quickest possible time to prevent further spread, also to carry out routine surveillance diagnostic work of Avian Influenza in different states under jurisdiction of RDDL(ER) with the intention to verify that an area is free from Avian Influenza infection or not.

I-1. Work undertaken and Reports during the period :

i. Receiving, cataloguing, pooling and numbering of samples for surveillance of Avian Influenza (Annexure –I, II, VII&VIII).
ii. Serological examination of samples by competitive ELISA for detection of Influenza virus Type A antibody (Annexure – III).
iii. Serological examination of sera samples positive for Influenza Type A viral antibody by Haemagglutination Inhibition (HI) Test for detection of Influenza virus Subtype H5/H7/NDV etc. antibody. (Annexure – IV).
iv. Screening of morbid surveillance samples and detection of viral antigens of Influenza virus Type A by Immuno Chromatographic Test (Anigen® Rapid AIV Test kit) (Annexure –VI).
v. Screening /examination of morbid surveillance samples for Avian Influenza Virus in Embryonated Chicken Eggs (ECE) and HA test (Annexure-V).
vi. Detection of Avian Influenza viral nucleic acid by Real Time RT PCR test in suspected morbid samples of unusual mortality among poultry birds.
vii. Conventional RT-PCR test for detection of Avian Influenza virus if necessary.
viii. Despatch of selected samples to HSADL, Bhopal as directed from competent authority
ix. Preparation of logistics for sample collection like sample transport media, dispensing and distribution to different districts on indent.

Though a total of 46,042 numbers of samples were received in the Laboratory form different states for routine surveillance diagnosis during the period 2014-15 and out which 45,284 numbers of samples were found to be fit for test. Unit-wise analysis of the samples from West Bengal exhibit that all the Blocks, Municipalities and water bodies/ sanctuaries of this state had not been covered during the period 2014-15 and it is expected that in the next year, all districts will give emphasis to meet up their lacunae. The state of Bihar had collected and sent surveillance samples involving more or less all the districts during this period. As per existing new national surveillance plan on Avian Influenza as framed by Government of India each and every state under RDDL(ER) will follow strictly the plan during sample sending. This year no sample received from Sikkim and it is expected next year they will send samples.

The different tests undertaken in the laboratory during the period of April, 2014 to March, 2015 for examination of the sera samples were Competitive ELISA and Hamagglutination Inhibition tests. Of these, AIV Ab ELISA detects Influenza virus (Type A) positive sera while Hamagglutination Inhibition test (using H5/H7/H9/NDV Subtype specific antigen) could detect Avian Influenza virus specific positive sera samples.

The recommended Hamagglutination Inhibition (HI) test (using H5/H7/H9/NDV Subtype specific antigen) was carried out for cross-checking by taking randomly a certain percentage of serum received from different states. A total of 16,242 numbers of serum samples has been screened by ELISA in this year 2014-15.

Hamagglutination Inhibition Test was carried out for screening of the sera samples individually which was a cumbersome task. A certain percentage (5%) of samples which is very less compared to large numbers of serum samples received has been tested by Hamagglutination Inhibition with standard sera for cross checking as well as for calibration and validation of test protocols.

In respect of examination of routine morbid samples, Embryonated Egg Inoculation technique has been done in routine basis and 'Egg Inoculation test' followed by Slide agglutination test and if necessary, Hamagglutination Inhibition test using H5/H7/NDV specific antisera has been carried out. It was observed that the Chromatographic Immunoassay using Anigen® Rapid AIV Ag test kit has a fast and fairly acceptable detection limit. Therefore, initial screening of the morbid samples by this kit can reduce handling of the large number of embryonated eggs. This may allow the laboratory worker to devote more time and energy for subsequent virological examination of the eggs after inoculation with only those samples that exhibited positivity in Chromatographic Immunoassay. We are expecting, the above SOP for handling routine surveillance morbid samples. However, this will need enough number of Chromatographic Immunoassay kits (Rapid AIV Ag test kits) in the year 2015-16. But, disadvantage is - Chromatographic Immunoassay exhibits positive result irrespective of virus survivability.

For examination of morbid samples of unusual mortality, 'Real Time RTPCR test' can be carried out as a quick and confirmatory test for detection of viral nucleic acid of Avian Influenza virus in addition to Egg Inoculation test' and 'Chromatographic Immunoassay'.This proves that the laboratory is ready to handle any unusual mortality samples suspected of HPAI. This proves that it was worth establishing the Pre-Fabricated BSL-III laboratory and its relevant instruments.

Still then, maintaining a BSL-III laboratory is an expensive endeavour. Though standardization of the required techniques for avian influenza diagnosis (involving several costly instruments, chemicals and biological) could be successfully accomplished, utilization of the valuable Pre-Fabricated BSL-III laboratory along with the costly instruments for the purpose of diagnosis of Avian Influenza alone does not stand commendable. Therefore, it is proposed to allow this laboratory for standardization of diagnostic methods for other animal pathogens by molecular techniques.

The activities performed in the laboratory during the period under reporting are tabulated here:

I-1. Details of fit samples received in Avian Influenza Laboratory:

State	Serum			Cloacal Swab			Tracheal Swab			Environmental sample	Faecal sample	Feather sample	TOTAL
	Fowl	Duck	Other	Fowl	Duck	Other	Fowl	Duck	Other				
A&N Islands	0	50	0	317	0	0	319	0	0	0	0	0	**686**
Bihar	172	0	3	1344	7	0	962	0	0	30	21	0	**2539**
Jharkhand	0	0	0	90	0	0	68	0	0			0	**158**
Orissa	1833	174	0	4130	0	0	1471	0	0	213	60	0	**7881**
Tripura	1926	786	0	1080	930	0	1344	156	0		1380	0	**7602**
Sikkim	0	0	0	0	0	0		0	0			0	**0**
West Bengal	5442	5856	0	4468	2502	0	3510	30	0	4545	60	5	**26418**
Total	**9373**	**6866**	**3**	**11429**	**3439**	**0**	**7674**	**186**	**0**	**4788**	**1521**	**5**	**45284**

I-2. Details of Unfit Surveillance samples received in Avian Influenza Laboratory:

State	Unfit Serum		Unfit Swab		Total
	Fowl	Duck	Fowl	Duck	
Orissa	9	0	743	0	752
West Bengal	0	4	2	0	6
TOTAL	**9**	**4**	**745**	**0**	**758**

I-3. Details of Environmental Surveillance samples received in Avian Influenza Laboratory

State	LBM	Backyard	Organized	Total
Bihar	30	0	0	30
Orissa	213	0	0	213
West Bengal	2872	654	1019	4545
TOTAL				**4788**

I-4. Details of Serum Samples tested by ELISA:

State	No. of Fowl serum tested	No. of Fowl positive samples	No. of Duck serum tested	No. of Duck positive samples	Other serum tested	No.of other positive samples	Total Serum tested	Total No. positive samples (influenza type A)
A &N Islands	0	0	50	0	0	0	50	0
Bihar	172	0	0	0	3	0	175	0
Jharkhand	0	0	0	0	0	0	0	0
Orissa	1833	0	174	0	0	o	2007	0
Tripura	1926	0	786	0	0	0	2712	0
West Bengal	5442	0	5856	0	0	0	11298	0
Total	**9373**	**0**	**6866**	**0**	**3**	**0**	**16242**	**0**

I-5. Details of Serum samples tested by Haemaglutination Inhibition test :

State	Fowl serum	No. of Fowl positive samples	Duck serum	No. of Duck positive samples	Total No. of Positive sample
A N Islands	0	0	5	0	0
Bihar	10	0	0	0	0
Jharkhand	0	0	0	0	0
Orissa	50	0	10	0	0
Tripura	50	0	20	0	0
West Bengal	150	0	150	0	0
Total	**260**	**0**	**185**	**0**	**0**

I-6. Details of Morbid samples tested by Egg Inoculation Technique in the Avian Influenza Laboratory :

State	Fowl	No. of +ve samples	Duck	No. of +ve samples	Other	No. of +ve samples	Total Morbid samples	Total No. of +ve samples
A N Islands	**636**	**0**	**0**	**0**	**0**	**0**	**636**	**0**
Bihar	2306	0	7	0	51	0	2364	0
Jharkhand	158	0	0	0		0	158	0
Tripura	2424	0	1086	0	1380	0	4890	0
Orissa	5601	0	0	0	273	0	5874	0
West Bengal	7978	0	2532	0	4610	0	15120	0
Total	**19103**	**0**	**3625**	**0**	**6314**	**0**	**29042**	**0**

I-7. Details of Morbid samples / Harvested Allantoic Fluid tested by Chromatographic Immunoassay in Avian Influenza Laboratory :

State	Total Morbid samples tested	Total No. of +ve samples
Bihar	50	0
Jharkhand	10	0
Tripura	100	0
A&N Islands	10	0
Orissa	60	0
West Bengal	200	0
TOTAL	**430**	**0**

I-8. Details samples sent to other Laboratory for Diagnosis (as directed by competent Authority) **:**

Sl . No.	State from which sample sent	Details of sample	Date of sending with No.	Sent to
1	West Bengal	50 serum samples(21 Fowl sera and 29 Duck sera)of Routine surveillance	Vide No-317 Dated13/05/15	Director, NIHSADL, Bhopal
2	West Bengal	50 serum samples(21 Fowl sera and 29 Duck sera)of Routine surveillance	Vide No-318 Dated13/05/15	Director, NIV, Pune

I-9. Details of total samples at a glance :

Particulars	No.
Total no. of Routine surveillance samples received in the for the year 2014-15 in Avian Influenza laboratory	46042
Total Routine Surveillance Samples found fit for test and hence tested in the Laboratory in 2014-15	45284
Total Routine surveillance samples found unfit for test in 2014-15	758
GRAND TOTAL (Samples Received In The Laboratory)	**46042**

J. Detection of Mycotoxin and Proximate Analysis of Animal and Poultry feed/feed ingredients (as per technical programme-18):

Mycotoxin and Proximate Analysis Lab. at IAH &VB (R&T) Kolkata is engaged in regular manner in the analysis of various feed and feed ingredients for various parameters like Moisture, Ash, Fibre, Fat etc. as per requirement of the farmers/farms using Sox Tech and Fiber Tech. No feed samples were received for proximate analysis during the year 2014-2015 at IAH&VB (R&T), Kolkata. Feed sample had been analysed for mycotoxin in HPLC Laboratory.

K. To develop analytical facilities of pesticides, antibiotics and chemical residues in Livestock & poultry products (as per technical programme-19):

As per mandate of RDDL(ER), pesticides, antibiotic and drug residues in livestock and poultry products are to be determined. For the purpose, a laboratory is established and the necessary equipments like HPLC, standards chemicals and reagents have already been procured earlier. Now the laboratory is functioning with the following activities.

K-1. Standardization of Pesticides:

Standardization of the pesticides like Cypermethrin, Deltamethrin, Endosulfon, Quinalphos, BHC Malathion, Monocrotophos and Phosphomidon has been done

K-2. Standardization of Mycotoxins :

Standardization of Mycotoxins like Aflatoxin-B1, B2, M1, G2 and Ochratoxin has been standarized .

K-3. Sample analysis :

Fifty four (54) no tissue sample for analysis of Pesticides and nineteen (19) no. of feed samples for Mycotoxin analysis has been done during the period. Sample analysis report is as follows :

No. of Sample	Nature of Sample	Purpose	Analytical Results
19	Feed materials from Govt. Poultry Farms & Tissue materials from DI Lab.	Mycotoxin Analysis	Detected Aflatoxin B1, B2, G2, M1 and Ochratoxin found below Permissible Limit
54	Tissue sample from Bacterial Disease Lab., DI Lab., from different District of west Bengal and from other States	Pesticide Residue Analysis and findout non-infectious causes of death.	**Two samples found positive for Malathion** & **Endosulfon** etc. and others are negative.

L. Study of Nutritional Status in infertility cases (as per technical programme-20) :

Central Instrumentation Lab. of RDDL (ER), Kolkata as per technical programme received/ collected 1133 no. of samples from different sources of West Bengal and other states under jurisdiction of RDDL(ER) for Biochemical Assay for the year 2014-15.

L-1. Sample received during 2014-15 :

Bovine	Caprine	Canine	Poultry	Wild animals	Horse	Total	Invalid sample	Sample assayed for Nutritional status and routine biochemical assay
314	-	5	-	15	-	334	4	282

L-2. Test for individual Biochemical & Hematological Parameters :

TP	ALB	CA	P	CHL	CRT	ALT	AST	Hematology	**TOTAL**
83	274	176	265	5	9	9	5	8	**834**

Abbreviation used : **TP**- Total Protein, **ALB**-Albumin; **CA**- Calcium; **P**- Phosphorus (Inorganic); **CHL**- serum Cholesterol; **CRT**-Creatinine; **ALT**-Alanine aminotransferase; **AST**-Aspartate aminotransferase

L-3. Parameterwise results (Bovine) :

Parameter	Total no. of test done	Normal	Nutrient Deficient/ Metabolic Insufficiency
TP	75	34	41
ALB	261	196	65
CA	176	176	0
P	264	176	88

M. Soil testing of Anthrax Spore in the Endemic area (as per technical programme- 21) :

M-1. Screening of soil samples for *B. anthracis* :

Soil samples were received from different parts of the state & outside of the state from the surface of the soil contaminated by the terminal discharge of the suspected animals or from endemic zone of anthrax and processed for isolation of *B. anthracis* spores as per the methods of OIE, 2004.

Seven soil samples were received from West Bengal and rest twenty five soil samples were received from outside state (Orissa). Out of 32 samples processed,,one soil sample (from Koraput, Odisha) was found positive.

Details of Soil sample Processed :

Sl No.	Source Of Samples	No. Of Samples Received	Positive	Negative
1.	Midnapore Sadar, Paschim Midnapore	1	-	1
2.	Nabadwip,Nadia	1	-	1
3.	Tehatta-Ii,Nadia	2	-	2
4.	Kaliganj,Nadia	2	-	2
5.	Monteswar, Burdwan	1	-	1
6.	Lakshmipur, Odisha	2	-	2
7.	Boipariguda, Odisha	2	-	2
8.	Lamtaput, Odisha	3	-	3
9.	Ranikana Maliguda, Odisha	2	-	2
10.	Rajgangpur, Odisha	7	-	7
11.	Nandiguda, Odisha	3	-	3
12.	Gumaguda, Odisha	1	-	1
13.	Rugudisahi, Odisha	1	-	1
14.	Makaguda, Odisha	2	-	2
15.	Nandapur,Koraput, Odisha	1	1	-
TOTAL		**32**	**1**	**31**

N. Testing of Export Materials (as per technical programme-22) :

A total 102 nos. of sample was received from different sources through Regional officer (ER) Animal Quarantine and Certification Services, NSCBI Airport, Kolkata for testing. All the samples were tested as per the methods of OIE using specific media. All of 102 no. of samples were negative to Bacillus anthracis.

O. Maintenance repository of infective agents isolated from the Eastern region (as per technical programme-23) :

Work has been undertaken to maintain different bacterial and viral agents in this laboratory as State Repository. Following infectious agents so far isolated and identified are maintained as state repository as per mandate of RDDL.

O-1. Maintenance of Bacterial agents :

A good number (377) of bacterial isolates from different clinical and environmental samples are maintained by subculture in artificial media in this section as State Repository.

Sl. No.	Name Of Bacterial Agent	Maintained By		Isolated From
		Routine Subculture In Artificial Media	No. Of Isolate	
01	Typed *Escherichia coli*	-Do-	38	Poultry, Love bird, Goat, Pig, Rabbit, Garole Sheep etc.
02	*Escherichia coli*	-Do-	107	Poultry, Pheasant, Black Swan, Badrika, Kuroiler, Dog, Garole Sheep, Cocktail, Bovine, Ostrich, Kangaroo, Tiger, Rabbit, Spoonbill, Swamp Deer, Wild Elephant, Languor etc.
03	Screened *Escherichia coli*	-Do-	22	Poultry
04	*Escherichia coli*	-Do-	11	Solely from wild animals
05	Typed *Salmonella* sp.	- Do -	30	Poultry , Cat, bovine etc.
06	*Salmonella* sp.	-Do-	42	Poultry, bovine, caprine, etc.
07	*Proteus Sp.*	-Do-	17	Dog, poultry, Rabbit, etc.
08	*Pasteurella multocida*	- Do -	13	Duck, Cattle , Buffalo, Poultry
09	*Pasteurella haemolytica*	- Do -	01	Pin tailed duck
10	*Bacillus anthracis*	- Do -	37	Cattle, Goat, Soil.
11	*Pseudomonas* sp.	- Do -	19	Dog, Pig, Poultry.
12	*Streptococcus* sp.	- Do -	6	Milk.
13	*Staphylococcus* sp.	- Do -	28	Horse, Tiger, Deer, cattle etc.
14	*Listeria monocytogenes*	- DO -	02	American Type Culture Collection (ATCC), Bovine etc.
15	*Staphylococcus aureus* (Cowan Strain)	- Do -	02	Microbial Type Culture Collection, Chandigarh.
16	*Streptococcus agalactiae*	- Do-	01	ATCC
20	*Salmonella pullorum* Strain -17	-Do-	01	Avian
TOTAL			**377**	

O-2. Maintenance of Viral agents:

In our laboratory we are maintaining the following viral agents isolated from poultry and duck origin using Embryonated eggs..

Sl No.	Name Of Viral Agent	Isolated From	Maintained In
01	RDV	Poultry	Hens' embryo
02	DPV	Duck	Ducks 'embryo

P. Organizing training programme for veterinary & para-veterinary work force (as per technical programme -24) :

Training Programme on Bovine Spongiform Encephalopathy was held on 11-12 February, 2015 in this Institute with the participating officers of different States under jurisdiction of RDDL(ER).

Deleted: c

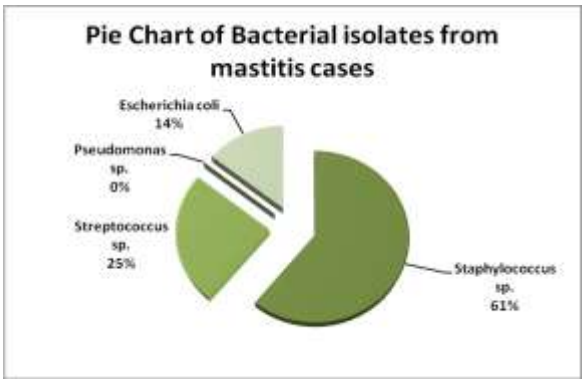
Q. Preparation of different audio-visual presentation for mass-awareness of vets/para vets and common people among economically important livestock & poultry diseases (as per technical programme -25) :

No such activities were done.

R. Detection of Microbial causes responsible for clinical and sub- clinical Mastitis and its anti-biogram (as per technical programme-26):

To identify the early and latest cases of Mastitis and causal agent, Mastitis Control Unit of this Institute received/collected 462 samples from different organized and private farms. A total of 245 samples showed positive. The test results are depicted in the following table –

Tested at	Total sample received/ collected	Sample subject to screening	Result of screening		Organisms Isolated					
			+ ve	- ve	*Staphylococcus* sp.	*Streptococcus* sp.	*P. aeruginosa*	*E. Coli*	Others	TOTAL
IAH&VB (R&T), Kolkata	462	462	245	217	81 (61%)	33 (25%)	-	19 (14%)	-	133



S. Monitoring of the state sponsored schemes on Disease Investigation (as per technical programme-27) :

Activity of the Disease Investigation Laboratory is disease investigation, diagnosis, confirmation and suggestion on the basis of post-mortem examination, microscopical findings, identification and other studies including the activity of the wing, i,e Wildlife Disease Diagnostic Laboratory (WLDDL).

This laboratory as a whole providing ample of works on disease investigation as well as research in Veterinary field. This unit engaged with activities in collaboration with Research Laboratory on Bacterial Diseases (RLBD); Diagnostic Bacteriology and Mycology Lab; Diagnostic Virology Lab.; Diagnostic Pathology Lab; Diagnostic Parasitology; R.D Immune Status Lab; Central Instrumental Lab; N.P.R.E Lab; Infectious Abortion Scheme Lab; Avian Influenza Lab; High Performance Liquid Chromatography (HPLC) Lab. and other laboratories of the Institute / RDDL (ER) for speedy diagnosis and control of the different diseases of animals / birds including poultry with wild animal / birds.

S-1. P.M Examination of different Poultry birds :

Type of cases	Duck	Turkey	parrot	Pigeon	Fowl								
Month					Broiler	Colour Broiler*/ Kroiler	Cockrel	RIR	Layer	Red jungle Fowl	Vana-raja	Harin-Ghata-B.F.	ND*
April	-	-	1	-	141	-	-	-	-	1	-	-	-
May	-	1	-	-	130	2	-	16	-	-	-	-	-
June	-	-	-	-	85	-	-	9	-	-	-	-	-
July	-	-	-	2	106	-	-	-	-	-	-	-	2
Aug.	1	4	-	-	115	-	-	1	-	-	-	-	-
Sept.	-	-	-	-	73	-	-	-	-	-	-	-	-
Oct.	5	-	-	-	72	8	-	1	-	-	-	-	-
Nov.	1	-	-	-	66	-	-	-	-	-	-	-	-
Dec.	1	-	-	2	31	-	-	-	-	-	-	-	2
Jan.	-	-	-	-	117	-	-	-	-	-	-	-	3
Feb.	2	-	-	-	96	-	-	-	-	-	-	-	2
Marh	4	-	-	-	231	5	-	19	-	-	-	7	6
Total	**14**	**5**	**1**	**4**	**1263**	**15**		**46**		**1**		**7**	**15**

* Non-descriptive

S-2. P.M Examination of Small and Lab. animals :

Type of cases	Small animals			Laboratory animals		
April	Pig	Dog	goat	Rabbit	Guinea-pig	Albino mice
May	-	-	-	-	-	-
June	2	-	-	3	-	4
July	-	-	3	-	-	-
Aug.	-	-	-	2	-	-
Sept.	2	-	1	3	1	-
Oct.	2	-	-	2	2	-
Nov.	-	-	-	5	-	-
Dec.	-	-	-	2	-	-
Jan.	-	-	-	4	7	-
Feb.	-	-	-	1	3	-
Marh	-	-	-	2	1	-
April	-	-	-	-	11	-
Total	**6**		**4**	**24**	**25**	**4**

S-3. Necropsy (Post mortem) findings/Suggestive diseases of Poultry :

Type of P.M lesions	Progressive Total
Air-sacculitis	04
Amonia Intoxication	-
Anaemia & Immunosuppression	15
Ascitis	19
Ascitis-Hydropericardium	-
Ascitis-Hydropericardium - Hepatitis-Nephritis Syndrome	42
Baby Chick Nephropathy	5
Bacterial Septicemia	40
Bursitis & Nephritis	5
Chicken Infectious Anaemia (CIA)	2
Colibacillosis/ Colisepticaemia / Coli-granuloma	88
CRD / CCRD	22
Coccidiosis / Scl. Coccidiosis	82
Coccidiosis & Enteropathic infection	3
Debility & Stress & Immunosuppression	7
Digestive / Metabolic disorder & Stress	16
Deficiency diseases & Stress	-
Deficiency Syndrome/ Nutritional Disorders	7
Enteritis & Nephritis	1
Enteritis & Hepatitis	9
Fatty Liver Kidney Syndrome (FLKS)	4
Gangrenous Dermatitis / Wing Rot	7
Gizzard Erosion	1
Heat Stress / Severe Dehydration	9
Helminthiasis (Ascariasis, Capillariasis, Cestodeasis etc.)	1
Hemorrhagic Proventriculitis	21
Hemorrhagic Proventriculitis & Bursitis	9
Hepatitis & Enteritis	-
Hydropericardium (Leechi Heart) & Nephritis	5
Hydropericardium-hepatitis/ nephritis syndrome	6
IBD / Scl. IBD	3
Immunosuppression & Stress	18
Infectious Bronchitis (Cl. / Sub.Cl.)	45
Infectious Coryza	23
Infectious Stunting Syndrome (ISS)	-
Mycotic Pneumonia/ Systemic mycosis	28
Mycotic Pneumonia & Coligranuloma	5
Managemental / Environmental / Other Stress	47
Mycotoxicosis & Immunosuppression	-
Nephritis & Hepatitis	58
Nephritis & RTI	10
Necrotic Enteritis	1
Omphalitis	20
Pasty vent	-
Perihepatitis & Pericarditis	39
Perihepatitis & Nephritis	6
Pericarditis & RTI	1
Poisoning / Intoxication (Carbon Monoxide / Ammonia / Drug Toxicity etc.)	1
Pox (Avian Pox)	6
Ranikhet Disease	81
Respiratory Tract Infection (RTI – LRTI / URTI)	33
Rectal / Intestinal Impaction / Esophageal Obstruction etc	-
Salmonellosis	37
Sudden Death Syndrome	1
Swollen Head Syndrome	-
Visceral Gout / Articular Gout	43
Visceral Gout & Nephritis	22

S-4. Wildlife samples for post-mortem examination :

Sl.No	Type / Species of Wild animals / birds	PM done (Nos.)	P.M and Lab. Observation
WILD BIRDS : (09)			
1.	Love Bird	2	NDV
2.	Badrigar	3	Enteritis
3.	Cockateil	2	NDV
4.	Wild Eclectus bird	1	NDV
5.	Lutino fisher	1	Injury
REPTILES : (06)			
1.	Snakes	6	Decomposed
MAMMALS: (03)			
1.	Common Langur	2	Suspected poisoning
2.	Snow leopard	1	No organism detected
TOTAL		**18**	

S-5. Postmortem Materials & isolates sent/analyzed at different laboratories:

Sl. No.	Type of Material Sent/ Cultured	Name of the Section	Agent Identified / Findings (as per report received)
1.	PM Materials / Bacterial isolates / Impression Smear & Blood Slide	Research Laboratory on Bacterial Disease/Specialist , Diagnostic Bacteriology Lab., ERDDL	*E.coli*.- 88 *Salmonella sp*.- 37
2.	PM Materials	RLBD Lab.* / Diag. Virology Lab., ERDDL	New Castle Disease Virus (NDV) – 81 Infectious Bursal Disease Virus (IBDV) -18 Infectious Bronchitis Virus (IBV) – 23 Avian Pox (Turkey Pox) Virus – 06 CRD-22
3.	Tissue materials for HP	Diag. Path. Lab.	Positive findings according to HP study : (a)Nephritis & Gout (b) Cardiac myopathy (c) FLKS (d) Bursitis (e) Encephalopathy (f) Mycotic pneumonia
4.	Tissue materials	HPLC Lab.	Aflatoxin

S-6. Month wise Samples Received for Laboratory Examination at BTTCU :

Month & Year	Types of sample received						Total
	Blood slides	Impression smear	Faecal sample	Skin scrap.	Ecto-parasite	Others (Whole Blood)	
April	37	-	-	-	-	03	40
May	42	-	25	-	-	01	68
June	62	05	01	-	-	-	68
July	75	-	50	08	-	-	133
Aug.	91	05	76	-	-	05	177
Sept.	82	-	30	-	32	02	146
Oct.	62	-	-	-	-	20	82
Nov.	35	-	01	01	08	-	45
Dec.	98	-	09	-	-	-	107
Jan.	64	-	-	-	-	-	64
Feb.	20	-	57	01	40	-	118
Marh	31	-	89	01	-	-	121
Total	**699**	**10**	**338**	**11**	**80**	**31**	**1169**

S-7. Type of Parasites identified at BTTCU :

(A) Haemoparasite Parasite

Sl. No.	Name of the Haemoparasite	Animal Infected
1.	Schizont and piroplasm of Theileria annulata	Deshi Cow
2.	Schizont of Theileria annulata in WBC	C/B Cow
3.	Babesia bovis	Cow
4.	Anaplasma central with Theileria annualata	CBJ cow,

(B) Eggs /Ova of Helminth

Sl. No.	Name of Helminthic eggs/ova	Animal Infected
1.	Strongyles sp.	Goat
2.	Amphistome sp.	Cattle & Goat
3.	Fasciola sp.	Goat
4.	Monezia sp.	Cattle
5.	Trichuris sp.	Cattle
6.	Strongyloides sp.	Cattle
7.	Haemonchous sp.	Goat

(C) Oocyst of Protozoa

Sl. No.	Name of the Protozoan Oocyst/ cyst	Animal Infected
1.	Oocyst of Eimeria sp.	Poultry
3.	Cyst of Blanatidium coli	Cattle

(D) Ticks/ Mites

Sl. No.	Name of Ticks/	Animal Infected
1.	Demodex canis	Dog
2.	Rhipicephalus microplus	Cattle, Goat
3.	Haemophysalis bispinosa	Cattle
5.	Boophilus microplus	Cattle
6.	Hyalomma anatolicum anatolicum	Cattle

T. Monitoring of Centrally sponsored scheme like NPRE and State ELISA Lab. AICRP on FMD and Animal Disease Surveillance (as per technical programme-28,12) :

T-a. Report of Paste-Des-Petits Ruminants (PPR) Diagnostic Laboratory :

Established in 1997, the State ELISA Laboratory of Institute of Animal Health & Veterinary Biologicals (R&T) has been providing confirmatory diagnosis for Peste-des-Petits Ruminants (PPR), a highly infectious disease of sheep and goats. During the year 2014-2015 total 299 nos. samples were tested for antigen and 154 nos. Samples were found positive. Samples were collected as Nasal Samples, Ocular Samples, Buccal Samples, Rectal Swab and Post Mortem materials.

T.a-1. Diagnosis of Peste des Petits Ruminants (PPR) at a glance :

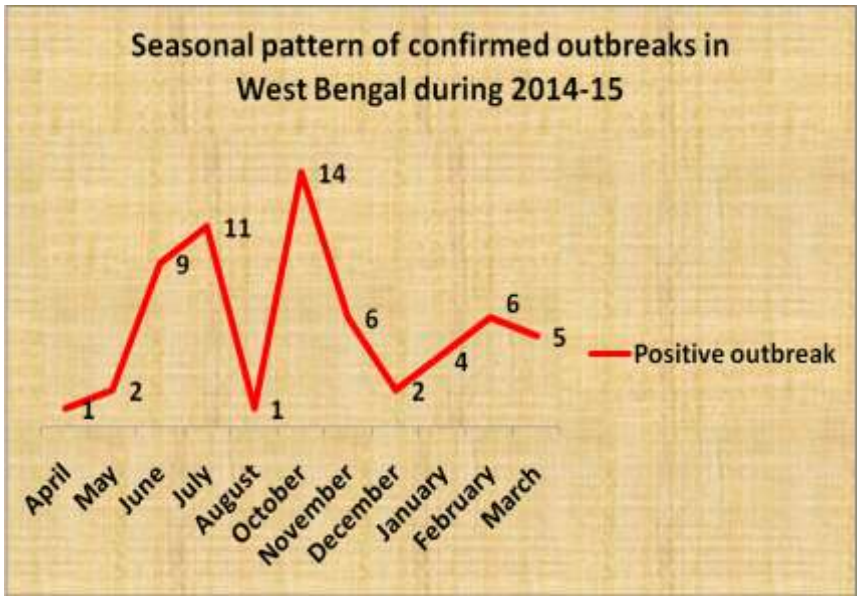
No. of outbreaks for which samples turned positive to PPR	71
Total no. of samples tested for antigen:	299
Total no. of samples found positive to PPR:	154
Total no. of districts of West Bengal in which PPR was documented:	14
Total no. of PPR samples received only in West Bengal:	237
Total no. of samples found positive to PPR only in West Bengal:	117
Total no. of suspected outbreak reported from West Bengal:	105
Total no. of positive outbreak reported from West Bengal:	61
Total no. of suspected outbreak reported from outside state:	11
Total no. of positive outbreak reported from outside state:	10
Total no. of serum samples screened for antibody to PPR virus	1158
Total no. of post vaccination serum samples screened for antibody to PPR virus	456
Total no. of post vaccination serum samples found positive for antibody to PPR virus	352

T. a-2. Outbreak & Samples Receipt Pattern of PPR in different Districts of West Bengal during 2014-15 :

Sl. No.	Name of Districts	No. of samples received	No. of positive samples	Suspected outbreaks	Positive outbreaks
1.	Bankura	36	17	15	9
2.	Birbhum	23	4	23	4
3.	Burdwan	13	9	10	8
4.	Cooch Behar	No samples received			
5.	Dakshin Dinajpur	12	11	2	2
6.	Darjeeling	No samples received			
7.	Hooghly	10	4	6	4
8.	Howrah	45	26	18	12
9.	Jalpaiguri	16	5	8	4
10.	Kolkata	2	2	1	1
11.	Malda	40	21	8	6
12.	Murshidabad	No samples received			
13.	Nadia	12	8	5	5
14.	North 24 Parganas	5	3	2	1
15.	Paschim Medinipur	5	2	2	1
16.	Purba Medinipur	No samples received			
17.	Purulia	8	4	4	3
18.	South 24 Parganas	No samples received			
19.	Uttar Dinajpur	10	1	1	1
Total		**237**	**117**	**105**	**61**

T. a-3. Seasonal Outbreak Pattern of PPR (confirmed) in West Bengal during 2014-15 :

The diagrammatic representation on the matter is as follows :



T.a-4 Seasonal outbreak Pattern of PPR in the region during 2014-15

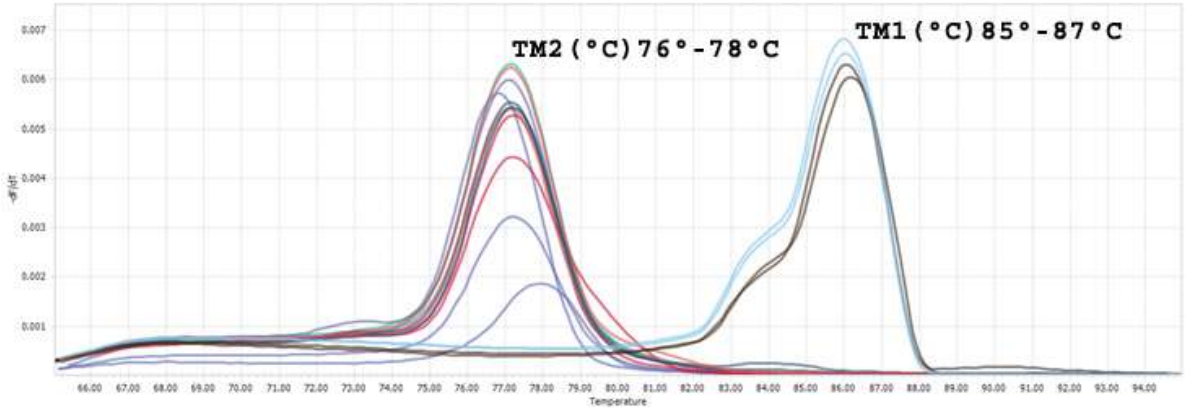
Month	Total Outbreak Reported	Positive Outbreak	
		Within State	Outside state
April	10	1	0
May	7	2	0
June	20	9	0
July	19	11	0
August	4	1	1
October	18	14	0
November	11	6	3
December	2	2	0
January	5	4	1
February	7	6	0
March	14	5	5 (Tripura-3,Odisha-1,Sikkim-1)
TOTAL	**117**	**61**	**10**

T.a-5. Type of Samples positive for PPR during 2014-15 :

Type of Samples	Positive Samples	Negative Samples	Total samples	Percentage of samples positive
Nasal Samples	122	110	232	52.59%
Ocular Samples	11	16	27	40.74%%
Buccal Samples	8	11	19	42.10%%
Rectal Swab	8	7	15	53.33%%
Post Mortem materials	2	0	2	100%
Serum	3	1	4	75%
Total	**154**	**145**	**299**	**51.50%**

T.a-6. Standardization of RT-PCR technique for diagnosis of PPR infection :

RT–PCR technique was standardized for diagnosis of PPR infection as per plan of work proposed for 2013-14. Standardization of rRt-PCR (real time RT-PCR) using sybr green assay (melt curve analysis) has been undertaken in the year 2014-15.



Melt peak analysis of PPRV M gene amplified products by RT –PCR Sybr green assay

Sample Name	Gene Name	TM1 (°C)	TM2 (°C)	Dye
PPRV POS	PPRVM gene	86.02	-	SYBR Green I
PPRVsample3	PPRVM gene	86.28	-	SYBR Green I
PPRV POS	PPRVM gene	85.95	-	SYBR Green I
PPRVsample3	PPRVM gene	86.13	-	SYBR Green I
PPRVsample1	PPRVM gene	-	77.18	SYBR Green I
PPRVsample5	PPRVM gene	-	77.19	SYBR Green I
PPRVsample1	PPRVM gene	-	77.11	SYBR Green I

PPRVsample5	PPRVM gene	-	77.13	SYBR Green I
PPPVsample2	PPRVM gene	-	77.15	SYBR Green I
PPRVsample6	PPRVM gene	-	77.14	SYBR Green I
PPPVsample2	PPRVM gene	-	77.21	SYBR Green I
PPRVsample6	PPRVM gene	-	77.13	SYBR Green I
NTC	PPRVM gene	-	77.20	SYBR Green I
NTC	PPRVM gene	-	77.18	SYBR Green I
NTC	PPRVM gene	-	77.19	SYBR Green I
NTC	PPRVM gene	-	77.17	SYBR Green I

T.b. Activity Report of AICRP on FMD Laboratory :

Technical Summary of the Project Work

The Laboratory of AICRP on FMD has been established in Kolkata with a view to the objectives are to conduct Epidemiological studies on Foot and Mouth disease in the state of West Bengal. These include geographical distribution, seasonal trend of different FMD Virus types associated with the disease and the various factors associated with origin, course and development of outbreaks including the incidence of FMD in organized farms, also monitoring the immunity status of animals where regular vaccination is undertaken.

The Regional Centre performs the following Technical programme as per ICAR mandate**:**

(A) Epidemiological Studies ;

1. Number and distribution of various susceptible animals at risk.
2. Morbidity and Mortality pattern of different age group.
3. The seasonal trend of the disease and routes of migration of animals.
4. Studies on correlation between the outbreak of the disease and the migratory routes of the animals.
5. Determination of relationship of environmental factors viz. temperature, relative humidity and rainfall with the incidence of FMD outbreak.
6. Source and mode of spread of FMD outbreaks.
7. Estimation of economic losses due to the disease as per ICAR guidelines.

(B) Virological studies ;

1. Typing of FMD virus from collected field samples by Sandwich ELISA technique.
2. Sero-surveillance study by Liquid Phase Blocking (LPB) ELISA as a component of National FMD Sero-Surveillance Programme.
3. Sero-conversion study by LPB ELISA for West Bengal.
4. Assessment of quantitative sero-epidemiology from randomly collected sera samples.
5. Study of carrier status of infection and latency of the virus in bovines through detection of Anti-3AB3 NSP antibodies by DIVA (differentiation of infected from vaccinated animals) ELISA.
6. Regular transmission of collected field materials along with epidemiological data and test results to the Central FMD Lab., Mukteswar for genetic characterization of the virus.

T.b-1. FMD Outbreaks in West Bengal :

No. of confirmed outbreak	Type virus involved				No. of samples tested	Type virus involved				
	O	A	C	Asia-1		O	A	C	Asia-1	No Virus Detected
11	10	-	-	01	27	21	-	-	01	05

T.b-2. Sero monitoring under National Sero Surveillance Programme (Random samples)

Name of the State	Species of Animals	Total No. of serum samples received (Prevac+ Postvac)	Total No. of serum samples tested (Prevac+ Postvac)	Positive Titer			Remarks
				O	A	Asia-1	
West Bengal	Cattle	3454	64	36	22	13	3390 samples sent to PD, FMD, Mukteswar. Results were not received at the time of reporting
Sikkim	Cattle	39	39	39	18	37	
Total		**3493**	**103**	**75**	**40**	**40**	

T.b-3. Results of DIVA test of the samples randomly collected from different districts of West Bengal

Name of the State	Species of animals	Total no. sera samples received for DIVA	Total no. sera samples tested for DIVA	DIVA (+)ve	DIVA (-) ve	Remarks
West Bengal	Cattle	3454	808	127	681	2646 samples sent to PD, FMD, Mukteswar. Results were not received at the time of reporting
SDDL of other states	-	Nil	–	–	-	
Total		**3454**	**808**	**127**	**681**	

U. Molecular Biological Diagnosis at a glance (as per technical programme-12, 13)

Standardization of molecular biological diagnostic techniques for different pathogens of livestock and poultry diseases other than Avian Influenza has been taken during the year 2014-15. PCR based detection at RDDL(ER) during the said period is summarized below:

Sl. No.	Source of samples	Total No. of Samples examined	No. of positive Samples	No. of Negative Samples	Type of organisms to be identified
1.	West Bengal	02	02	-	*Babesia sp*
2.	Sikkim	19	12	07	*Anaplasma sp*
3	West Bengal	02	-	02	*Theileria sp*
4	West Bengal	14	13	01	*Bacillus anthracis*
5	Odisha	75	21	54	*Bacillus anthracis*
6	West Bengal	01	01	-	*Pasteurella multocida*
7	West Bengal	04	04	-	*Mycobacterium tuberculosis*
8	Odisha	20	20	-	*Mycoplasma myocoides var caprae*
9	A & N Islands	112	100	12	*Mycoplasma myocoides var caprae*
10	West Bengal	02	-	02	*Mycoplasma gallisepticum*
11	Bihar	02	02	--	Classical swine Fever Virus
12	West Bengal	08	08	--	Classical swine Fever Virus
13	West Bengal	01	01	--	Goat Pox virus
14	West Bengal	01	--	01	Blue tongue virus
15	West Bengal	03	03	--	New Castle Disease Virus
16	A & N Islands	50	--	50	Duck Viral Hepatitis & Duck Viral Enteritis
17	Sperm Stations, West Bengal	770	11	759	Bovine Herpes Virus -I
18	Bihar Livestock Dev. Agency, Patna, Bihar	152	30	122	Bovine Herpes Virus- I
TOTAL		**1238**	**228**	**1010**	

TECHNICAL PROGRAMME & ANNUAL ACTION PLAN
FOR RDDL (ER), KOLKATA

2015-2016

1. To provide referral and consultancy services to the state diagnostic laboratories for economically important Livestock and poultry diseases.

2. Development of epidemiological Data Bank including epidemiological maps of economically important livestock diseases of the region.

3. Screening of Bulls, teaser animals and bovine semen against sexually transmitted diseases including estimation of microbial load in Frozen Semen Straw in the region.

4. qPCR based diagnosis with special reference to detection BoHV-1 in bovine semen sample.

5. Multiplex PCR for diagnosis of Brucella sp.

6. Surveillance work of infectious causes of abortion in Livestock population in organized farm and in the rural areas.

7. Surveillance work on BSE based on Histopathological studies and ELISA based diagnosis of brain samples (as per target of Govt. of India).

8. Screening of brain samples from Bovine Sp. exhibiting neurological disorders for Listeriosis.

9. Immune status studies on Ranikhet Disease in vaccinated organized and backyard poultry population by ELISA technique.

10. Application of molecular biological techniques for routine diagnosis of different livestock & poultry diseases (other than Avian Influenza) with special reference to Capri pox , PPR ,Classical Swine Fever, Duck Viral Enteritis , Duck Viral Hepatitis, New Castle Disease, Brucellosis, Listeriosis,. Anthrax, HS, CCPP, Tuberculosis. etc.

11. Routine application of PCR techniques for diagnosis of haemoprotozoan infection in cattles like Babesiosis, Anaplasmosis,and Theileriosis etc.

12. Routine Sero-surveillance work and antigen detection in morbid samples of HPAI.

13. Surveillance of Avian Influenza virus as per guideline of Govt. of India and framed surveillance strategies adopted by different states under jurisdiction of RDDL (ER), Kolkata.

14. Diagnosis of Rabies infection in post-mortem material by immuno-chromatographic technique.

15. Standardization of ELISA technique for detection of Mycotoxin in animal and poultry feed.

16. Proximate Analysis of animal and poultry feed.

17. To impart analytical facilities of pesticides, antibiotics and drug residues in livestock and poultry products by HPLC.

18. A) Study of nutritional status in infertility cases.
    B) Clinical Haematology and Bio-chemistry to aid disease diagnosis.

19. Soil testing of Anthrax spore in the endemic area.

20. Testing of export materials as per OIE protocol.

21. Maintenance of Repository of infective agents isolated from the Eastern Region.

22. Organizing training programme for veterinary & para-veterinary work force.

23. Preparation of different Audio-visual presentation for Mass awareness of vets/para-vets and common people against economically important livestock and poultry diseases.

24. Detection of microbial agents responsible for clinical and sub-clinical mastitis and its antibiogram.

25. Monitoring of State Sponsored Scheme on disease investigation.

26. Monitoring of Centrally Sponsored Scheme of NPRE/AICRP on FMD.