NATIONAL VETERINARY RESEARCH INSTITUTE (NVRI) VOM

2024 ANNUAL REPORT

OUR MANDATE

A) Conduct research into all aspects of animal diseases, their treatment and control.
B) Develop and produce animal vaccines, sera and biological to meet the national demand.
C) Provide surveillance and diagnosis of animal diseases.
D) To introduce exotic stock for improving egg, meat and milk production.
E) Provide extension services and publications to poultry and livestock farmers.
F) Train Intermediate manpower in Veterinary and Medical Laboratory Technology and Animal Health and Production Technology

OUR MISSION

To conduct research, disease surveillance, diagnosis, development and production of vaccines and biological for the control of animal and zoonotic disease, applying modern technology based on international best practices.

OUR VISION

To be the Apex Veterinary Research Institute in Africa driven by excellence in Research, Diagnosis, Vaccine Development and Production.

OUR Core Values

Excellence: Products and services that meet international standard and customer satisfaction.

Integrity: Good conduct and character in service delivery

Networking & Collaboration: To establish good working relationships, sharing information and resources with Institutions and Organisations.

Accountability: Responsibility and Commitment.

Publications and Seminar Committee members

Dr. NI Ogo	Chairman
Mr. J Gotep	Member
Mrs. P Madu	Member
Dr. SI Tekki	Member
Mr. AU Samme	Member
Dr. AR Jambalang	Member
Dr. MB Bolajoko	Member
Dr. EI Leo	Member
Dr. G Forcados	Member
Dr. K Anyika	Member
Dr. B Dogonyaro	Member
Dr. AJ Adedeji	Member
Dr. Dorcas Gado	Member
Mr. Hussaini Isa N	Member
Dr. L Igah	Assist. Secretary
Dr. L Chabiri	Secretary

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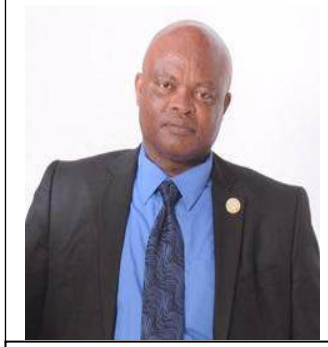
INSTITUTE'S MANAGEMENT COMMITTEE (IMC)



Dr. Nick Nwankpa
Dir. Production

Dr. Ngulukun S. Sati
Dir. Bacteriology, Parasitology & Virology

Dr. Bitrus Yakubu
Dir. Biochem & Drug Development

Dr(Mrs) E. A. Abiayi
Dir. Special duties

Dr(MRS) Monusola Ogedengbe
Dir. Planning

Dr. Kamani Joshua
Dir. Livestock Services

Dr. Yakubu Dashe
Dir. Extension Services

Mrs. Hauwa Bassi
Dir. Finance & Accounts

Dr. Maryam Muhammad
Director/Chief Executive

Dr. Manasa Sugun
Dir. Biotechnology Centre

Dr. Ndudim I. Ogo
Dir. Quality Assurance

Dr. Wilson Bertu
Director

Dr. Clement Meseko
Dir. ITADs

Dr. Moh'd Bolajoko
Dir. Diagnostic Serv.

Dr. Jurbe Gotep
Director

Director

Dr. Garba Ahmed
Director

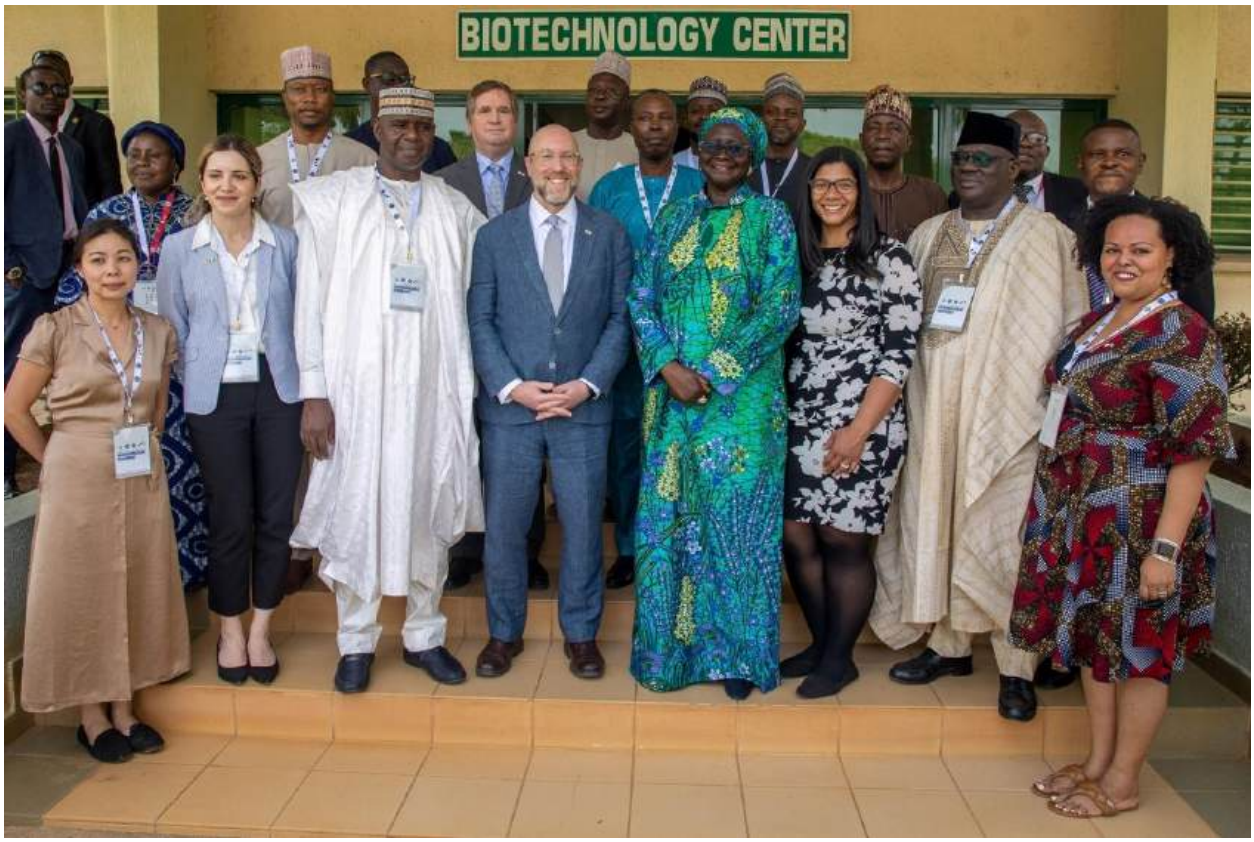
Mrs. Alice Mshebila
Ag. Director HRM

Mr. Danboyi A. Wang
Ag. Head Internal Audit

MAJOR ACTIVITIES IN THE INSTITUTE IN PICTURES

Picture: 1 Bats and other wildlife are natural reservoir of emerging and re-emerging zoonoses of global public health threat. Early detection through surveillance at the animal-human interface is important for early warning and control. The National Veterinary Research Institute (NVRI) engages in these infectious disease control in Nigeria through mobilization of resources and expertise to implement non-invasive sampling in bat colonies with the goal of safeguarding animal and public health, and promoting biodiversity conservation.

Picture 2: VISIT BY FAO-ECTAD COUNTRY TEAM LEAD TO NVRI VOM. 7-8th March,2024.
The Country Team Lead of the Food and Agriculture Organization of the United Nations - Emergency Centre for Transboundary Animal Diseases (FAO-ECTAD), Dr. Muhinda Otto-Vianney, visited the National Veterinary Research Institute (NVRI) Vom to further strengthen collaboration in addressing transboundary animal diseases and associated threats. During the visit, Otto Vianney emphasized the importance of strengthening partnership with NVRI to develop programs aimed at preventing and mitigating diseases such as Contagious Bovine Pleuropneumonia (CBPP), Peste des Petits Reminants (PPR) and Foot and Mouth Disease, employing a One Health approach. The CTL was accompanied by Dr David D. Lazarus and Mr Ajibola Suara. The ECTAD team was given a tour of various institute facilities, including the Vaccine Production Laboratories,, Biochemistry lab, Quality Assurance unit, Biosafety Level 3 (BSL3) facility, Biotechnology Centre, and New Vaccine Complex. The visit concluded with an interactive session with laboratory heads



Picture 3: NATIONAL PATHOGEN REPOSITORY AT NVRI GROUNDBREAKING CEREMONY. Held on Tuesday May 14th, 2024, at the proposed site for the construction of the National Pathogen Repository at the NVRI HQ Central Diagnostic Laboratory location in Vom. Presided over by the Honorable Minister of Agriculture, Sen. Abubakar Kyari and supported by the United States Chargé d'Affaires ad interim and the Dept Head BTRP US DTRA. The Institute is the designated FAO Regional Laboratory for Highly Pathogenic Avian Influenza (HPAI), the National Reference Laboratory for Antimicrobial Resistance (AMR), and FAO-ECTAD collaborating Centre for emergency preparedness for transboundary animal diseases.

Picture 4: WUNATO TABLE TENNIS CHAMPIONSHIP VOM OPEN 2024

The staff of the National Veterinary Research Institute Vom, left their laboratories and offices on Friday 28th June 2024 to take a break from the routine of work, and engaged themselves with social activities. On this day, it was to attend the maiden edition of the "Wunato" Table Tennis Championship, Vom Open. The competition was the initiative of Dr. Sunday Makama – a staff of the institute, who currently serves as the Special Assistant to the Director/Chief Executive of the Institute on Technical and Research matters.

Picture 5: VISIT BY DEPARTMENT OF HEALTH AND SOCIAL CARE (UK-DHSC)

TO NVRI VOM . Friday, 30th August, 2024. The Department of Health and Social Care (UK-DHSC) reaffirmed its commitment to funding and maintaining laboratories at the National Veterinary Research Institute (NVRI), Vom. This was reiterated during a visit by the UK contingent led by Dr. Akinola Gandonu, Program Officer of the Fleming Fund, which focuses on tackling antimicrobial resistance (AMR) in low- and middle-income countries by providing funding to strengthen laboratory capacity, surveillance systems, and data management in the animal and human health sectors.

Picture 6: SOLAR-POWERED BOREHOLE COMMISSIONED AT NABORDO LIVESTOCK MARKET. Commissioning of the Solar-Powered borehole at Nabordo Livestock Market, Toro LGA, Bauchi State. This important milestone is part of the collaborative project between The Pirbright Institute (TPI) and the National Veterinary Research Institute (NVRI), Vom on “Controlling Transboundary Animal Disease Spread in Livestock Markets: A Pilot Intervention Study.”

Picture 7: The close-out event for the LIDISKI project took place at the Hawthorn Suite in Abuja, Nigeria, from November 12th to 14th, 2024. This event marked the end of a five-year initiative aimed at enhancing the surveillance and control of two critical livestock diseases, Peste des Petits Ruminants (PPR) and Newcastle Disease (ND) across Nigeria. Dr. Maryam Muhammad, Director/Chief Executive of the National Veterinary Research Institute (NVRI) Vom, in her speech, highlighted the significant strides made in enhancing animal disease surveillance and control across Nigeria during the close-out meeting. The LIDISKI project, launched in 2019, has been pivotal in improving the management of Peste des Petits Ruminants (PPR) and Newcastle Disease (ND) through collaborative efforts involving key stakeholders such as the Federal Ministry of Agriculture and Food Security (FMAFS), CIRAD, the Italian Health Authority, and IKORE.

Picture 8: Professor Jega-Led Committee Spotlights NVRI's Vital Role in Livestock Reforms.

In a visit to Plateau State on December 23, 2024, the Presidential Livestock Reforms Implementation Committee (PLRIC), chaired by Prof. Attahiru Jega, underscored the critical importance of advancing Nigeria's national livestock reform agenda. A highlight of the visit was the recognition of the pivotal role played by the National Veterinary Research Institute (NVRI) in Vom. Since its establishment in 1924, NVRI has been a driving force in promoting animal health, enhancing productivity, and fostering sustainable livestock production leading to improved livelihoods. NVRI's Executive Director, Dr. Maryam Muhammad, welcomed the Committee and presented a brief profile of the Institute.

2024 ANNUAL REPORT

Preface

Dear friends and partners,

It is with great honour that we present the 2024 Annual Report of the National Veterinary Research Institute (NVRI), Vom. This report highlights our key achievements, challenges, partnerships, and the impact of our work on veterinary research and animal health in Nigeria.

The establishment of the Federal Ministry of Livestock Development on July 9, 2024, marked a significant milestone in the country's agricultural landscape. With a mandate to transform the livestock sector into a sustainable and globally competitive industry, NVRI emerged as a critical extra-ministerial agency under the new Ministry. In this strategic role, the Institute continues to contribute to national efforts aimed at enhancing livestock productivity, ensuring food security, and addressing conflicts between farmers and herders.

This report reflects the dedication, innovation, and resilience of our scientists and researchers, who have made notable strides in tackling pressing animal health issues. Through disease diagnosis across diverse pathogens, epidemiological surveillance, extension services, and vaccine production, our work has yielded outcomes with wide-reaching implications for animal welfare, public health, and environmental safety.

We take pride in our collaborations with both national and international partners. These alliances have enabled us to leverage resources, share expertise, and deepen scientific knowledge collectively addressing complex veterinary challenges. Our research outputs have informed policy, improved best practices, and contributed meaningfully to livestock development and human health.

NVRI expresses sincere appreciation to our funders, stakeholders, and partners for their continued support and confidence in our mission. We also acknowledge the unwavering commitment of our researchers, scientists, and support staff, whose efforts have made this report possible.

As you review this report, we invite you to reflect on the progress we have made together. NVRI remains firmly committed to its mandate and will continue to provide innovative solutions to emerging challenges in veterinary research and livestock development across Nigeria.

Dr. Maryam Mohammad (DVM, PhD)
Director/Chief Executive

REPORTS FROM DIVISIONS

1. BACTERIAL VACCINE PRODUCTION DIVISION

Function/mandates of the Division

The Division continued in her primary responsibility of producing vaccines for prevention of livestock and poultry bacterial diseases of economic and/or public health importance in Nigeria and other West African countries. In line with the above mandate, the division produced the under listed veterinary bacterial vaccines: Contagious Bovine Pleuropneumonia Vaccine (CBPPV), Blackquater Vaccine (BQV), Hantavac Vaccine (HV), Anthrax Spore Vaccine (ASV), Haemorhagic Septicaemia Vaccine (HSV), Brucella Vaccine (BV), Fowl Typhoid Vaccine (FTV), and Fowl Cholera Vaccine (FCV).

Specific (notable) activities in the year 2024/Achievements

The division produced --------- **million doses** of the various veterinary bacterial vaccines to meet up with market demands. The details of vaccine production for the year are given in tables 1.

2024 Vaccine Production Figures in doses

Month	ASV	BV	BQV	CBPP	FCV	FTV	HANTAV	HSV	TOTAL
January	768, 000 737, 600					432,000			1,937,600
February	766, 800 737, 600 562,800			830,700				66, 920	2,964,820
March	767, 600 73600 832, 800			803,800					2,477,800
April	1, 166, 400 960, 400					461,800 396, 600		77, 760	3,062,960
May	746, 800 1, 145, 600			387, 000		789, 000			3,068,400
June	1, 168, 000 744, 800							47, 520	1,960,320
July	1,159,200		747,500			463,900 473,500	32,360	53,760	2,930,220
August				753,800			28,560	93,200 65,680	941,240

September			102,200		47,600			65,200	215,200
October						785,100			785,100
November						777,800			777,800
December			980,000	448,800 418,200		757100			2,604,100
Total	**12,338,000**		**1,829,700**	**3,642,300**	**47,600**	**5,336,800**	**60,920**	**470,040**	**23,725,560**

TABLE1: VACCINE PRODUCTION FIGURES IN DOSES

KEY: ASV-Anthrax Spore Vaccine; BV-Brucella Vaccine; BQV-Black Quarter Vaccine; CBPPV-Contagious Bovine Pleuropneumonia Vaccine; FCV-Fowl Cholera Vaccine; FTV-Fowl Typhoid Vaccine; HSV-HaemorrhagicSepticaemia Vaccine; HV-Hantavac Vaccine.

- The Division acquired new and well characterized ASV, CBPP Vaccine Master seed cultures. These acquisitions further improve the quality of our end products to international standards.
- The Division has improved on the shelf life of Fowl Cholera Vaccine from the present four months to twelve months
- Two staff of the department went for training in AU-PANVAC.

Training 2024

1. One Health Vaccinology Strategy Workshop

2. NVRI Continous Improvement Training Agenda -NVRI

Challenges

- There is also the challenge of inadequate staff in the department as personnel are been transferred and not replaced.
- Shortage of water supply to the Division that always affect production of vaccine.
- Diesel supply usually does not tally with our production procedure especially CBPP
- The need to increase the number of production laboratories as it is expected that one vaccine should be produced in a laboratory.
- Shortage of Rouxflask for slops preparation.

- There is also the challenge of adjuvanting both HSV and FCV, perhaps using a friendly adjuvant as sodium alginate.

- There is also the challenge to bring to fruition the experiment on the production of freeze-dried anthrax spore vaccine ASV, to possibly replace the bulk liquid ASV currently being used. The pilot experiment conducted showed some good promises although its potency in guinea pigs and sheep/goat were yet to be conducted.

- All the production laboratories don't have Biosafety Cabinets needed to reduce contamination of vaccines

- Training in vaccine production on the techniques to improve vaccine quality in the Institute.

Future Plans:
The Division intends to build on capacity by acquiring more canisters for vaccine production in the short term, while in the long term the Division intends to adapt the use of fermenters in vaccine production which will increase vaccine production figures geometrically.
Plans are on to commence research on the possibilities of the production of multivalent vaccines by the Institute

Research highlight

- Validation Hanatavac Vaccine Strain *Clostridium novyi* (Oedematiens type B) alpha toxin Anthrax Spore Vaccine ASV safety test in guinea pig.

2. BACTERIOLOGY RESEARCH DIVISION

A. FUNCTION AND MANDATE OF THE DIVISION

Conducting research anddiagnosis of referral samples for bacterial diseases of economic and public health importance which include but not limited to:

a. *Mycoplasma* infections
b. *Pasteurella* infections
c. *Brucella* infections
d. *Campylobacter* infections
e. *Salmonella*infections
f. *Escherichia coli* infections.
g. Other Bacterial infections as the need arise.
h. Antimicrobial susceptibility Testing and antimicrobial resistance (AMR) pattern of isolated bacteria.
i. Production of sera, biological and diagnostics kits for bacterial infections

j. Development of vaccine for economically important bacterialdiseases.
k. To participate in internationally recognized proficiency testing and other external quality assessment (EQA) programmes
l. Participating in National and International Networks and Surveillance for Bacterial diseases.
m. Training and provision of bench space for researchers and students from universities and allied institutions on industrial attachments /fellowship (Local and International).

B. SPECIFIC NOTABLE ACTIVITIES OF THE YEAR

BRUCELLA RESEARCH LABORATORY

a) Routine Laboratory activities

One Thousand and fourteen (1,014) samples were analysed by Rose Bengal Plate test (RBPT) as indicated in the tablebelow:

S/N	Animal Species	Sample type	No of samples	Test	Number Positive
1	Bovine	Serum	664	RBPT	21
2	Caprine	Serum	197	RBPT	13
3	Camel	Serum	100	RBPT	0
4	Equine	Serum	5	RBPT	0
5	Human	Serum	11	RBPT	0
6	Porcine	Serum	0	RBPT	0
7	Canine	Serum	37	RBPT	1
Total			**1014**		**35**

b) Student's Project

One Thousand and four (1,004) samples were analysed by Rose Bengal Plate test (RBPT) for various students'project as indicated in the table below:

S/N	Educational Level	Animal Species	Sample type	No of samples	Test	Number Positive
1	HND	Bovine	Serum	100	RBPT	1
2	HND	Bovine	Serum	100	RBPT	5
3	ND	Ovine	Serum	60	RBPT	0
4	ND	Caprine	Serum	60	RBPT	0
5	HND	Bovine	Serum	50	RBPT	5
6	HND	Bovine	Serum	50	RBPT	6
7	HND	Bovine	Serum	100	RBPT	5

8	HND	Caprine	Serum	25	RBPT	0
9	MSc	Bovine	Serum	84	RBPT	8
10	HND	Bovine	Serum	100	RBPT	5
11	HND	Caprine	Serum	75	RBPT	0
12	BSc	Bovine	Serum	200	RBPT	21
Total				**1004**		**56**

C. RESEARCH HIGHLIGHT

i) Proficiency test

Proficiency test was carried out on serum of samples sent from Instituto Sperimentaledell'Abruzzo e del Molise 'Giuseppe Caporale', Teramo, Italy. The samples were received on the 9/06/2024. They were tested using Rose Bengal Plate Test Antigen (RBPT) on the 21/06/2024, retested after 72 hours (24/06/2024).

The analysis of results carried out by the reference laboratory showed that 20 out of 20 results were as expected, achieving 100% overall detection rate as we detected all the positivesamples (13/13) as wellas the negative samples (7/7).

SALMONELLA/AMR NATIONAL REFERENCE LABORATORY

SPECIFIC NOTABLE ACTIVITIES OF THE YEAR

a) Antimicrobial Susceptibility Testing

b) Student's projects

Two thousand seven hundred and ninety-four (2,794) samples processed for students' projects are indicated in the table below:

S/N	Educational Level	Animal Species	Sample type	No of samples	Diagnosis	Result	
						Organism isolated	**No.**
1	PhD	Canine	Anal swab	490	Isolation and identification of Pathogenic *E.coli*	Pathogenic *Escherichia coli*	8
2	PhD	Poultry	Faeces &Environmental samples	1,317	Isolation and identification of *Salmonella spp*	*Salmonella spp*	109
	PhD	Poultry	Environmental swab	703	Isolation and identification	*Campylobacter spp*	28

					of *Campylobacter spp*		
2	MSc	Human	Urine	184	Isolation and identification of *E.coli*	*Escherichia coli*	8
3	HND	Caprine	Anal swab	100	Commensal *E.coli*	*Escherichiacoli*	33
Total				**2,794**			

C) Research Highlight

Proficiency Testing. One cycle each comprises of five swab samples and five lyophilized isolates of proficiency testing from EQuAFRICA and VETQAS PT providers for identification and AST were conducted using API kit and conventional (CLSI) method respectively.

ii) Achievement

Training. Hands on training on isolation and identification of *Salmonella spp, E.coli, Enterococcus* and *Campylobacter spp*, Antimicrobial Susceptible Testing using Disc Diffusion method and use of VITEK Machine conducted to CVSN fellows and during FAO workshops to sentinel lab staff.

3. PASTEURELLA RESEARCH LABORATORY

SPECIFIC NOTABLE ACTIVITIES OF THE YEAR

a) Routine laboratory activities:

One hundred and ninety (190) Samples processed are indicated in the table below:

S/N	Animal Species	Sample type	No of samples	Diagnosis	Result	
					Bacteria isolated	**No.**
1	Bovine	Nasal Swab	89	Haemorrhagic septicaemia	*Pasteurella* spp.	0
2	Bovine	Blood	101	Haemorrhagic septicaemia	*Pasteurella spp./Mannhemiahaemolytica*	9/2
Total			**190**			**11**

b) Student's Project

Four hundred (400) samples processed for students'projects are indicated in the table below:

S/N	Educational Level	Animal Species	Sample type	No of samples	Diagnosis	Result	
						Organism isolated	**No**
1	HND	Fish	Intestine	300	Enterococcosis	*Enterococcus*spp.	182
2	HND	Poultry	Intestine	100	Fowl cholera	*Pasteurella spp. /M. haemolytica*	25
Total				**400**			**207**

4. MYCOPLASMA RESEARECH LABORATORY

Five hundred and sixty samples (560) processedin the laboratory including students'projects are indicated in the table below:

S/N	Animal Species	Sample type	No of sample	Diagnosis	Result	
					Organism isolated	**No.**
1	Bovine	Nasal Swab	200	CBPP	*Mycoplasma* spp.	18
2	Bovine	Tissues	50	CBPP	*Mycoplasma* spp.	4
3	Bovine	Spleen	2	CBPP	0	0
4	Bovine	Lymph nodes	2	CBPP	0	0
5	Bovine	Pleural fluids	4	CBPP	*Mycoplasma* spp.	3
6	Avian	Nasal swabs	200	Mycoplasmosis	0	0
7	Ovine	Tissues	2	CCPP	0	0
8	Canine	Vaginal swabs	100	Mycoplasmosis	*Mycoplasma* spp.	2
	Total		**560**			**27**

iii) INDUSTRIAL TRAINING OF STUDENTS IN THE DIVISION

One hundred and five (105) students on Industrial Training from different Universities, Polytechnics and Colleges in the country were posted and trained in the division during the year under review. Student on fellowship from the college of Veterinary surgeons of Nigeria alsoundertook lecture and practical in the division.

iv) CHALLENGES

- Biometric access control (door) to AMR laboratory yet to be repaired.
- Lack of consistent running tap water.
- Inadequate laboratory equipment such as UPS, digitalthermometers, stabilizers and functional refrigerators and deep freezers.
- Inadequate media and diagnosticreagents for basic laboratory work.
- Lack of office space for staff.
- Insufficient office and laboratory spaces for Pasteurella and Brucella Laboratories.
- Most items requested via the annual procurement list have not been supplied affecting quality research and diagnosis.

5. BIOCHEMISTRY DIVISION

A. FUNCTIONS/MANDATE:

To conduct research into all aspects of animal diseases, their treatment and control as well as provide commercial nutritional, toxicological and water analysis services to farmers and researchers.

B. SPECIFIC (NOTABLE) ACTIVITIES IN THE YEAR 2024:

- Biochemistry Division hosted the 2024 NEF-NVRI Toxicology Internship Program. Eight Interns from Nigeria, Cameroon and Ghana were trained and graduated.
- Biochemistry Division analyzed feed samples brought in from, Dagwom farm to determine the nutritional quality of feeds procured by the Institute for the animals in the farms.
- Biochemistry Division analyzed over 500 commercial samples brought to the laboratories by farmers and researchers which generated six hundred and sixty-one thousand, one hundred naira (N661,100.00) that, was remitted to the Institute's account.

C. ACHIEVEMENTS:

- There was a 30% increase in the number of commercial samples analyzed by the Division compared to 2023.

D. CHALLENGES:

The major challenges faced by the Division are:

1. Uninstalled equipments:

i. Gas Chromatography Mass Spectroscopy (GCMS), use for the alaysesof volatile drug residues, phytocompounds and pesticides.

ii.The Amino acid analyzer.

2. **Non-functional equiptment:** The Atomic absorption spectrophotometer use for analysis of heavy metals.

3. **Non-calibrated equipment:** The UV spectrophotometers in the Division have not been calibrated in the past three years.

These equipments in the Division if installed and regularly calibrated will greatly enhance research and routine sample analyses as well as generate more revenue for the Institute.

E. Research highlights

- Biochemistry Division is carrying out research with LID on developing a data base of Clinical Parameters in animals using NVRI Farms
- The Division is working with Drug Development Division to develop a phyto-anticcocidial compound.

6. BIOTECHNOLOGY CENTER

MANDATE OF THE DIVISION:

1) Research on the development of biological (recombinant vaccines, proteins and antigens), for control of animal diseases.
2) Diagnosis of animal diseases using biotechnology techniques for, quarantine and international trade certification of animals and animal products.
3) Serves as a centre for biotechnology collaborative research with National and International research Institutions and Universities.
4) Development and validation of biotechnology techniques for National use in diagnosis & research.
5) Detection & characterization of animal disease pathogens, using biotechnology techniques.
6) Investigation of emerging & re-emerging infectious diseases and other zoonotic agents using biotechnology techniques.
7) Conducting National and International trainings on biotechnology methodologies for diagnosis & research.
8) Serves as a centre for DNA Barcoding of animals, disease vector insects, invasive pests and insects.
9) Serves as one of the centres of research for the National Animal Genetic Resource.

SPECIFIC ACTIVITIES:

Research/Laboratory Diagnosis

1. PCR detection of virulence genes in *Salmonella* spp.
2. PCR detection of antimicrobial resistance genes in *Salmonella* spp.
3. PCR detection of virulence genes in *E. coli*
4. PCR detection of antimicrobial resistance genes in *E. coli*
5. Identification of Sarcocystosis using PCR analysis.
6. Identificationof *Cryptosporidium* spp PCR analysis.
7. *Trypanosomaisis* (*T. brucei, T. vivax* and *T. evansi*) PCR analysis.
8. *Plasmodium falciparum* PCR analysis.
9. Antimalarial drug resistance gene detection by PCR analysis.
10. Identification of *Eimeria* spp by PCR analysis.
11. Purification of excised bands from agarose gel.
12. Sporalution/Culturing of *Eimeria* and *Cryptosporidium* oocysts.
13. Purification of *Eimeria* and C*ryptosporidium* oocyst from faecal samples.

7. ON-GOING PROJECTS:

S/N	Total samples screened	Analysis carried out	Conventional-PCR	Real time PCR
1.	220	LASSA Clinical	Yes	
2.	300	Zika		Yes

4.	230	Rift Valley in livestock	Yes	
5.	60	Rift Valley in clinical samples	Yes	
6.	60	CCHF in clinical samples	Yes	
7.	60	Yellow Fever virus detection in clinical samples	Yes	
8.	50 pools	Blood meal analysis in mosquitoes		Yes
9	50 pools	Molecular characterization of mosquitoes spp.	Yes	
10	70	Pan Flavi(yellow fever, dengue, zika,etc)		Yes

OTHER ACHIEVEMENTS:

Collaborative Research: Participated in an inter-laboratory project within NVRI, which focused on identifying parasites in galliformes using microscopy and PCR.

International Partnerships: Established and maintained collaborations with international and reference laboratories, for the study of specialized pathogens.

Molecular Diagnostics and Research: Conducted molecular detection and characterization of diverse livestock disease pathogens for, both diagnostic and research purposes. This included identifying novel strains of specific pathogens.

Technical Training and Support: Provided training and technical assistance to research students and staff members in using molecular techniques, for pathogen identification, gene fragment analysis, and sequence data analysis.

Interdivisional Collaboration: Offered technical support for training programs in conjunction with other divisions within the Institute.

Scientific Dissemination: Published research findings in peer-reviewed scientific journals.

PCR Protocol Development and Optimization: Developed, validated, and optimized PCR protocols for the molecular analysis of various diagnostic and research pathogens.

Protocol Standardization: Established and implemented standardized operating protocols, for the analysis of a range of parasitic organisms.

4. STUDY LEAVE/ TRAINING:

Three members of staff are on training. Mrs. Anvou Dalyop, Dr. Olushola Oladipo and Mrs. Ebere Agusi are away for their PhD.

5. CHALLENGES:

i. Broken down camera for the BioRad Gel documentation system needs to be fixed.
ii. An autoclave is urgently needed for sterilization of prepared reagents and consumables as well as decontamination of samples before disposal.
iii. General maintenance of biosafety cabinets and calibration of pipettes are needed.
iv. PCR reagents and consumables for routine diagnosis and training are required for optimal diagnostic work.
v. Health challenge posed by prolonged use of ethidium bromide for electrophoresis. The institute should consider a less toxic gel staining dye.
vi. Power fluctuation and lack of stabilizers leading to breakdown of equipment such as freezers.
vii. Limited cold storage facilities for samples and reagents.

viii. Lack of adequate water supply into the laboratories to enable proper cleaning/sanitation and other emergencies.

G. FUTURE PLANS:

i. To procure Nanopore MinION for sequencing of viral genomes.
ii. Develop protocols for diagnostics and screening of pathogens.
iii. Training on proteomics, Real-time PCR, bioinformantics.
iv. More collobration within Institute laboratories, Universities and Agencies for research.
v. Develop grant writing skills among staff of the center.
vi. Development of research projects focussing on, multiple antimicrobial resistance and resistance to last resort antimicrobials in commonly identified pathogens, such as *Salmonella* and *E. coli*.
vii. Ecological studies of the reservoir for viruses of the family Arenaviridae (Lassa virus, Lymphatic choriomeningitis virus, Mopeia virus, Luna virus, Gairo virus etc.) and genetic diversity of Lassa viruses.

8. DERMATOPHILOSIS, MYCOLOGY AND IMMUNOLOGY DIVISION,

FUNCTIONS/MANDATE

i. To conduct research on *Dermatophilus congolensis* (Kirchi) of livestock.
ii. To develop vaccine for prevention and control of Dermatophilosis.
iii. To conduct research on Dermatophilosis/mycotic agents.
iv. To develop ethno-veterinary products for animal and human use.

SPECIFIC (NOTABLE) ACTIVITIES

1. Microbiology Lab.

Animal samples processed – 68 cases

i. Eggs - 2
ii. Canine - 1
iii. Porcine - 1
iv. Avian - 15
v. Ovine - 13
vi. Bovine – 2
vii. Contaminated media -3
viii. Animal feed – 10
ix. Food/ (cassava) poisoning -18
x. Blood - 1

Vaccine samples processed –

i. Vaccine –4

Organisms isolated from animals

i. Trichophyton species -7
ii. Aspergillus species -23
iii. Candida species - 3
iv. Dermatophilosis *congolensis* - 2
v. Bacillus species - 6
vi. Rhizopus species - 3
vii. Mucor species - 9
viii. No growth – 7
ix. Fusarium species- 2
x. Penicillium species -1
xi. Staphylococcus species -4

Human samples processed – 1684 cases

Organism isolated from human samples include;

i. Staphylococcus spp =50
ii. Candida =50
iii. Mucor =112
iv. Trichophyton =700
v. Aspergillus =500
vi. Fusarium =50
vii. Rhizopus =100
viii. Bacillus =60
ix. Penicillium=109
x. No fungal growth =11

2. **<u>Ethno veterinary Production Unit</u>**

The following products were produced during the year;

i. Dermatocide 3m soap – 12, 029 tablets
ii. Dermatocide 3m ointment (120g) – 2, 399
iii. Dermasol ointment – 2,287
iv. Lamstreptocide A&B – 161 Litres

ACHIEVEMENTS

- Various fungal and bacterial species were diagnosed from 1684 human and 68 animal samples.
- New product was also developed (Dermasol ointment and shampoo).
- 2,287 Dermasol ointment was produced.
- 2,399 Dermatocide 3m-ointment (120g) was produced.
- 12,029 tablets of Dermatocide soap.

- 161 Litres Lamstreptode A&B.
- Samples from cattle, sheep and goat have been processed to isolate *D. congolensis* for vaccine production in collboration with Fed. University of Agric. Abeokuta sponsored by TETFUND

CHALLENGES

i. Inadequate reagents and materials for work in Microbiology laboratory
ii. Biosafety cabinet for isolation has broken down
iii. Lack of reagents for Immunology work
iv. Lack of funds to carry out new research projects.
v. No functional microscope.
vi. No functional aerobic and anaerobic incubator for isolation of *D. congolensis*.
vii. The Division is under staff.
viii. No functional autoclave.

FUTURE PLAN

i. To undertake surveillance, sampling and isolation of *Dermatophilus congolensis* in cattle in Nigeria.
ii. To undertake a project to test different plant extracts against *Dermatophilus congolensis* and fungal isolates.
iii. To undertake a project to develop skin lotion using various plant extracts.
iv. To fully equip the immunology laboratory to make it functional for immunological work.

RESEARCH HIGHLIGHTS

- ❖ Dermasol ointment was produced with active ingredients that have antifungal, antibacterial and kerotolytic activity. It was tested on the following skin conditions; acne, hayfever, skin redness (rosacea), dandruff, scaly and red skin patches (sebrheic dermatitis),and itchy skin infection caused by mites (scabies), lice, cold sores,warts, fungi and eczemas. Also, demand/ production of Dermasol was much higher than dermatocide ointment in 2024 because of the excellent result.
- ❖ Lamstreptocide was produced from bitter leaf extract and other ingredients and tested on *Dermatophilus congolensis* infected cattle. Result still being monitored.

9. DRUG DEVELOPMENT DIVISION

A. FUNCTIONS OF THE DIVISION:

The Division is primarily a research division saddled with the responsibility of conducting research for the discovery of substances that can be used for the prevention, diagnosis, treatment, and mitigation of primarily animal diseases. These research activities include projects initiated by the division staff or projects conceived by clients outside the institute but requiring the services and expertise of the division personnel. Thus, the mandate of the division is outlined as follows:

- Research into substances from natural and synthetic sources for the prevention, treatment, and control of diseases.
- Research into the safety of substances from natural or synthetic sources used in the prevention, treatment, and control of diseases.
- Provide services to researchers/scientists from other establishments/institutions, working in the area of drug development and related research.
- Establish and maintain a herbarium for archiving medicinal plants.
- Training of students on industrial attachment and laboratory posting.

B. NOTABLE ACTIVITIES:

I. Initiated the *in-silico* screening dimension to drug development, which was used during the NEF-NVRI Toxicology Internship Program for the first time.
II. Executed the NEF-NVRI Toxicology Internship Program.
III. Two staff concluded their PhD studies.
IV. Staff of the division published 8 papers as main authors and co-authors.

C. ACHIEVEMENTS:

1. Manuscript of project on the *in-silico* evaluation of compounds isolated from *Euphorbia hirta* against some Antimicrobial Resistant Bacteria is being developed.
2. Continued research project of the division titled “Isolation of antimicrobial compounds from *Euphorbia hirta*.
3. Successfully executed the NEF-NVRI TIP; a manuscript is being developed from the project carried out.
4. Analysed 13 samples for clients.
5. Instituted monthly seminar presentation by staff of the division and 8 seminars were presented.

D. CHALLENGES:

1. Lack of **critical** equipment such as:
    a. **Sensitive weighing balance:** This slows down work and makes it more cumbersome by, going to another laboratory every time.
    b. **Large Soxhlet extraction apparatus:** There is usually a need to extract large quantities of materials, which requires a large extraction setup.

c. **Rotary evaporator:** After extraction, there is a need to evaporate solvent and dry extract as soon as possible. This will be enhanced when a rotary evaporator is available.
d. **Chromatography accessories**: There is a need to isolate phytocompounds from crude extracts of medicinal plants.Therefore, basic equipments such as Columns, a TLC development tank, and an Ultra-violet viewer are required.
e. **Broken down water distiller.**
f. **Malfunctioning freeze dryer.**

2. **Lack of laboratory space:** The division has one laboratory only; thus, every activity is carried out within the same laboratory including animal experiments, chromatography, and drying plants and extracts.
3. **Inadequate office accommodation and furniture:** There is no office for the Head of Division and some staff thus, making the administrative aspect of the work suffer.
4. **Inadequate staff:** There is no technician in the Division and no divisional secretary; this poses a challenge to the research staff because they have to engage in other duties that interfere with their core duties.

E. FUTURE PLAN:

The Division plans the following for 2025 and beyond:

1. Continue the monthly seminar presentation that, will see all staff of the Division present seminars to ensure the dissemination of knowledge.
2. Continue the research on the isolation of antimicrobials from plants to tackle the scourge of antimicrobial resistance.
3. Develop protocols for quantification of phytochemicals from plants.
4. Organize a workshop on *in silico* evaluation of compounds isolated from medicinal plants and other sources, and thereafter use the technique to screen libraries of compounds for various pharmacological actions.
5. Pursue wider collaboration with other researchers, within and outside the institute to increase productivity.
6. Seek and apply for grants as external sources of funding, to improve the activity and productivity of the Division.

F. RESEARCH HIGHLIGHTS:

1. Continuation of the research project of the Division titled “Isolation of antimicrobial compounds from *Euphorbia hirta*.
   Within the period under review, the plant sample was harvested, dried, pulverized, and extracted. The sourcing of bacterial and fungal isolates is ongoing. Protocol for the fractionation and isolation of compounds from the plant is being developed.
2. Published One (1) article from survey activities of the Division. In addition to articles published by staff of the Division in collaboration with other researchers.
3. Organized the 2024 NEF-NVRI Toxicology Internship program. The staff of the Division played key roles in lecture delivery, Supervision of Interns, and the research

project titled “Exploring the anticoccidial activity of *Khaya senegalensis and Azadirachta indica in silico* and in rabbits.

4. Extracted and carried out phytochemical screening for 13 clients.

G. SEMINARS PRESENTED BY THE DRUG DEVELOPMENT DIVISION STAFF.

S/No.	NAME OF PRESENTER	TOPIC	DATE PRESENTED
1.	James Akpojosevbe Edirin	Phyto-chemistry and *in-vitro* effects of S*olanum dasyphyllum* fruit extract on Eimeria species in broilers	25th January, 2024
2.	Ishaku Leo Elisha	Laboratory Risk Management Awareness	15th February, 2024
3.	Jurbe Gofwan Gotep	Choice of Biostatistical Tools for Data Analysis	20th March, 2024
4.	Ebere Emilia Okpalaeke	Health and Environmental Impact of E-Waste	24th April, 2024
5.	Blessing Zataat Shok	Medicinal Plants and their Commercial Impact: A Review	31st May, 2024
6.	Bernard Tondo Kpensalen	Antimicrobial Resistance and the Role of Medicinal Plants	26th July, 2024
7.	Kehinde Funmi Oyebade	Advanced Bioprospecting Techniques: Forward or Backward in Characterization of Bioactive Compounds from Marine Organisms	13th November, 2024
8.	Akogwu Emmanuel Itodo	Evaluation of the ameliorative effects of Moringa oleifera on doxorubicin- induced reproductive toxicity in male Wistar rats	2nd December, 2024

10. FINANCE AND ACCOUNTS DIVISION

INTRODUCTION

The Finance & Accounts Department is headed by a Director and it is saddled with the responsibility of ensuring compliance with Financial Regulations and adequate supervision and the disbursement of funds and proper monitoring and accounting for revenue.

The department presently have 51 staff out of which 7 are in the Institute's Outstation Laboratories. We have 12 functional units in the department as follows:

i. Cash office
ii. Salaries and wages
iii. Other charges
iv. Revenue and sales
v. Final accounts
vi. Reconciliation
vii. Advances
viii. Asset management
ix. Internal checks
x. Budget
xi. Information technology
xii. Outstation staff

1. FUNCTIONS

i. Ensuring that proper records are maintained manually and electronically of all revenue and expenditure in accordance with the prescribed Accounting System of National Veterinary Research Institute, Vom.
ii. Ensure that all payments of the Institute are covered by proper documentation, payment vouchers raised, as well as ensuring such payments are properly authorized.
iii. Liaise with the Federal Ministry of Agriculture & Food Security, Ministry of Finance, Budget & National Planning Accountant General's office, Central Bank of Nigeria (CBN) National Assembly, Office of Auditor General of the Federation in all finance and accounts matters.
iv. Preparing Management and Financial Reports comprising Trial Balance, Income and Expenditure Statements and Balance Sheet in accordance with IPSAS Accrual system of Accounting.
v. Verify monthly Bank and Cash reconciliation and maintain up-to-date list of all Fixed Assets of the Institute.
vi. Ensuring that Revenue, Capital and Recurrent Subvention due to the Institute are collected and accounted for under the correct Heads and Sub-heads.
vii. Preparation and defense of the Institute's Annual Budget and preparing the consolidated budget of the Institute.

2. NEW DEVELOPMENT

They ear under review witnessed their retirement of two prominent Assistant Directors; Mr. Solomon Gabiand Mr. Adama A. Gabriel, who both retired on 27th

September and 1st October, 2024 respectively. In the same vein, Mr. Mabit E. Dabat was promoted to Assistant Director, Accounts, based on availability of vacancy.

The departmental so organized as end off ceremony for four (4) of its retired staff. The presence of the Director/Chief Executive during the occasion added colour to the event, they are:

1. Mr. Idoko Anebi - Former Director, Finance & Accounts
2. Mr. Habila Gal - Former Head, Internal Audit
3. Mr. David Abimaje - Former Chief Accountant/Budget Officer
4. Rev. Kehinde O. - Chief Livestock Supt, on posting to Accounts

Various gift items including cash donations were given to them from the Accounts/Audit Staff Welfare contributions.

3. ACHIEVEMENTSDURINGTHEYEAR

- Budget training in Abuja for 2024
- GIFMIS training for bottom–top payments
- The personnel emoluments of the Institute's staff were paid as at when due without any shortfall from the budget allocation.
- All revenue generated in the year under review was accounted and proper books of accounts were kept
- A visit from the Federal Ministry of Agriculture and Food Security on our capital budgets how's proper utilization of the lean budget for the year.
- Various visits by personnel from Office of the Auditor-General of the Federation, Ministry of Finance, Budget and National Planning Abuja
- An on-the-spot assessment of the Institute's budget tracker by the Budget Office commended the Accounts Department and Management for financial prudency even through the budget allocation was very small in recent years.
- There was no case of fraud or any disciplinary action on an accounts staff during the year.
- Mrs. Obigeli Ako was posted from Kano to the Institute's Headquarters for duties
- Posting of an ICT staff Mr. Ahmad Yahaya Naibi to the Budget section of Accounts Department
- The Accounts staff are part of the commercialization team that drafted the vision, mission and mandate of vaccine commercialization.

4. CHALLENGES

The department is a sensitive one and also the life wire of the Institute because everything centers on finance. Some of the challenges faced by the department are:

i. Shortage of personnel
ii. Inadequate office accommodation in which every senior officer sharing office with his junior counterpart
iii. The furniture in most of the offices are outdated and in bad shape
iv. In 2024, there was no any form of internal training

v. Office equipment such as laptops, printers and desktop computers and accessories are needed urgently.

11. HUMAN RESOURCE MANAGEMENT DIVISION

The Department is charged with the responsibility of the general administration of the National Veterinary Research Institute. It oversees all administrative matters including advising, coordinating and handling of policy issues of the Institute.

FUNCTIONS OF THE DEPARTMENT

The functions of the department include the following:

i. Recruitment, confirmation of appointment, promotion, discipline and exit of staff
ii. Preparation and up-dating of nominal roll
iii. Interpretation of government rules, regulations, policies and circulars
iv. Liaising with the Office of the Head of Civil Service of the Federation and other agencies on establishment matters;
v. Staff welfare matters;
vi. Responsible for management and maintenance of the Institute's security matters;
vii. Serve as secretariat of the Institute's standing and ad-hoc committees;
viii. Coordinating training and development of staff;
ix. Management of NVRI Stores
x. Maintenance of the physical structures of the Institute; and
xi. Maintenance of utility vehicles of the Institute

DIVISIONS IN THE DEPARTMENT

The Department has three (3) Divisions which include:

1. **APPOINTMENT, PROMOTION AND DISCIPLINE**

   This Division is headed by an Assistant Director, and it deals with the appointment, promotion and discipline of both senior and junior staff, establishment matters and records of staff in the Institute.

   The Division has two (2) sections namely:

   i. Establishment section
   ii. Records section

SECTIONS UNDER THE APPOINTMENT, PROMOTION AND DISCIPLINE DIVISION:

i. ESTABLISHMENT SECTION (Senior and Junior)

Establishment Section is saddled with the responsibility of handling appointments, promotions and disciplinary cases for both senior and junior staff and is the custodian of staff records. It also coordinates general duties and activities in the open and secret registries, liaises with the records section to update staff nominal roll and preparation of quarterly/annual reports. The Section interprets government circulars and regulations and assists in implementing the Institute policies.

The Establishment Section is saddled with the following responsibilities:

1. Appointment, promotions, disciplinary cases for both junior and senior staff.
2. Handling of both open and secret registries of junior and senior Staff.
3. Preparation of quarterly/annual reports for the Department.
4. Liaising with the records section to update staff nominal roll.
5. Coordination of general duties.
6. Being the custodian of staff records.
7. Assist in implementing Institute's policies.
8. Interpreting government circulars, extant rules and regulations.

Below are some of the activities carried out by the section during the year under review:

- Conducted Senior staff Promotion Exercise in January, 2024 in which 150 number of staff were involved. 103 Promotion letters were issued to successful candidates in April, 2024.
- Handled the following disciplinary cases:
  - Unauthorized sale of bull involving Dr. Hilary B. Lapang and Mr. Jerry Jangaba. The matter went to ARCN and it was approved that culprits should pay the monetary value of the bull.
  - Case involving Dr. Samuel Elias Mantip and Dr. Usman Rayyanu of Uyo Outstation Laboratory and Central Diagnostic Laboratory respectively. Matter still pending at ARCN, Abuja.
- Case involving Miss. Hajara A. Yusuf in which officer was involved in accidental burning down of Laboratory bench in the Biochemistry Division, Biochemistry and Drug Development Department and Mr. Dung Mancha Mancha of Audit Unit, bordering on absence without leave, drunkenness and dishonesty.
- Conducted the senior staff confirmation examination on 25th November, 2024 for staff employed in July, 2022.
- The promotion and confirmation exercises were conducted in liaison with the Records/Documentation sections of the division.

i. ESTABLISHMENT SECTION (Junior)

JUNIOR STAFF PROMOTION AND CONVERSION

In line with the guidelines for promotion of Staff in the Federal Research Institutes, Colleges of Agriculture and Allied Institutions, the Institute conducted Promotion Examinations on Thursday 11th and Interview/Screening of relevant documents on the same date for its Junior Staff who were due for the year 2023 promotion.

Following the written examination which was held on Thursday 11th January, 2024 and marking of answered scripts with scores for their written examination and Annual Performance Evaluation Report (APER) entered into the score sheet, the Institute's Junior Staff Appointment, Promotion and Disciplinary Committee (JSAP&DC) conducted Interview and Screening of credentials on Thursday 11th January, 2024 wherein

certificates of Staff concerned were screened to ascertain its authenticity and relevance. Similarly, marks were awarded for their highest qualifications presented and appearances. Thereafter, their respective scores were entered/recorded in the score sheet and recommendations for the promotion of those Staff who scored the requisite minimum of 60% marks and were found to have met the requirement to move to their next higher grade levels was made accordingly.

PROMOTION CRITERIA:

Based on the guidelines for promotion, the following were taken into consideration for the 2023 promotion exercise:

i. Length of service

ii. Performance appraisal

iii. Qualification/Certificates

iv. Established Vacancies

The total of Fifteen (15) Junior Staff who were due for the promotion exercise attended the 2023 promotion exercise. The breakdown of candidates according to their cadre and salary structure is as follows:

MEDICAL LABORATORY ASSISTANTS

	i. CONHESS 5 moving to CONHESS 6	=	5
a.	**AGRICULTURAL FIELD OVERSEERS**		
	i. CONHESS 4 moving to CONHESS 5	=	1
	ii. CONHESS 3 moving to CONHESS 4	=	1
b.	**LIVESTOCK OVERSEERS**		
	i. CONHESS 5 moving to CONHESS 6	=	4
c.	**AGRICULTURE FIELD ATTENDANT**		
	i. CONHESS 5 moving to CONRAISS 6	=	2
	ii. CONRAISS 3 moving to CONRAISS 4	=	1
d.	**CRAFSMAN**		
	i CONRAISS 4 moving to CONRAISS 5	=	1

Grand Total (A + B + C + D + E) = 15 Candidates

The Committee assessed the Candidates based on the following criteria:

a.	Written Examination	-	60marks
b.	APER Scores	-	20 marks
c.	Qualification	-	10 marks
d.	Appearance	-	5 marks
e.	Membership of professional body	-	5

CONVERSION:

The Committee also considered the conversion of ten (10) Staff. The Staff were found to have completed the approved course of study and passed the required examination and presented same. They are therefore recommended for conversion.

ii. RECORDS/DOCUMENTATION SECTION:

The Records/Documentation Unit of the Institute is saddled with the following responsibilities:

- Updating and Maintenance of Staff Records of Service
- Processing of different types of Leave:
  - ✓ Maternity Leave
  - ✓ Paternity Leave
  - ✓ Annual Leave
  - ✓ Examination Leave
  - ✓ Sabbatical Leave
  - ✓ Leave of Absence
  - ✓ Sick Leave.
  - ✓ Casual Leave etc

  And any other Leave as may be approved by the Director/Chief Executive.

- Compilation and processing of documents for both Junior and Senior Staff.
- Keeping records of both Junior and Senior Staff on:
  - ✓ Appointments
  - ✓ Retirement
  - ✓ Deaths
  - ✓ Dismissal
  - ✓ Termination
  - ✓ Interdiction
  - ✓ Transfer of Service
  - ✓ Updating of Staff Nominal Roll
  - ✓ Records of Service (ROS)

2024 PROMOTION:

i. 2024 Promotion

Senior Staff	-	103
Junior Staff	-	15
Conversion		
Senior Staff	-	10
Junior Staff	-	10

ii. Recording of Statements/Certificates of results and sighting of Original Certificates of Staff

iii. Effecting Change of Name

iv. Posting of Staff
v. Staff on Leave of Absence

- ✓ Record on Trainings

In the period under review (January – December, 2024), the Unit recorded the following:

- Retirement (Voluntary & Statutory) - 36
- Deceased - 2
- Transfer of Service (from the Institute) - 2
- Transfer of Service (to the Institute) - 0
- Resignation/Withdrawal of Service - 3
- Dismissal/ Termination - 1
- Staff Training - 11
- Nomination for Training - 42
- Posting of Staff - 40

MANPOWER BUDGET DEFENCE:

- The Record Unit successfully presented and defended the 2024 Manpower Budget to the Office of the Head of Civil Service of the Federation (OHCSF) Abuja for the Institute.

2. STAFF WELFARE AND TRAINING DIVISION:

This Division is headed by an Assistant Director, and it is saddled with the responsibility of welfare and training of senior and junior staff of the Institute.

SECTIONS UNDER THE STAFF WELFARE AND TRAINING DIVISION:

i. PENSION SECTION:

The Pension Section is responsible for handling the Institute's Pension matters, Group Life Assurance Scheme for staff. However, the following activities were covered during the year under review:

The Pension Section is responsible for handling the Institute's pension matters and Group Life Assurance matters.
Major activities handled by the Pension Section in the year 2024 include:

1. The Section successfully enrolled the 37 employees of the Institute due for retirement between January – December, 2024 into the Retirees Enrolment Application Portal of the National Pension Commission (PenCom) and issued them their MDA Letter of Introduction to their respective Pension Fund Administrators (PFA) to enable the retirees processed their retirement benefits.

2. The Section processed the payments of Repatriation Allowance, refund of National Housing Fund contribution domiciled with the Federal Mortgage Bank of Nigeria and

the computation of deceased staff Burial Expenses in line with the provisions of the revised 2021 Public Service Rules.

3. The Section reported the death of staff who died in active service to the Institute's Insurance Broker to enable the processing of their Group Life benefits and also followed up on other pending matters.

4. The Section through the approval of the Director/Chief Executive coordinated a Customer Interactive Forum with ARM (now Access ARM) Pensions (PFA) held at the Institute's Library Conference Hall.

5. The Section has wrote correspondences to the National Pension Commission (PenCom), Abuja and Pension Transitional Arrangement Directorate (PTAD) on complaints from some staff and pensioners whose pension contributions are not remitted to their respective Retirement Savings Account (RSA) and none payment or shortfall of monthly pension payments.

6. The National Pension Commission invited the two(2) Pension Desk Officers of the Institute for a Workshop for the 2024 Online Enrolment Exercise for employees due for retirement from service between January – December, 2025 held in Ilorin, Kwara State.

ii.NATIONAL HEALTH INSURANCE SCHEME (NHIS) SECTION

The National Health Insurance Scheme (NHIS) Section of the Department is saddled with the responsibility of:

1. Handling all issues relating to the good health care services of Staff (i.e. enrolees).
2. Registration of new Staff into the Scheme.
3. Keeping custody of NHIS various forms/assist Staff in the completion of same for submission to NHIS.
4. Obtaining periodically updated list of NHIS enrolees (Staff) in liaison with the Health Maintenance Organization (HMO) and NHIS Plateau State Office.

iii. NYSC, SIWES & INDUSTRIAL ATTACHMENT SECTION:

NYSC

This unit is responsible for acceptance of graduates from various Institutions across the country for a One Year (1) mandatory youth service in the Institute. They were further posted to various divisions of the Institute according to their specialization and they come for monthly clearance to assist them access their monthly allowances from the State Secretariat.

Within the period in view which is January to December, 2024 the unit accepted a total number of 49 corps members based on the terms and conditions that

1. Accommodation is not available within the Institute's staff quarters.
2. No stipend is being paid on monthly basis due to paucity of funds.

SIWES UNIT

The Unit was also able to accept a total number of One Hundred and Fifty-Six (186) from various Institutions across the country, and from various discipline that cuts across the sciences e.g. Microbiology, Zoology, Animal Health and Production Technology, Agricultural Extension Management, etc. They were all posted to different divisions within the Institute's laboratories and the farms where they showcased high degree of responsibility and no adverse report was received within the period.

EDUCATIONAL VISITS

The unit was able to received and process Educational visits from Seventy-One (71) Institutions that cut across Universities, Polytechnics, Colleges of Education Secondary Schools and Primary schools within the federation.

These students were being toured round the various laboratories within the Institute as well as taken to the institute's farms like Livestock Investigation Division and Dagwom Farm with the exception of Poultry division due to Biosecurity measures put in place to curb the spread of highly pathogenic Avian Influenza.

iv. TRAINING SECTION:

The Training Section advises on training needs of staff, recommends staff for appropriate training in accordance with the Institute's training policy and process staff requests for training. The Section also recommends appropriate refund of monies paid in respect of staff

on completion of course of study as well as liaising with the Records Section in keeping records of Staff on training. In the year 2024, the following staff were trained:

S/No	STAFF NAME	DESIGNATION	PROPOSED COURE OF STUDY	INSTITUTION	DURATION OF PROPOSED COURSE OF STUDY	COURSE DURATION FULL/PART TIME	DATE OF COMMENCEMENT
PhD							
1	OlubadeOlatokinbo Toyin	Prin. Veterinary Research Officer	PhD. Disease Surveillance & Emergency Preparedness	University of Ibadan	5 years	part-time	1/8/2024
2	Okpalaeke Ebere Emilia	Research Officer I	M. Phil/Ph.D Pharmacology & Toxicology	University of Jos	5 years	part-time	9/17/2024
3	Chukwukere Victoria Chioma	Prin. Research Officer	Ph.D Agric. Extension	Abubakar Tafawa Balewa University,	5 years	part-time	1/15/2024

				Bauchi			
4	Chabiri Ladi Amos	Prin. Research Officer	Ph.D Veterinary Public Health & Preventive Med.	University of Jos	5 years	full-time	1/15/2024
5	Simon Emmanuel	Principal Research Officer	Ph.D Agric Extension	Abubakar Tafawa Balewa University, Bauchi	5 years	full-time	2/14/2024
6	Igah Olanrewaju Eyitayo	Prin. Veterinary Research Officer	Ph.D Veterinary Public Health& Preventive Med.	University of Jos	5 years	part-time	4/18/2024
7	Usman Yunusa	Principal Research Officer	Ph.D Chemistry	University of Jos	5 years	part-time	4/16/2024
8	Yakubu Samgyang Rhoda	Prin. Veterinary Research Officer	Veterinary Public Health & Preventive Medicine	University of Nigeria Nsukka	5 years	part-time	5/24/2024
9	Rayyanu Usman Adamu	Prin. Veterinary Research Officer	Veterinary Public Health & Preventive Medicine	Ahmadu Bello University, Zaria	3 years	full-time	2/5/2024
10	Olabode Peter Mayowa	Prin. Veterinary Research Officer	Veterinary Public Health & Preventive Medicine	Abubakar Tafawa Balewa University, Zaria	5 years	part-time	8/13/2024
M S C							
1	Swomen Lawrence Nkwap	Research Officer I	Med. Microbiology and Immunology	University of Jos	2 years	full-time	4/18/2024
2	Ogunmolawa Oluyemi Rotimi	Research Officer I	Veterinary Virology	University of Jos	2 years	full-time	5/11/2024

v. SECURITY UNIT:

PREAMBLE

The very virulent nature of the emerging security threats has been a source of worry not only to the government at all levels but a global pandemic. The growing loyalty of people towards

sub-state entities and the pervasive attitude of ethnic nationalism and ethnocentrism have been under mining national security for the Nigerian state.
Hence the imperativeness of having a professional and ever willing security personnel for the Institute.

THE UNIT'S AREAS RESPONSIBILITIES

In year under review, the unit was responsible for the provision of professional security services to the following areas:

(1) Acquired ATMN Dam; (2) Acquired Madara factory and senior staff quarters; (3)Acquired Madara Junior Staff quarters (4); Poultry Research; (5) Poultry Vaccine; (6) Livestock Investigation Division; (7) Dagawom Farm; (8) 7:00 O Clock Gate; (9) The Main Gate; (10) Central Diagnostic laboratory (CDL); (11) Dermatophilosis Research Centre; (12) Parasitology Division; (13) Rabbies Laboratory Division; (14) Quality Control Complex; (15) NVRI Guest House; (16) Viral Vaccine Production Division; (17) Central Store; (18) Foot and Mouth Disease (FMD); (19) New Vaccine Production Complex; (20) Small Animal Station; (21) Nitrogen Installation; (22) General Services & Workshop Division; (23) Veterinary Extension Division; (24) Bacteriology Complex; (25) Planning Division; (26) Central Administration Complex; (27) Accounts Division; (28) Audit Division; (32) Cyber Café Unit; (33) Grant Management Office; (34) NVRI Consultancy Ltd; (35) NVRI Staff Secondary School; (36) NVRI Primary School; (37) Large Animal Experiment Station; (38) Director/Chief Executive Resident; (39) Acquired BICOT Factory; (40) Acquired BICOT quarters; (41) Solar Energy Installation; (42) NVRI boreholes 1-6; (43) Dagwom Farm Dam; (44) NVRI Staff Quarters in Vom; (45) NVRI Staff Quarters in K-Vom; (46) NVRI Staff Quarters in Bukuru; (47) NVRI Staff Quarters in Hwolshe; (48) NVRI Staff Quarters in Bukuru Lowcost; (49) Beaton Road Quarters (50) Ungwan Killway Quarters; (51) PWD B Quarters; (52) Ungwan Gara Q; (53) Tailors Quarters; (54) Simon Way Quarters, (55) Court Yard Quarters; (56) Red Bricks/Sansi Quarters; (57) Kianey Cresent Quarters, (58) Goni Road Quarters; (59) Brandt Avenue Quarters; (60) Vaccine Complex; (61) Henderson Drive Quarters; (62) PWD A Quarters; (63) Ungwan Mangoro quarters; (64) Toxocology Students Quarters.

ACHIEVEMENTS

- Provision of security at the various locations
- Provision of security at various events in and outside the Institute
- Monitoring of students' activities on campuses
- Reduction in crime rate within the Institute and Colleges
- Arrests of many Suspects and their arraignment in various counts
- Securing convictions/sentence of some suspects by courts of competent jurisdictions
- Resolving of conflicts between and amongst aggrieved parties
- Provided escort duties to VIPs
- Effective collaboration and synergies with conventional security agencies
- Enhanced surveillance operations

CHALLENGES

- Gross inadequate manpower
- Lack of accoutrements for the personnel
- Lack of computer set for the units to process security information timely
- Lack of training/retraining of the personnel
- Lack of welfare packages to boost the Morales of the personnel
- Lack of adequate funding of security operations

FUTURE PLANS

- The units intend to build on the capacity of the personnel for enhance and proficient service delivery.
- To acquire complete set of computers for timely processing of security documents
- To train and retrain the personnel for optimum productivities
- To plead for additional manpower to the unit
- To acquire accoutrements for the personnel of the unit
- To go far ahead of criminal elements through improved intelligent gathering
- To reduce crime to the barest minimum
- To improve on collaboration and synergy with all relevant stakeholders
- To introduce and implement new strategies for crime detection, prevention and control

12. LEGAL UNIT

The Legal Unit serves as adviser to the Institute on all legal matters. It is also saddled with the responsibility to draft legal documents and handle both criminal and civil cases of the Institute in liaison with External Solicitors and Legal Department of the Federal Ministry of Livestock Development. The Institute had handled about four (4) cases in 2024 which are at various stages.

13. GENERAL SERVICES DIVISION

This Division is headed by an Assistant Director and it has two sections and one unit

1. WORKSHOP SECTION:

This section is saddled with the general maintenance of the Institute's physical structures, plants and equipment, plumbing, mechanical, electrical, generating machines etc. The Division also provides transport facilities and handles vehicles maintenance.

2. STORES SECTION:

INTRODUCTION

The Store division as always is leaving up to her mandate of ensuring an

uninterrupted flow of working materials to the production and services

departments of the Institute thereby contributing to the attainment of the

Institute's objectives**.**

The Central Stores is made up of the following classifications:

- Expendable
- Non- Expendable
- Consumables
- Glass-wares &Drugs
- Chemicals and Reagents.
- Vaccine Dispatch
- Dagwom Farm
- Workshop/Maintenance
- LID
- Furniture
- Ledger, Receiving
- Store and Scrap Stores units

During the year under review, the unit carried out the following tasks:

- The main stores maintains, keeps and receives all incoming expendables, Non-expendables, Consumables, Glass-wares, Drugs Chemicals and Reagents supplies of the Institute and releases same for use by all the producing research and services units, divisions and departments.

- The main stores ensure the proper documentation of all materials records and their physical correctness.

- The unit undertook the continuous reconciliation of the records of all stock able items in Shelves, Bins, Fridges, Cupboards and Bulk Stores, warehouse, containers and cold room.

- It ensures that all Expendables, Non-expendables, Consumables, Glass-wares, Drugs Chemicals and Reagents released are backed up by approved stores transferred vouchers (STR)

- It ensures posting of receipts, issues and costing of materials using FIFO and Materials valuation.

The Main Stores has a stock in hand worth **₦505,237,300.76** as at December 2024.

- Veterinary stores(EE) - ₦175,342,465.58
- Stationery(I) - ₦60,594,775.64
- Laboratory equipment store(GG) - ₦144,069,334.28
- other stock(II) - ₦35,354,875.87

- Industrial & chemical store((C) - ₦5,035,750.00
- Animal feed stores(DD) - ₦109,800.00
- Glassware/Apparatus(FF) - ₦21,999,340.39
- Electrical materials(U) - ₦21,519,357.00
- Farm stock(G) - ₦39,550,800.00

- Plant & equipment(BB) - ₦994,302.00

TOTAL **₦505,237,300.76**

VACCINE DESPATCH SECTION

	Viral Doses	**Bacterial Doses**	**BALANCE**
Opening Balance	1,269,305	1,866,200	3,135,505
Receipt	46,964,661	17,255,960	64,220,621
Total Available	48,233,966	19,122,160	67,356,126
Issue	35,605,638	16,668,780	52,274,418
Confirmed Balance	12,628,328	2,453,380	15,081,708

RECEIVING SECTION

S/N	**DESCRIPTION**	**1ST QUARTER (₦)**	**2ND QUARTER (₦)**	**3RD QUARTER (₦)**	**4TH QUARTER (₦)**	**TOTAL (₦)**
1.	**Stationary**	1,759640.00	2,608,600.00	6,082,668.00	9,100,910.00	**10,551,818.00**
2.	**Veterinary Store**	61,671,309.23	25,202,000.00	31,494,348.29	--	**118,367,657.52**
3.	**Fuel Lubricant**	348,500	2,469,872.00	3,847,940.00	5,184,500.00	**11,850,872.00**
4.	**Feeds**	29,310,302.00	48,518,669.00	30,115,125.00	4,581,880.00	**112,525,976.00**
5.	**Plant & Equipment**	3,627,000.00	9,121,695.00	---	---	**12,748,695.00**
6..	**Sport Kits**	----	---	---	350,000.00	**350,000.00**
7..	**Expendable / Equipment**	12,373,750.00	4,010,000.00	1,351,000.00	1,958,000.00	**19,692,750.00**
8.	**Electrical Materials**	----	190,000.00	673,500.00	828,200.00	**1,691,700.00**
9.	**Non-Expendable**	----	-----	50,264,610.00	16,249,000.00	**66,513,610.00**
10.	**Consumabl**	46,740,219.	28,492,744.0	4,723,960.0	6,583,591.0	**86,540,514.33**

	e	33	0	0	0	
11.	**Glassware/ Apparatus Store**	19,175,000.00	128,479,811.05	----	28,081,623.81	**175,736,434.86**
12.	**Plumbing Materials**	1,979,500.00	486,500.00	---	---	**2,466,000.00**
13	**Building Materials**	------	137,000.00	2,050,000.00	40,200.00	**2,227,200.00**
14	**Diesel**	92,807,500.00	139,750,000.00	86,000,000.00	161,250,000.00	**479,807,500.00**
15.	**Welding materials**	4,995,400.00	----	----	---	**4,995,400.00**
16.	**Office Equipmt**	-----	16,722,881.81	---	---	**16,722,881.81**
	Total	**274,788,120.56**	**406,189,772.86**	**216,603,151.29**	**234,207,904.81**	**1,131,789,009.52**

WORKSHOP/MAINTENANCE SECTION (DIESEL)

Jan – Dec.,	**Qty**	**Unit of issue**	**Rate ₦**	**Value ₦**
Bal B/F	**4,000**	**Litre**	**1,660.25**	**666,500.00**
Supplies **Supplies**	**25,000** **218,100**	**Litre** **Litre**	**1,660.25** **2,150.00**	**41,506,250.00** **468,915,000.00**
Surplus	**Nil**	**Nil**		
Total Available	**243,100**	**Litre**		
Total Issued	**25,000** **218,100**	**Litre** **Litre**	**1,660.25** **2,150.00**	**41,506,250.00** **468,915,000.00**
Closing Bal.	**310**	**Litre**	**2,150.00**	**666,500.00**
	Total		**N**	**N**

The total quantity of diesel dispensed from January to December 2024 was

242,790 Litres and the total cost was **₦515,103,250.00** only.

LEDGER/DOCUMENTATION SECTION

The Ledger/Documentation comprises of the following sub-units; Ledger,

Plants, Security Document and Furniture.

During the year under review, the unit carried out the following tasks:

- The Ledger received all incoming store vouchers and store issue vouchers for non-expendables, consumables, Glass-wares; Drugs, Chemicals and Reagents, Plants, Furniture and its Documentation.
- The Ledger ensures the proper documentations such as posting and filing of these documents for future references.
- It ensures posting of receipts, issues and costing of materials.
- The Ledger keeps receipts and other security documents for the Institute; these are issued to Accounts and other departments; these receipts are issued base on approved applications or requirements.

ACHIEVEMNETS

During the year under review, the following constituted our achievements. These are:

- We fostered relationship among ourselves and with other departments of the Institute.
- We reconciled some Physical items with the Bin Cards and Ledgers.
- We grouped some items according to their classes.
- weekly, monthly and quarterly records are reliable
- fixing of power house door at workshop
- there was an in-house training for staff on how to handle the software installed in the central stores

CONSTRAINTS

- Most orders delivered are not processed in the stores before they are paid for and as a result materials inflows are not captured in our stores records.
- The inability to renovate the store house has negatively affected ventilation and storage space.
- The store house is choked up with outdated or obsolete materials/items i.e. expendables/ Non-expendables, consumables and Glass-wares.
- The store house is also choked up with slow moving items and some expired drugs, chemicals and reagents.
- Lack of proper fencing of the stock yard for junk/returned materials.
- Only two((2) systems are linked while we have more than five units
- The vaccine cold room is not functioning hence needs total overhaul.
- Lack of protective clothing for all store staff e.g. overall/boots
- Lack of bulk purchase has given room to individual/departmental purchase and has hampered proper documentation and not accounted for exact amount spent on stocks.
- Lack of cold van to convey vaccines from production to store and from store to sales unit/consultancy
- The Store Division at the moment is under staff

WAY FORWARD

1. The entire Stores require an intensive In-House Training in the use of software in inventory control
2. The provision of Stores handling equipment such as fork lift to enhance our performance.
3. The Stores houses are in a dilapidated condition and calls for urgent rehabilitation of the Store houses and Offices for job performance.
4. A total overhaul of the Cold Room Stores is urgently recommended.
5. The Stock Yard should be well fenced, cement and secured.
6. The staff assigned to cover Dagwon Farm, poultry and LID need means of movement to ease his work
7. The Store Division need at least four(4) Senior and Junior staff each for the Division to perform optimally
8. Hazardous condition of the store house should be looked at.
9. A cold van should be made available for vaccine movement

This Section is responsible for accepting into and issuing out all items of store. This includes keeping for safety and issuance of vaccines, stationery, equipment and machineries, laboratory equipment, diesel etc.

14. ENVIRONMENTAL AND SANITATION UNIT

The Environmental Unit is responsible for landscaping of the Institute's environment as well as daily cleaning of the entire environment including offices/laboratories.

ACTIVITIES OF THE DEPARTMENT IN THE YEAR 2024

During the year under review (2023), the Department handled the following activities:

1. Promotion
   - Senior staff - 102
   - Junior staff - 15
2. Advancement/conversion
   - Senior staff - 10
   - Junior staff - 10
3. Disciplinary cases
   - Senior staff - 5
   - Junior staff - 4

   Confirmation -
   - Senior staff - Nil
   - Junior staff - Nil
4. Retirements - 17
5. Deaths - 3
6. Employment/recruitment - Nil
7. Dismissal - Nil

8. Termination of appointment - Nil
9. Resignations - 1
10. SIWES - 200
11. NYSC - 25
12. Educational visits - 71
13. Training
    - Junior staff - Nil
    - Senior staff - Nil

ACHIEVEMENTS

1. Successful enrolment of staff scheduled for retirement between January to December, 2023
2. Successful processing and payment of deceased staff of the Institute's benefits and group life insurance (for the year 2023)
3. Successful conduct of confirmation examination (for the year 2024).
4. Successful defence and implementation of manpower/workforce budget at the Office of Head of Civil Service of the Federation, Abuja in the year under review.

CHALLENGES OF THE DEPARTMENT

1. Insufficient provision of working equipment e.g. computers (Laptops and Desktops), printers and photocopiers
2. The Department is in dire need of an overhaul of her cabinet system which are obsolete
3. The Department is aback in staff training and workshops to meet up with effective and optimal performance and productivity.

15. INTERNAL AUDIT DEPARTMENT

MANDATE:

The Legal instrument for the establishment of Internal Audit Units in Ministries/Extra-Ministerial Departments is the Financial Regulations which states that "An Internal Audit Units is established to provide a complete and continues audit of the Accounts and records of revenue and expenditure, plants, allocated stores and unallocated store…."

It is mandatory for every self-accounting Ministries, Departments and Agencies (MDA) to have an Internal Audit Unit.

FUNCTIONS

i. Ensuring compliance with rules, regulations and procedures in the conduct of governments business.

ii. Ensuring that adequate and accurate books of accounts and records of all activities of the Institute, are kept in accordance with the necessary standards of operation.

iii. Examining the procedures and processes of all major operations of the Institute, with the aim of identifying areas where efficiency and effectiveness can be improved.

iv. Ensuring that errors/frauds are prevented, or detected as early as possible.

v. Ensuring that proper internal control, checks and balances are put in place and operationalto ensure that, activities and resources are channeled towards the overall goals of the organization.

vi. Liaising with External Auditors in ensuring that, Accounts are prepared in accordance with International Accounting Standards.

NOTABLE ACTIVITIES:

i. We carried out monthly post-payment checks of staff salaries and ensured that, staff who retired or transferred their services were promptly deleted from the payroll.

ii. We maintained an up to date query register and followed up on Audit queries raised.

iii. We ensured that contracts were executed according to the terms of the contracts and ensured that, necessary tax deductions were effected.

iv. We interacted with the Accounts Department on ways and means of improving internal controls.

ACHIEVEMENTS:

i. We attained 100% prepayment audit on all transactions sent to the Audit.

ii. **Post-payment Audit:** We carefully reviewed paid vouchers to ensure that, proper retirements were done with adequate supporting documents.

iii. Observations and Recommendations were made to the Chief Executive, on strengthening of Internal Controls and improving efficiency.

iv. Ensuring that goods supplied in Dagwom farm, Poultry and LID were properly inspected and verified base on the contract agreement specification.

CHALLENGES:

i. Due to Paucity of Funds, we were not able to cover all our Audit routine to the outstation laboratories,

ii. Staff of the department have not participated in workshops/seminars, in the field of Auditing and ICT for the last three (3) years.

iii. Auditors opinion on compliance with financial rules and regulation/recommendations for action or correction were not adhered to.

FUTURE PLAN:

We hope to widen our scope, to cover more on operational Audit and Risk assessment in line with modern Auditing.

16. ICT AND LIBRARY DIVISION

The NVRI library collection concentrates on materials of educational value in the fields of Veterinary, Medical Laboratory and allied sciences to support research and development in animal diseases treatment and control.

In order to carry out these functions the library is divided into 4 sections which are as follows;

a) Circulation and Reference
b) Serial
c) Technical
d) e-library

Overall, the Division performs the following;

1. Provide research staff access to the right information, in the right form at the right time.
2. Establish a computerized information system for easy access to current information on animal health and production from all over the world.

3. Create and manage local databases on the country's animal health and production research activities.
4. Make information on the country's animal health and production activities availableto stakeholders from all states of the federation.
5. Provide extension workers nation-wide access to expert advice on wide range of problems, to enable them transfer this knowledge to end-users.
6. Avail researchers and academicians from universities, polytechnics and other institutions of higher learning as well as businessmen and policy makers with relevant scientific information.

During the year under review, the library received 425 queries from clientele, 7 publications as gift from ACIAR and 26 staff theses and projects.

CHALLENGES

1. Lack of internet connectivity in the e-library to support the research work in the institute.
2. The library software meant for the retrospective conversion is not functioning
3. The computers in the e- library are not functional.
4. None subscription of current journal titles and books.
5. Lack of scanner to help in preparing documents for full automation of library resources especially staff publications that are brittle for preservation.

FUTURE PLAN

1. Reassessing the free subscription status of online databases e.g. AGORA, HINARI etc.

2. Subscription to new online databases.

3. Staff training in ICT especially on database management creation.

CYBER CAFÉ UNIT

This unit is responsible for the maintenance of internet services and interconnectivity of Divisions in the Institute. The Unit is saddled with the responsibility of resolving internet downtimes, software's upgrades, installations, troubleshooting hardware and IT equipment maintenance within the institute and managing the institute website.

During the year under review, the basic activities the unit carried out include;

1. Management of the official email with (NVRI) domain addresses for staff
2. Management of the NVRI website www.nvri.gov.ng
3. Development of software's application for the institute
4. Computer maintenance and repairs
5. Installed and upgraded software on Staff personal computers
6. Training of IT students
7. Scan and printed documents

CHALLENGES

Some of the constraints of the unit includes;

i. Lack of general internet service for the Institute
ii. Lack of relevant software for installation, upgrade and maintenance
iii. Lack of hardware replacement component systems available for users

17. LABORATORY SERVICES DIVISION

FUNCTIONS OF THE DIVISION

- Disease diagnosis and surveillance involving all animal diseases
- Ambulatory services based on farmer's request
- Laboratory investigation of disease agents involving all animal diseases
- Serving as a referral centre for the States and outstation laboratories for disease diagnosis
- Providing diagnostic trainings for other agencies and laboratories

ACTIVITIES OF THE DIVISION

- Preparation of various culture media
- Isolation**, i**dentifying and sensitivity testing of pathogens from animal tissues, feed, food and water
- Visiting of farms with outbreaks
- Sample collection and transport
- Consultancy services on bio security and infection prevention
- Detection of antimicrobial resistant pathogens (bacteria)
- Supervising student's projects
- Training of students on Industrial attachment
- Quality control of reagents, biochemicals and media
- Storage of divisional stock cultures from routine laboratory isolates
- Coprology and haemo-parasitic investigation
- Analysis of whole blood for haematological parameters
- Analysis of serum/plasma samples and other body fluids for clinical pathology
- Any ad-hoc duty as may be assigned by the Divisional head.

SUMMARY OF SAMPLES ANALYZED IN BACTERIOLOGY LABORATORY FOR THE YEAR 2024

S/No.	SPECIMEN	NO OF CASES	NO OF SAMPLES
1	Bovine	26	70
2	Avian	127	341
3	Canine	29	96
4	Feline	1	3
5	Caprine	11	17
6	Laprine	33	112
7	Equine	4	10
8	Ovine	17	41
9	Feed	10	16
10	Water	7	14
11	Human	3	3
12	Porcine	6	22
13	Plant	1	3
14	Ash	1	1
15	Plate	1	6
16	Bat	1	3
17	Vaccine	5	9
18	Meiaa(vaccine)	3	2
19	Pisces	4	6
20	Milk	2	2
21	Cassava	2	2
22	Broth	7	7
TOTAL		**301**	**786**

NUMBER OF BACTERIA ISOLATES

	Isolates	No
1	Bacillus spp	84
2	Escherichia spp	157
3	Salmonella spp	8
4	Proteus spp	37
5	Pseudomonas spp	19
6	Klebsiella spp	14
7	Aeromonas spp	10
8	Micrococcus spp	2
9	Lactobacillus spp	1
10	Streptococcus spp	1
11	Enterococcus spp	1
12	Mucor	1
13	Enterobacter spp	1
	TOTAL	336

ACHIEVEMENTS

i. The sections were able to reduce the turn-around time for result based on the availability of consumables/reagents.
ii. There has been an improvement on staff training on basic areas of development as it relates to current techniques.
iii. Some staff members of the Division are undergoing postgraduate studies
iv. Trained 201 students on industrial attachment and attended to students from 24 institutions on excursion in 2024.

18. PARASITOLOGY LABORATORY SECTION

1. The turn-around time for samples was highly improved upon
2. The laboratory handled 644 coprology and 80 haemo-parasitic samples

SAMPLES ANALYSED FROM JANUARY-DECEMBER, 2024

S/N	Specie	Faeces	Blood	Not suitable	Total
1	Avian	185	0	0	185
2	Bovine	52	41	0	93
3	Canine	46	21	0	67
4	Caprine	100	1	0	101
5	Equine	20	5	0	25
6	Laprine	19	1	0	20
7	Ovine	135	10	0	145
8	Porcine	84	1	0	85
9	Pisces	2	0	0	2
10	Wild Bat	1	0	0	1
	Total	**644**	**80**	**0**	**724**

CLINICAL PATHOLOGY SECTION ACHIVEMENTS

Manual handling of haematological samples has been stressful, but successful

Putting through or teaching of students on industrial attachment.

Despite the challenges the laboratory has been able to run samples successfully.

CLINICAL PATHOLOGY LABORATORY

CLINICAL CHEMISTRY SECTION

The unit has not performed any diagnostic work this year due to lack of reagents for the auto-chemistry equipment.

HAEMATOLOGY SECTION

(a) This section is saddled with the receipt and analysis of duly registered hematological samples from the reception

Hematology samples handled in 2024

S/N	Specie	Suitable	Not suitable	Total
1	Avian	213	0	213

2	Bovine	50	0	50
3	Canine	12	0	12
4	Caprine	09	0	09
5	Equine	10	0	10
6	Human	0	0	0
7	Laprine	106	0	106
8	Ovine	0	0	0
9	Porcine	0	0	0
10	Pisces	32	0	32
	Total	430	0	430

CHALLENGES

- Many laboratory equipments need servicing and calibration e.g. the auto-chemistry analyser, and the auto-haemoanalyser have been down for years.
- Reagents for chemistry and haematological analysis are not available.
- Supply of consumables for laboratory use such as microscopic slides, cover slips, cotton wool, plasticine, and media is irregular.
- Shortage of staff (laboratory assistant).
- Lack of a UPS to protect laboratory equipments from power surge.
- Inadequate office accommodation, many staff members do not have offices.
- Inadequate power gadgets/expansion in the unit that can accommodate some equipment.
- The microscopes are faulty.
- The procurement of a new auto-vet hemoanalyser will be helpful to the division.
- Diagnostics requires that a mini molecular laboratory be established in the unit to enhance specific confirmation of some important bacteria and viruses before proceeding further in other research laboratories.

Research highlights

A research group is working on Antimicrobial Resistance (AMR) to find out residues of antibiotics in ruminants.

19. LIVESTOCK INVESTIGATION DIVISION

A. Function/Mandate

Livestock Investigation Division (L.I.D) was established with the primary purpose of producing quality animals for vaccine production and research. A section (Lab cattle section) is dedicated to producing cattle for vaccine production. The division is also involved in the production of animal species (Bovine, Equine, Ovine, Caprine and Swine) for vaccine production and testing of biological research in all aspect of disease diagnosis, prevention and control. Furthermore, development of pasture grasses for livestock feeding, consultancy services and training of middle manpower for the Nigerian livestock industry.

B. Achievements

1. Preparation and cultivation of 34 hectares of land for hay and silage production.
2. Proper maintenance of the institute tractor for efficient running of farm operations such as silage making and hay production.
3. Supervision of research student/training of students in different sections of the farm e.g.Artificial insemination section, health section.
4. Maintenance of the health status of all the animals in the farm via routine procedures such as; vaccination, deworming, ecto-parasite control etc.
5. Provision of bulls to bacterial vaccine for vaccine production. The farm has supplied over 8 bulls for vaccine production.

C. Challenges

1. Security challenges in the farm (e.g. vandalization and theft of metal fences, equipment and roofing sheets).
2. Unavailability of Liquid nitrogen for semen processing and preservation.
3. Obsolete farm equipment e.g. hay cutter, silage harvester and tractor
4. Shortage of Manpower in farm machinery section. Presently the farm has only one tractor operator.

D. Research Highlights

1. Pregnancy rate of indigenous cattle following artificial insemination using NVRI, Vom cryopreserved semen and imported cryopreserved semen.
2. Fertility and hatchability trial of poultry eggs following artificial insemination.
3. Fertility and seminal characteristics of Friesian bulls raised in Jos, Plateau State.

20. PARASITOLOGY DIVISION

Functions and Mandate

The **Parasitology Division 2024 Annual Reports (January-December)** outlines the functions and mandates of the division, which consists of six sections: Molecular Parasitology, Helminthology, Protozoology/Diagnostic Parasitology, Entomology, Ethno-veterinary, and Parasite Immunology. The division is **mandated to conduct research and diagnosis of all economically important parasitic diseases of livestock and poultry and to proffer treatment and control strategies**.

Research Activities

The Parasitology Division is involved in conducting research on economically important parasitic diseases of livestock and poultry. Specific research activities mentioned include the **evaluation of** *Khaya senegalensis* **plant extracts for anti-coccidia activities in rabbits**, which was carried out in the Helminthology Laboratory. Additionally, **MSc. students from various universities brought samples for analysis on ticks and insects identification and amplification of various zoonotic pathogens**.

Capacity Building and Training

The division conducted **divisional seminars for divisional staff and students on Industrial Attachment**. Furthermore, **three staff members obtained higher degrees from the University of Jos, including 2 PhDs and 1 MSc.**. The **Nduaka Education Foundation (NEF) internship training for toxicology** also took place, with staff from the Parasitology Division serving as mentors.

Infrastructure and Facilities

The Protozoology and Helminthology laboratories faced challenges due to the **breakdown of refrigerators, centrifuges, and stabilizers.** The division also experienced **irregular water supply for diagnosis** in the laboratory. Additionally, there was an **insufficiency of binocular light microscopes, reagents, and consumables for molecular analyses.**

Human Resources and Staff Development

The Parasitology Division consists of staff within its six sections. Some staff members served as **mentors for the Nduaka Education Foundation (NEF) internship training**. Within the year, **six staff members were also promoted to higher positions**.

Community Engagement and Outreach

Five MSc. students from different Universities (ABU, UNIJOS, UNILAG, UNI-Abuja) brought samples for analysis on ticks and insects identification and amplification of various zoonotic pathogens, suggesting a collaboration with academic institutions.

Challenges and Constraints

The division faced several challenges, including the **breakdown of refrigerators, centrifuges, and stabilizers in the protozoology and helminthology laboratories**. There was also **irregular water supply for diagnosis**. Furthermore, the division experienced **inadequate funding for research activities** and an **insufficiency of binocular light microscopes, reagents, and consumables for molecular analyses**. Another challenge mentioned is the need for a **product to be registered with NAFDAC for Marketing**.

Future Plans and Recommendations

Research activities will be facilitated if certain provisions are made in the Division. One specific future step mentioned is the **registration of a product with NAFDAC for Marketing**.

Appendix

1. **Protozoology Section**

During the reporting year, the laboratory received a total of 679 blood samples from various animal species for diagnostic testing. Of these, 102 samples tested positive for different parasite species. The breakdown of samples received included: Bovine: 542 samples, Ovine: 17 samples, Canine: 77 samples, Caprine: 36 samples and Laprine: 7 samples. The summary of identified parasites is presented in Table 1.

Table 1: Parasites identified from different animal species.

S/N	Animal spp.	No. of Samples	No. Positive	Type of samples	Parasites found
1	Avian				
2	Bovine	542	79	Blood	*Babesia spp., Trypanosoma spp., Theileria spp.*
3	Canine	77	17	Blood	*Babesia spp.*
4	Caprine	36	6	Blood	
5	Equine				
6	Feline				
7	Laprine	7	nil	Blood	……
8	Ovine	17	Nil	Blood	*Babesia spp.*
9	Porcine				

10	Wildlife				
	TOTAL	679	102		

2. Helminthology Section

During the reporting period, the Helminthology unit received a total of 1,676 samples for diagnostic analysis. These samples were collected from animal feces, intestines, cassava roots, and soil. The distribution of samples was as follows: Avian: 565 samples, Bovine: 638 samples, Canine: 197 samples, Caprine: 24 samples, Laprine: 14 samples, Ovine: 58 samples, Porcine: 150 samples, and Cassava roots/soil: 30 samples. A summary of the diagnostic findings is presented in Table 2.

Table 2: Samples and parasites identified from various animal species, cassava roots/soil.

S/N	Animal spp.	No. of Samples	Type of samples	Parasites found
1	Avian	565	Intestinal	*Coccidia oocysts, Ascaridia galliae, Ascaris, Toxocara, Capilaria, Syngamus, Heterakis galliae, Strongyloides*
2	Bovine	638	Faecal	*Babesia spp., Coccidia oocysts, Haemonchus, Sacorptic mites, Ancylostoma spp., Moiezia, Fasciola spp., Oesophagostomum spp., Bunostomum spp., Trichostrongylus,, Dicrocoelium, Toxocara, Cooperia, Trichuris trichuria, Strongyloides.*
3	Canine	197	Faecal, Intestinal	*Ancylostoma, Toxocara, Spirocerca, Coccidia oocysts, Strongyloides, Troglotrema, Diphyllidium, Ascaris, Dicrocoellium larvae.*
4	Caprine	24	Faecal, Intestinal	*Trichostrongyle, Strongyloides, Oesophagustomum, Coccidia oocysts,*
5	Equine	-	-	-
6	Feline	-	-	-
7	Laprine	14	Faecal, Intestinal	*Coccidia oocysts,*
8	Ovine	58	Faecal, Intestinal	*Coccidia oocysts, Haemonchus, Mites eggs*
9	Porcine	150	Faecal	*Coccidia oocysts, Ascaris, Strongyloides, Stephanurus dent., Hyostrongylus rubidus, Physocephalus sexalatus.*
10	Cassava roots/soil	30	Roots/ Soil	
	TOTAL	1,676		

3. Entomology Laboratory Unit

A total of 153 external parasites were presented to the entomology unit for identification and diagnosis from various animals. The results are summarized in the Table 3.

Table 3: External parasites identified from various animal species.

S/N	Animal Species/ Traps	Type of Sample	Number Of Samples	Results
1	*Bovine*	Ticks	14	*Amblyomma variegatum* 13, *Hyalomma truncatum* 8, *Rhipicephalus(Boophilus)spp.* 53, *Rhipicephalus muhsamae 1*
2	*Canine*	Skin scraping and Ticks	3	*Rhipicephalus sanguineus 16*
3	Fish	Skin, Eyes and Fins	75	Skin= *Apiosoma spp. 8, Dactylogyrus spp. 1, Odinium spp. 9, Trichodina spp. 2.* Eyes = *Odinium spp. 2.* Fins = *Apiosoma spp. 1, Odinium spp. 7,*
4	Insects	Insects	57	*Acanthomyia spp. 1, Acraea horta 1,, Apis spp. 3, Dichotamus spp. 1, Lucilia spp.1, Moths 14, Musca spp. 10, Nathalis iola 10, Phosphaga atrata 4, Sarcophaga spp. 9, Sinokylon spp. 2, Stomoxys spp. 1*
5	*Ovine*	Skin scraping, Ticks and Maggots	4	*Amblyoma variegatum* 5, *Oestrus ovis larvae*
	TOTAL		153	

21. Ethnoveterinary/ Production Unit

Table 4: Scabicur products

ANNUAL REP.	PRODUTS			TOTAL
Jan-Dec.	Soap	Ointment	Lotion	
	1,927	453	188	2,568

Within the period under review (January-December, 2024), a total number of 2,568 Scabicur® products comprising Soap (1,927), Ointment (453) and Lotion (188) were produced and supplied to the Consultancy Department of the Institute as presented on the Table above.

22. PLANNING DIVISION

The Planning Division is charged with the responsibility of formulation, co-ordination, collecting, collating and analyzing all kinds of data for smooth running of the Institute projects and programmes for effective implementation of the institute's mandate. It also serves as the DATA BANK of the Institute.

The Division processed several data relating to research, vaccine production, socio-economic activities; Institute's landed properties and Human Resource Planning in the year under review.

The activities surrounding data collected this year were as follows:

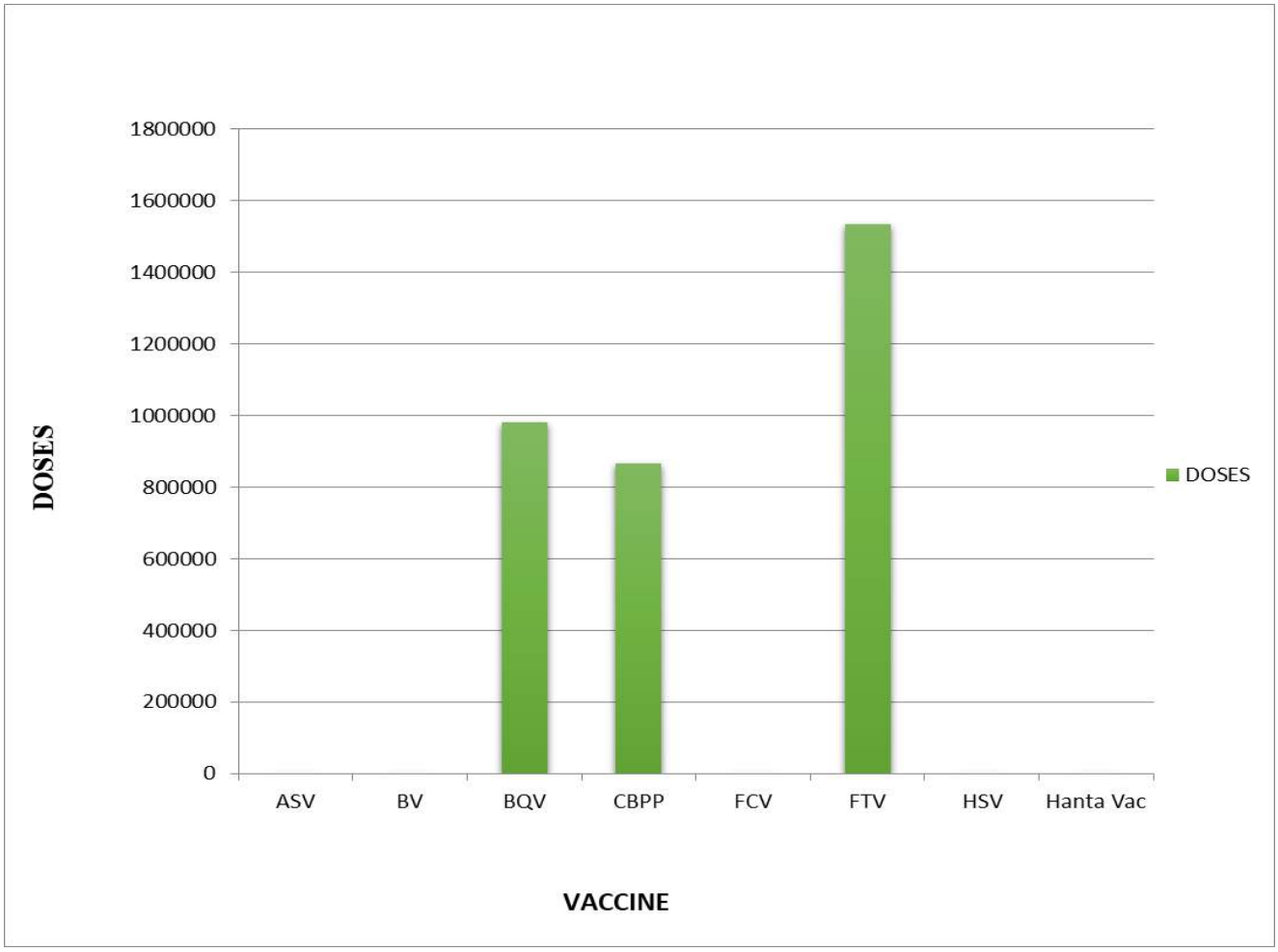
1. Populated the template on Instruments for data collection on annual Report writing for 2020,2021,2022,2023 and 2024 from Agricultural Research Council of Nigeria (ARCN).
2. Populated the 2024 Output Reporting Template (1st, 2nd, 3rd &4th Quarter) from ARCN.
3. Populated the Ministerial Deliverables and Validation for Quarterly Reporting.
4. Populated Capacity needs assessment for the Institutes conducted from ARCN
5. Prepared the Divisions 2024 annual report.
6. Visit of National Agricultural Development Fund (NADfund) team to the Institute for the purpose of on-the spot facilities assessment. This was to enable NADfund identify the areas of strength, weakness and challenges of the Institute which will eventually attract interventions by NADfund

The Division also carried out the following activities:

- Updated the 2024 Institute Nominal Roll for the purpose of statistical analysis.
- Distributed the Institute's publications to dignitaries that visited the Institute.

- Processed and produced Eighteen (18) PVC Staff ID.
- The Gender Unit had an interactive session with ARCN on issues on challenges of the Unit in Research Institutes and Colleges. Among which are domestication of the Unit in the Institutions and budget provision for the activities of the Unit.
- Compiled and analyzed the bacterial and viral vaccine production data and also the vaccine demand & supply data.
  The following figures show Vaccine production as well as vaccine demand, supply and vaccine excess demand charts.

Fig1: Bacterial Vaccine Production Chart



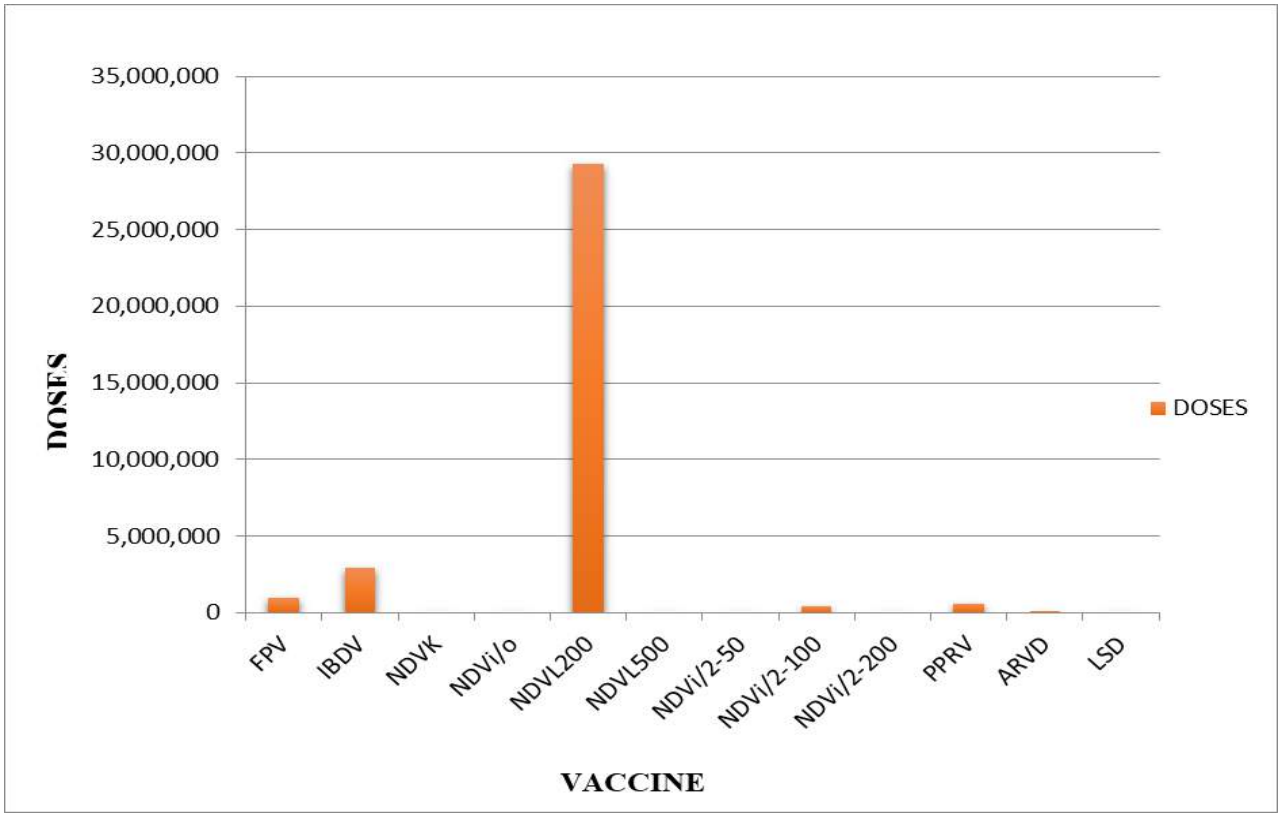


Fig2: Viral Vaccine Production Chart

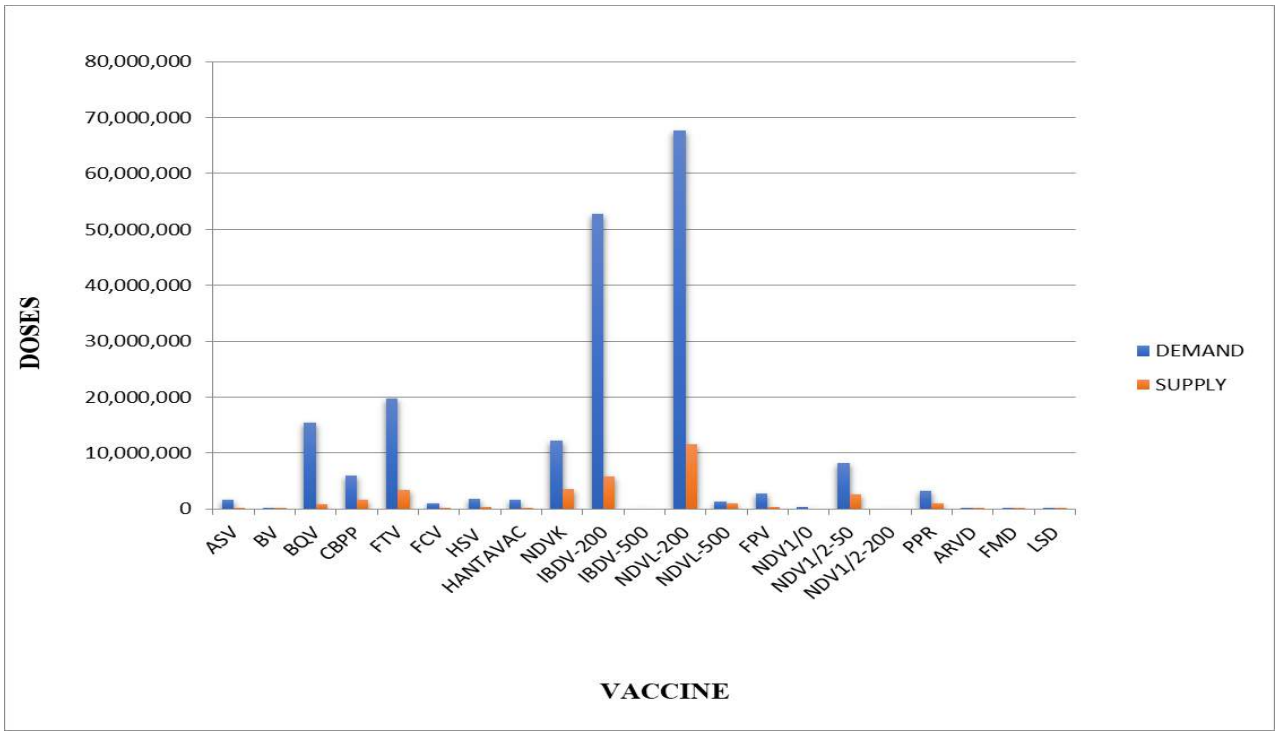
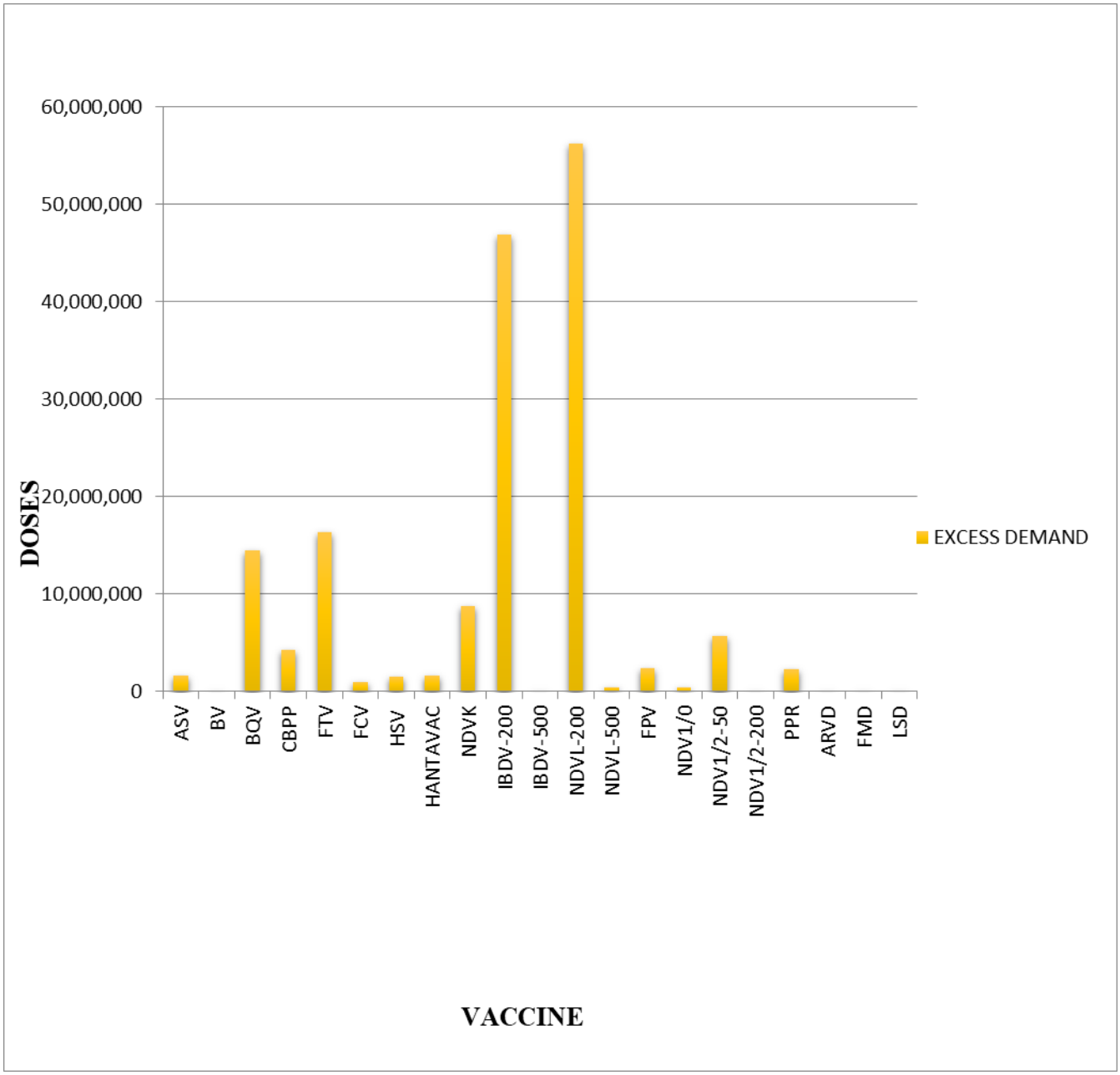


Fig3: Vaccine Demand and Supply Chart

Fig4: Vaccine Excess Demand Chart



Future Plan

- To establish effective and efficient information systems to manage the Institute's database.
- Good planning and organizational skills with a strong focus on attention to details, quality and high performance.

Challenge

- Insufficient computer systems, softwares and data storage gadgets.
- Inadequate office space for staff and for keeping sensitive documents.
- Good tables and chairs.

23. POULTRY DIVISION

FUNCTIONS /MANDATE OF THE DIVISION

1. To produce fertile eggs for various vaccines production.
2. To produce chicks for vaccine testing and research purposes.
3. Investigate diseases of poultry that may hamper productivity.
4. Investigate all aspects of poultry nutrition and disease management
5. Introduction, adaptation, and disease Management of exotic breeds of poultry.
6. Teaching/Training of students from tertiary institutions, colleges and universities.

ACHIEVEMENTS

1. Raising birds as replacement for vaccine birds.
2. Supply of fertile eggs for the vaccine production laboratories.
3. Provision of fertile eggs for the Research and Quality control laboratories.
4. Production of quails and other species of birds in the farm.
5. Revenue generation from the sales of poultry and poultry products.
6. Hatching of quails and other exotic birds for undergraduate and post graduate studies/research.
7. Provision of fertile eggs for postgraduate research.
8. Hatching of F3 Isa brown breed of birds for commercial egg production
9. Visitation of National University Commission (NUC) accreditation team to the Institute in collaboration with University of Jos MOU
10. Training of Food and Agricultural Organization (FAO) trainee participants on some samples collection in poultry farm.
11. Two weeks technical training on General Hatching Management and Techniques of egg incubation.
12. Divisional seminars
13. Training of Students on Industrial Training.
14. Supervision of Students Project from Federal College of Animal health and Production Technology, Vom.
15. Hatching and sales of Quail chicks

16. Biosecurity optimization formed the fulcrum of our efforts towards the prevention, mitigation, and control of diseases in the farm. This principle yielded significant reduction in the number of disease incidents during the year under review.
17. Frequent training of all cadres of staff on Biosecurity as it relates to management practices and productivity.
18. Early prophylaxis as a tool in mitigating production losses due to disease.
19. In the year under review, there was no disease outbreak in the Division.

CHALLENGES

1. Insufficient feed for the birds
2 Unstable power supply
3 Lack of perimeter fencing for the frontage of the farm**.**
4 Inadequate junior staff strength.
5 Lack of offices/conveniences for junior staff
6 Dilapidated hatchery due to damage by rainstorm.
7 Old and obsolete incubators that need urgent replacement/routine servicing
8 Lack of mini-Poultry processing plant.
9 Dilapidated administrative block/staff offices with insufficient tables and chairs.

24. PLANT AND LABORATORY EQUIPMENT MAINTENANCE DIVISION

FUNCTIONS AND MANDATES

The Plant and Laboratory Equipment Maintenance Division is committed to ensuring the optimal functionality, reliability, and compliance of laboratory and production equipment within the Institute. The key objectives for the reporting period include:

1. Ensuring routine calibration and validation of equipment with proper documentation in compliance with ISO 17025:2017 standards.
2. Maintaining an Overall Equipment Effectiveness Time (OEET) of 99% during production and research activities through a structured maintenance schedule, including planned preventive maintenance, corrective maintenance, and emergency maintenance.
3. Achieving 100% equipment uptime during vaccine production cycles and research activities.

Key Achievements in 2024

In pursuit of these objectives, the division successfully implemented several initiatives, including:

I. Capacity Building: Organized a three-day step-down training on Biosafety Cabinet usage and maintenance for all Equipment Officers in the Institute.
II. Equipment Installation & Training: Installed the newly donated ASB300 Astell Autoclave in the Viral Vaccine Production unit and conducted user training on its operation and routine maintenance.
III. Facility Operations & Maintenance: Ensured the operation, servicing, and maintenance of the Institute's Biosafety Level 3 (BSL-3) laboratory.
IV. Equipment Calibration & Verification: Supervised the calibration of micropipettes, centrifuges, autoclaves, and thermometers in the AMR, AI, and FMD divisions, conducted by Selfa Nig. Ltd.
V. Quality Control Measures: Regularly performed intermediate checks on pipettes and analytical balances within the Institute.
VI. New Equipment Installations: Installed Sonicators in the Biochemistry, AMR, and Viral Research divisions.
VII. Asset Management: Conducted a comprehensive equipment inventory across the Institute.
VIII. Digitalization & Tracking: Developed a Google Sheet-based tracking system to enhance equipment monitoring and management.

The Plant and Laboratory Equipment Maintenance Division remains dedicated to supporting the Institute's research and production activities by ensuring equipment reliability, compliance, and efficiency.

25. PRINTING AND PUBLICATION

FUNCTIONS AND MANDATE

The Printing and Publication Division of the National Veterinary Research Institute, Vom, was established as a service department of the Institute, to meet its numerous printing requirements/needs. At the start in 1988, a mandate was officially given to the printing press by the management at that time, which stated thus:

- To handle all the printing requirements of the Institute
- To formulate new concept, design, code and printing of all the Institute vaccines labels.
- To publish/print all Scientific and Technological Research Journals that will be sent to the Divisions.

The functions of the printing and publications division are not limited to but include the printing of the following:

- Vaccine Labels
- Scientific Journals
- Official Sales Invoices
- Officials Receipts
- Yearly Calendar

- Official headed papers, envelops and File Jackets
- Examination answers booklets for the colleges etc.
- Annual Report
- Etc

OFFICIAL JOBS HANDLED FROM JANUARY TO DECEMBER, 2024

The following jobs were produced during the year under review:

JANUARY – DECEMBER, 2024

NDV-I2	-	81,380 pieces
PPR	-	48,200 pieces
Black quarter	-	5,750 pieces
Hantavac	-	2,425 pieces
Sterile diluents	-	14,050 pieces
LSD	-	2500 Pieces
FMD	-	1585 pieces
CBPP	-	880 pieces
Vaccine Sale invoice	-	500 booklets
Letter head Papers	-	3000 copies
Analysis Book	-	151booklets
Jotters EDVR Office	-	100 copies
Visitors Book	-	100 booklets
Attendance Register	-	500 booklets

CHALLENGES

- Shortage of Technical staff
- Lack of modern printing equipment
- To have the opportunity to attend conferences, Book Fairs and International Printing Exhibitions. The printing festivities feature live display of the various printing technologies from different companies from all over the world and provide the option to choose a printing technology that best suits the Institute's printing need especially the vaccine label.
- Renovation /creation of additional offices through partition
- Creation of an independent entry/exit into the division
- Creation of toilet convenience for the division

FUTURE PLAN

At the moment, there are several printing technologies evolving with benefits and value. The division will want to pursue a printing technology that will best suit the need of the Institute in these modern times were exciting quality products of good

Standard will be produced. The technology will also include the protection of the Institute's numerous brands and other benefits such as:

i. Revenue generation; the technology will serve the Institute and customers with similar needs

ii. Speed and efficiency; usually, long production process is cut short and saves time.
iii. Producing at the cheapest price possible will attract more customers
iv. Deliver goods of the right quality and quantity at the right time, and at the right price.
v. It motivates and boost the morale of staff etc

PROCURMENT OF MODERN PRINTING EQURPMENTS

- We need a modern machine for printing of synthetic vaccine labels compare to other non-tire able water proof labels.

NEED FOR TECHNICAL STAFF:

We need five (5) technical staff in the Division

Prepress: - 1 technical staff (Graphic) This deals with electronic pagination, impositioning and plate making

Press: - 3 technical staff (Printing Machine) This is where the printing of Vaccine Labels Scientific Journals, Sales Invoices, Receipts, Letter Heads, File Jackets, Examination answer booklets, Posters and other numerous printing are done.

Post Press: - 1 technical staff. This section handles with responsibility of finishing all the printing jobs.

- Trimming
- Cutting
- Folding
- Stitching/Gluing
- Collation
- Dispatch

26. QUALITY CONTROL DIVISION

A. Functions/Mandate

The Quality Control Division is saddled with the responsibility for standardization of services and products of the Institute, to ensure conformity to customer and regulatory requirements. As well as ensuring customer satisfaction throughheffective implementation, and continuous improvement ofQuality Management System (QMS) for the production of veterinary vaccines, biological and general laboratory procedures in the Institute. As part of its routine, the Division conducts quality control tests on all batches of various veterinary vaccines produced by the Institute to ascertain suitability for use in the field and issues certificates of compliance for each batch of vaccines produced. Periodic assessment and auditing of institute laboratories are conducted to ensure current Good Manufacturing Practices (cGMP) and Good Laboratory Practices (GLP).

B. Specific Activities

a. Vaccines submitted for internal quality control

i. **Bacterial Vaccines:**Forty (40) batches of various bacterial vaccines were received from Bacterial Vaccines Production Division during the period under review, for the

purpose of product assessment for quality and certification. Details of the bacterial vaccines submitted to the Division in 2024 are given below (see Table 1).

Table 1: Bacterial vaccines submitted to the Quality Control Laboratory in 2024

S/N	**Vaccine Type**	**Number of Batches**
1.	Anthrax Spore Vaccine	17
2.	Black Quarter Vaccine	2
4.	Contagious Bovine Pleuropneumonia Vac.	4
5.	Fowl Typhoid Vaccine	7
6.	Fowl Cholera Vaccine	1
7.	Hemorrhagic Septicaemia Vaccine	7
8.	Hantavac	2
Total		**40**

ii. **Viral Vaccines:**Similarly, 35 batches of different viral vaccines were received from the Viral Vaccines Production Division during the year under review for quality check and certification. Details of the viral vaccines submitted to the Division in 2024 are given in Table 2.

Table 2: Viral vaccines submitted to the Quality Control Laboratory in 2022

S/N	**Vaccine Type**	**Number of Batches**
1.	Anti-Rabies Vaccine	3
3.	Fowl Pox Vaccine	1
4.	Infectious Bursal Disease Vaccine	7
5.	Newcastle Disease Vaccine I2	8
6.	Newcastle Disease Vaccine Komarov	3
7.	Newcastle Disease Vaccine Lasota	8
9.	Peste Des Petits Ruminant Vaccine	5
Total		**35**

b. Vaccines sent for external quality control: As part of quality assurance measure, representative batches of various vaccines are periodically assessed externally in addition to the routine internal quality control. In the year 2024, batches of different vaccines including both bacterial and viral vaccines were submitted to the African Union-Pan African Veterinary Vaccine Centre (AU-PANVAC)for external quality control during the period under review (Table 3).

Table 3: List of vaccines submitted to the AU-PANVACfor external quality control in 2022

S/N	**Vaccine Type**	**Number of**

		Batches
1.	Anthrax Spore Vaccine	2
2.	Foot and Mouth Disease Vaccine	2
3.	Peste Des Petits Ruminant Vaccine	3
4.	Hemorrhagic Septicaemia Vaccine	1
5.	Newcastle Disease Vaccine I_2	2
6.	Newcastle Disease Vaccine Lasota	2
Total		**12**

C. Achievements

a. Vaccines Testing and Certification:

i. Vaccine quality checks have been completed on all 40batches of Bacterial vaccines out of 40 batches submitted during the period of this report and certificates have been issued to the producers.

ii. Vaccine quality checks have been completed on 27 batches of viral vaccines out of 35batches submitted during the period of this report and certificates have been issued to the producers. Work is currently on-going on the remaining batches.

b. Conferences/Seminars Attended

i. Dr. Benson N. M. attended the 7thAnnual Conference /Annual General Meeting (AGM) of Nigerian Biosafety Association, with the Theme: Strategic Harmonization of National and Regional Biosecurity Policies and Action for One Health Sustainability. December 10thto 15th 2024, Abuja, FCT.

ii. Dr Laleye A. T. and Dr. Benson N. M. attended the 60th Annual Conference/AGM of Nigerian Veterinary Medical Association (NVMA) from 21st to 25th October 2024, Jos, Plateau state.

c. Staff Training:

i. Mrs Amao V. T. attended a PPR and CBPP production and quality control training at the African Union-Pan African Veterinary Vaccine Centre (AU-PANVAC), Ethiopia from 15th to 18th July 2024.

ii. All Staff of the Division participated in the in-house vaccine production and quality control training from 25th to 27th July 2024 at NVRI Vom.

iii. Dr Laleye A. T., Dr. Benson N. M., Dr Ankeli P. I., Mrs. Amao V. T., Mr. Akachi U. K., and Mr. James K. G. were part of Defense Threat Reduction Agency(DTRA) – Biological Threat Reduction Programme, January to December, 2024

iv. Dr. Laleye A. T. participated in a 5-day Regional Training and Certification Workshop organized by the West African Health Organization in Abidjan, Côte d'Ivoire, on IFBA Biological Waste Management, November 2024

d. Staff Promotions:

i. Dr. LaleyeA. T. was promoted from the rank of Chief Veterinary Research Officer (CVRO) to Assistant Director (AD) with effect from 1st January, 2024.

ii. Mrs Amao V. T. was promoted from the rank of Assistant Chief Medical Laboratory Scientist (ACMLS) to Chief Medical Laboratory Scientist (CMLS) with effect from 1st January, 2024.

iii. Mr James K. G. was promoted from the rank of Research Officer I (ROI) to Senior Research Officer (SRO) with effect from 1st January, 2024.

D. Challenges

a. Inadequate capacity for molecular and tissue culture technique

b. The laboratory is deficient in adequately equipped facility required for potency and safety tests.

c. The laboratory has some faulty equipment (such as Biosafety cabinets, autoclaves) without ready access to technical services for repairs, maintenance and/or calibration.

E. Projections:

a. Equipping the Molecular Biology section of the Division.

b. Provision of essential equipment, media and reagents required by the Division.

c. Equipping the experimental animal house

27. RABIES DIAGNOSIS AND RESEARCH DIVISION

FUNCTIONS/MANDATES OF RABIES LABORATORY:

Rabies Laboratory is charged with the following specific mandates:

i. Conduct research on rabies and rabies-related Lyssaviruses that cause neurological disorders that are clinically indistinguishable.

ii. Confirmatory laboratory diagnosis of animal rabies infections caused by *Lyssaviruses,* using *in vitro* and *in vivo* methods.

iii. Development and production of rabies antigens and anti-sera for research and diagnosis.

iv. Assessment of antigenicity of rabies vaccine and vaccine viruses by *in vitro* and *in vivo* methods.

v. Clinical trials and field evaluation of NVRI rabies vaccines and sero-monitoring of dogs vaccinated with the vaccine.

vi. Participation in national surveillance of rabies and rabies-related viruses in domestic animals and wildlife.

vii. Participation inrabies proficiency test administered by the Nancy Laboratory for rabies and Wildlife, France, and the Istituto Zooprofilattico Sperimentale Delle Venezie (Izsve), FAO Reference Centre (RC), Italy.

viii. Training and capacity building of personnel.

1. NOTABLE ACTIVITIES:

i) Routine Laboratory Diagnosis and Research Samples.

Overall, 871 samples were received, one sample was not suitable for test, 870 samples were tested during the period under review. Of this number, 278 (31.9%) were rabies positive. A total of 302 specimens were submitted for routine diagnosis. Of this number, one (1) was not suitable for testing while 217 (72.1%) of the tested samples (n=301) were positive for rabies. Overall, 337 human-dog bites were recorded (Table 1). Eight (8) animal species were sampled, including dog, cat, goat, cattle, sheep, pig, horse, and bat. Human samples (saliva and cerebrospinal fluid) were received and routinely tested for rabies. Of the 301 routine samples, 259(86.0 %) were from domestic dogs, 24(8.0%) from cat, from Sheep 1(0.3%), from goat 2(0.7%) from cow 2(0.7%), from horse 2(0.7%), from bat 9(3.0%) and human 3(1.0%). A total of 217 (72.1%) of all samples submitted were confirmed positive, while the remaining 84 (27.9%) were negative. Of the 217 positive samples, 198 (91.2%) were from domestic dogs and 19 (8.8%) from other animals. Also, of the 84 negative samples, 61 (72.6%) were from domestic dogs while the rest were from cats, cattle, goats, and bats. In addition, 569 research samples submitted were tested for rabies, of which 61(10.7%) were positive.

Table 1: Overall Routine samples submission and results by state

Rabies Diagnosis based on species		
2024	**No. Submitted**	**No. Positive (%)**
Canine	259	198 (76.4)
Ovine	1	1 (100.0)
Feline	24	13 (54.2)
Human	3	3 (100.0)
Caprine	2	1 (50.0)
Bat	9	0 (0.0)
Equine	2	0 (0.0)
Bovine	2	1 (50.0)
TOTAL	**302**	**217 (71.8)**

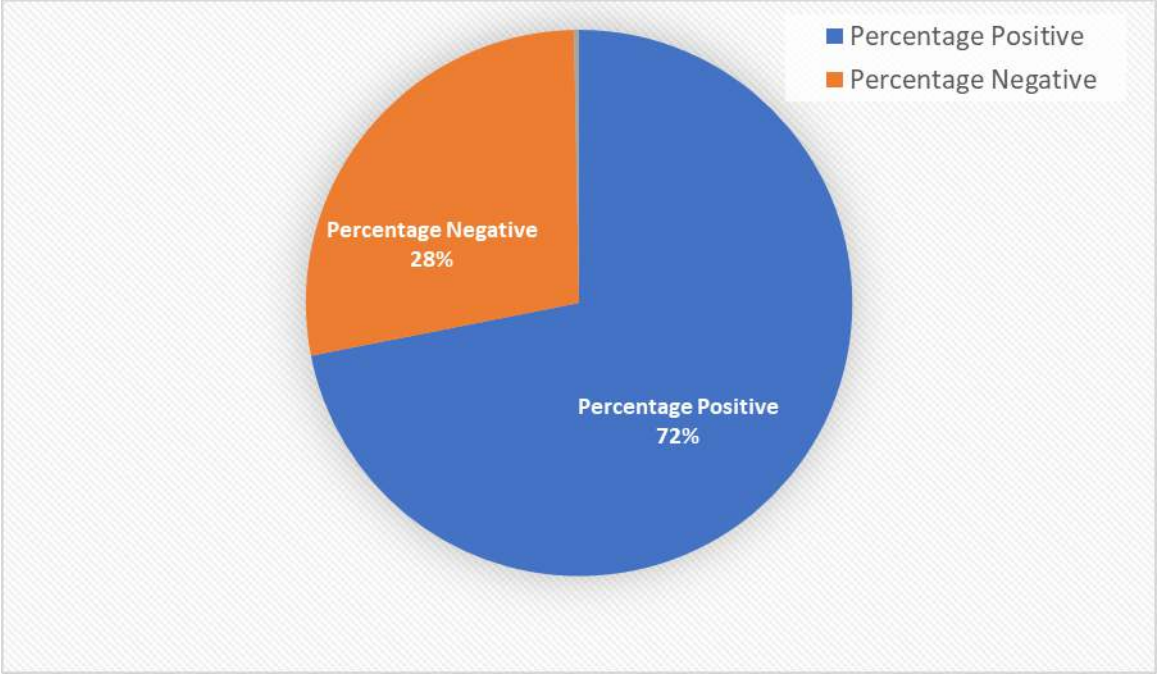


Figure 1: Percentage distribution of samples tested in rabies laboratory, NVRI in 2024 by rabies status.

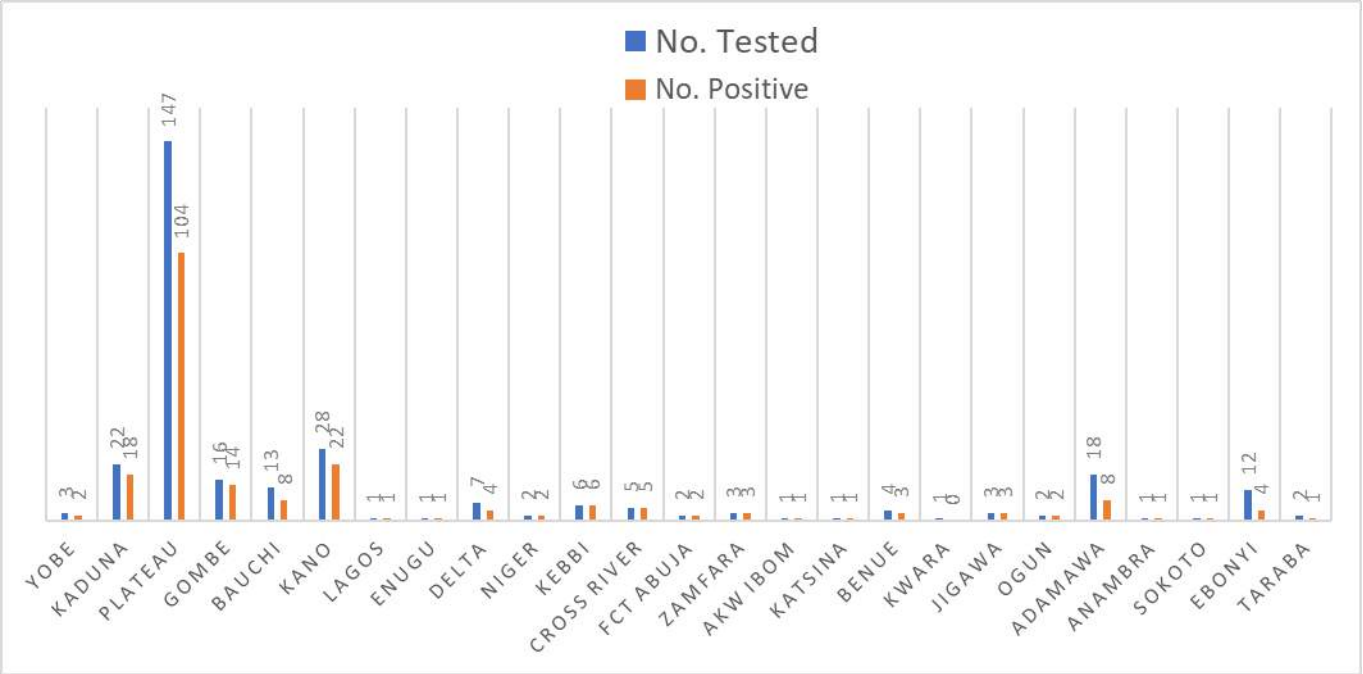


Figure 2: Distribution of samples submitted by various states to NVRI in 2024 and test results.

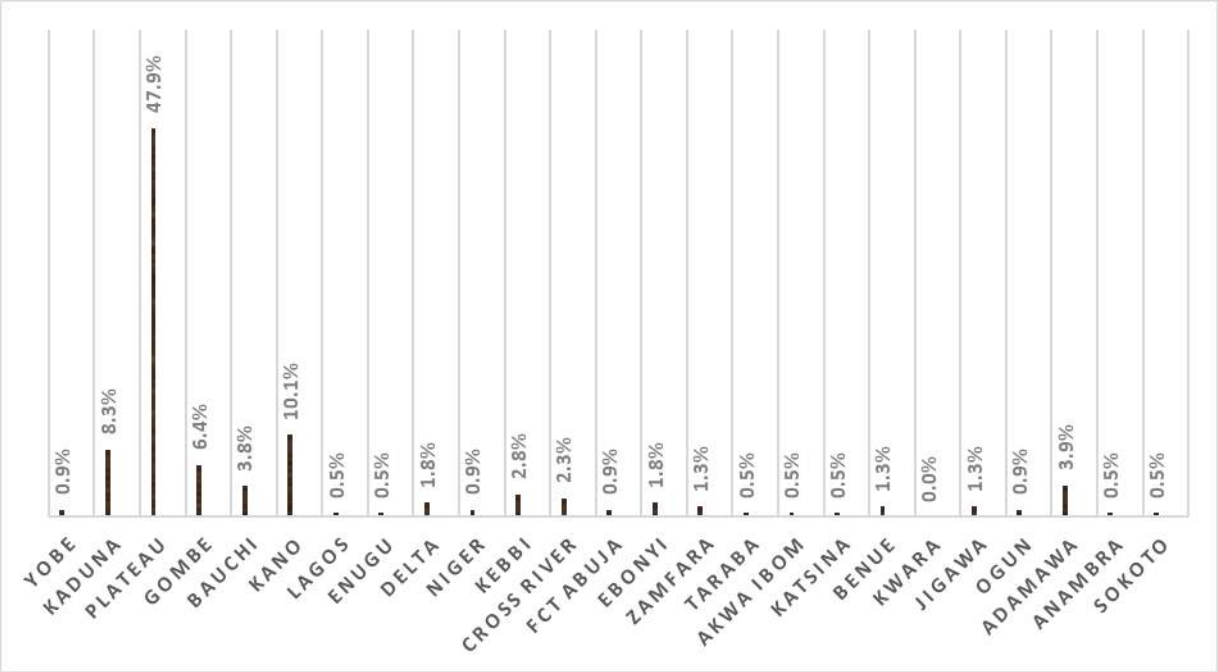


Figure 3: Percentage Distribution of positive samples test by NVRI from various states in 2024.

Table 1 shows the distribution of samples collected from various animal species and received for routine confirmatory diagnosis of rabies with results. Figure 1 above, depicts the breakdown of total samples submitted and tested and the number positive, while F**igure 2** and **Figure 3** demonstrates distribution of samples per state in absolute values and the percentage distribution the routine samples which tested positive for rabies by state.

A total of 394 mice were used for inoculation of which, 71 samples submitted for either routine diagnosis or research. Twenty-one of this number (n=71) had a history of human bite which turned out to be negative for rabies by DFAT.

ii) Collaboration/Bench Work Activities:

The laboratory hosted seven (7) project students who did their research work in the facility. These included one (1) Post Graduate student (masters), from the University of Ilorin, one undergraduate from the Federal University Wukari, and five (5) HND students from the FCAPT, Vom. They carried out diagnosis of rabies virus antigen in 867dog brain samples and saliva samples. The samples were tested by fluorescent antibody test (DFAT), using rabies laboratory bench space. Of this number, 50 samples underwent virus isolation in mice.

iii) Participation in the World Rabies Day, 2024:

The Head of the Division, by invitation, participated in a **Stakeholders' Meeting** to mark the 2024 **World Rabies Day** at the Jos University Teaching Hospital (VTH), Pollo on September

28. The program was to organized by the Association of Veterinary Medical Students and the VTH and jointly sponsored by the tripartite Federal Ministries (Federal Ministries of Agriculture and Food Security, Health and Social Welfare and that of Environment to create awareness on rabies among.

2. ACHIEVEMENTS:

I) Number of samples analyzed:

The laboratory analyzed a **total of 870 samples** from dog, Cat, Goat, Cow, sheep, horse, pig, and bats (301 for routine and 569 for students' research). The specimens came from only 25 states of Nigeria.

II) Academic Degree:

Dr Emmanuel Sunday Hambolu defended his PhD (Public Health and Preventive Medicine) in the Department of Veterinary Public Health and Preventive Medicine, Ahmadu Bello University, Zaria.

III) Human Antirabies Pre-Exposure Prophylaxis:

Drawn from Rabies Diagnosis and Research Division, Veterinary Pathology Division, and Biotechnology Division, 12 personnel of the Institute, who were involved in routine post-mortem and diagnosis of rabies were routinely vaccinated against rabies prophylactically.

3. MAJOR CHALLENGES:

- **A.** Non-availability of furniture, such as stools in the recently renovated rabies laboratory building, as well as office Chairs and tables in the same building.
- **B.** Non-availability of Ceramic sink, water pipes, and waste pipes in the mouse room.
- **C.** The wash-up room requires to be tilled for easy cleaning.
- **D.** Non-availability of washing and drying machines for laundering laboratory coats.
- **E.** Non-availability of window blinds (required in 13 rooms).
- **F.** Non-availability of six (6) energy saver electric lamps and holders (required in the passage in the middle of the building).

- **G. Non-availability of the following equipment:**
  i. Ultra-Low freezer (-80^{o}C).
  ii. Refrigerated centrifuge (+4^{o}C).

- **H. Short supply of the following equipment:**
  i. Biosafety cabinet class II.
  ii. Carbon dioxide (CO_2).
  iii. Incubator (+37^{o}C).
  iv. Deep freezers (-20^{o}C).

I. Non-availability of panel of monoclonal antibody to Nigerian isolates of rabies virus.

J. Non-availability of Baby Hamster Kidney (BHK)or Murine neuroblastoma cell lines for virus propagation and isolation.

4. RESEARCH HIGHLIGHTS:

The serosurvey for rabies virus-neutralizing antibodies in dogs vaccinated against rabies commenced in 2021 and was completed in 2024. A total of 500 aliquots of the 1,566 serum samples collected from domestic dogs post-vaccination, were sent to the Animal and Plant Health Agency in the United Kingdom for analysis, and the result was released in 2024.

Summary of results of NVRI Dog Antirabies Vaccine: There were no statistically significant differences in the rabies-neutralizing antibody levels, between the breeds and gender of dogs vaccinated groups on any of the days measured as well as for age group on day 14, day 180, and day 360 post-vaccination. However, there was a statistically significant difference between age groups for the baseline samples.

5. Trainings, Conferences and workshops attended

i. **Ishaya Tekki, Dr Konzing Leviticus** and **Dr Emmanual Sunday Hambolu**: The Nigeria Veterinary Medical Association 60th National Conference (TINCITY, 2024) held from 21 to 25 October, 2024 at Crispan Suites and Event Centre, Dahwol, Opposite Air Force Base, off Jonah David Jang Express Way, Jos, Plateau State. Theme: A Centaury of Veterinary service Delivery in Nigeria: Opportunities for Artificial Intelligence in National Food Security.

ii. **Zhakom Ponfa:** Theme of workshop: "The Medical Laboratory Financing: Panacea to Curb Medical Tourism in Nigeria held at Crest Hotel, Plateau State from 27th to 31[1st] May, 2024.

iii. **Zhakom Ponfa:** Hands-on Bioinformatics Training for Infectious Diseases Research from 16th to 18th May, 2024 and Rabies Accessible Genomic Epidemilogy (RAGE) Follow-up Hands on Workshop from 27th to 31st May, 2024

iv. **Dr Konzing Leviticus**: participated in a Workshop at Keffi, Nasarawa State on the "The Development of Nigeria Rapid Response Toolkit for the Control of Rabies"

v. I**shaya Tekki, Dr Konzing Leviticus, Zhakom Ponfa, Haruna Rabo Sumana, Alex Joseph Davou**: DTRA Training on:

- Technical Writing Basics
- Principles of SOP Development
- Document Control and Configuration Management

- Synchronous QMS BRM Training – NVRI
- Synchronous BS&S Training - NVRI
- Orientation to Biorisk Management
- Synchronous Document ControlTraining - NVRI

28. REGIONAL LAB. FOR ANIMAL INFLUENZA AND OTHER TRANSBOUNDARY ANIMAL DISEASES (TAD)

FUNCTION/MANDATE

The Laboratory is saddled with the following responsibilities: -

1. Diagnosis and research into animal diseases notably avian influenza, equine influenza, swine influenza virus, Newcastle disease, infectious bursal disease virus, infectious bronchitis, monkey pox, African horse sickness, rabbit hemorrhagic disease virus (RHDV), coronaviruses and other transboundary animal diseases of viral origin
2. Preparation of viral transport media, antisera and antigens,
3. Field assessment of NVRI avian viral vaccines through sero-monitoring of vaccinated flocks
4. Participating in national surveillance of avian influenza and RHDV
5. Participating in national and international networks and surveillance for Emerging infectious/zoonotic/transboundary diseases
6. Rendering support to other West African Laboratories, as the Regional Reference Laboratory
7. Reference lab for West Africa Health Organization (WAHO)(Network of National Zoonoses Lab)

A. Laboratory Activities from January to December 2024

Summary of tissue samples received for diagnosis, research and grant supported projects in 2024

S/N	AIV	NDV	IBDV	Mpox	AHS	CCHFV	BIV	MERSC	SEROMONITORING		
									NDV	IBD	FPOX
	150	512	20	400	5	2680	1466	930	496	78	79
Total samples analyzed = 6,816											

AIV=Avian influenza virus, NDV=Newcastle disease virus, IBDV=Infectious bursae disease virus,Mpox=Monkey pox, AHS= African horse sickness, CCHFV=Crimean-Congo Hemorrhagic Fever Virus, MERSC=Middle East Respiratory Syndrome Coronaviruses, Fpox= Fowl pox

As projected in the table above thedivision conducted field assessments of NDV vaccines through seromonitoring of vaccinated flocks. A total of 496 sera samples were screened for

seroconversion. In addition, 78 samples were screened for IBD, and 79 sera samples were screened for fowl pox. The results were communicated to the farmers for necessary action, either to administer a booster dose or treat for ongoing infection on the farm.

B. Scholar's Research and Surveillance

In the period under review, the division supported aPhD studentfrom the University of Maiduguri in the analysis of his samples according to his research topic on molecular characterization of Newcastle disease virus in Northern Nigeria. A total of 362 samples were analyzed.

C. Other Notable Activities

1. The division continued the second phase of the collaboration with the One Health team from NVRI, CDC Atlanta/Nigeria and NCDC, FELTP on ecological surveillance of monkeypox disease in Animals
2. NACOH/NEOH grant implementation on coronaviruses and other infectious zoonotic diseases funded by GHPP, Germany
3. The division hosted the 'Hands-on Bioinformatics Training for Infectious Diseases Research in May 2024. This was supported within the framework of the NACOH II joint project of NVRI and FLI funded by the Global Health Protection Programmeof the German Ministry of Health

D. **Achievements**

1. Offering diagnostic support for animal influenza and other avian diseases.
2. Confirmation of highly pathogenic avian influenza virus (H5N1) outbreaks in farms within the country
3. Staff of the Laboratory published research articles in peer-reviewed journals and also made conference presentations within and outside the Country
4. The division received and participated in the 2024 molecular and conventional proficiency testing panel for avian influenza and Newcastle disease conducted by the WAOH and FAO International Reference Laboratory for Animal Influenza, Swine Influenza and Newcastle Disease, Animal and Plant Health Agency (APHA), United Kingdom. The PT results returned with the division scoring 100% in molecular and serological identification of avian influenza subtypes H5N1, H5N8, and H7 from the panel.
5. In the period under review 2 members of staff completed their PhD degree, while 2 others are still running
6. In 2024, the division published 20 research articles in peer reviewed journals and attended 26 scientific workshops both within the country and outside Nigeria

E. Challenges

1. There are no molecular biology reagents as well as consumables (molecular grade ethanol, cotton wool, etc.) in the division. The Lab relies on support from project resources toanalyze routine diagnostic samples

2. There is a need for the repair of faulty freezers for the storage of tissue samples and sera
3. Experimental birds for research need replacement, especially for the production of red blood cells.

F. Future Plan

1. Active surveillance for highly pathogenic avian influenza virus in live bird markets and wetland areas continues. This ongoing collection, collation, and analysis of data from the live bird market will help prevent future outbreaks, as suspected cases will be properly handled.
2. Researchintoavian influenza vaccine
3. Strengthening national and international networks and collaborations
4. Expansion of other R & D products and services including antivirals, antigens and antisera.

G. Research highlights

1. Molecular Epidemiology of CCHFV in Ticks, Camels, and Humans in Kano and Borno State, Nigeria. A total of 451 camel samples, 260 bovine samples, and 1,969 tick samples were screened for CCHF. This ongoing research is supported by the NEOH project/grant
2. Application of minion sequencing and genomic characterization of bat influenza viruses in Nigeria. A total of 236 gut samples, 260 sera samples, and 970 swab samples were collected from bats from Akure, Idanre, Calabar, Jos zoo and Miango. This ongoing research is also supported by the NEOH project/grant
3. Middle East Respiratory Syndrome Coronavirus Survey in Dromedary Camels, (Camelus dromedaries) and Domestic Mammals, in two Northern States in Nigeria Using One-Health Approach. A total of 930 tissue, swab and sera samples were screened for MERS Coronavirus
4. Epidemiological and Clinical Investigation of Monkey pox (Mpox) in Nigeria. A total of 2395 tissue, sera and environmental samples were collected from Adamawa, Plateau, Ogun, Rivers and Lagos states. These samples were screened for Mpox. The research is jointly funded by FAO, US-CDC, and UKPHRST

H. List of Workshop and Seminars attended by members of staff, Regional Lab for AI in 2024

1	Title	Location	Date	Sponsor
1	Technical and steering committee meeting of PROALBAB -	Lome, Togo	15-17, January 2024	ECOWAS - West Africa Health Organization
2	Mpox Threat Reduction Network	Fraser Suits , Abuja	17-18, January 2024	US Diplomatic Mission in Nigeria /US- CDC
3	OFFLU Global Technical Meeting	Rome	2-4, January 2024	F. A.O
4	9th International Influenza meeting	University of Munster Castle, Munster Germany	05-07, September 2024	Friedrich-Loefler-Institut, Germany
5	European Wildlife Disease Association	Strasund, Germany	9-13th September, 2024	Freidrich-Loefler-Institut, Germany
6	60th NVMA National Congress & AGM	CrispanHotel , Jos	17-21 October 2024	Self
7	10th Annual Meeting of ECOWAS Regional Animal Health Network	Abuja Continental Hotel, Abuja	11-15 November	ECOWAS, German Cooperation Bank (KFW) GFA consulting group
8	Training workshop on mpox	NVRI	21-27 April 2024	UK –Mpox
9	Mpox Research collaboration workshop	Transcorp Hilton otel Abuja	2-4 May, 2024	UKPHA,LSTMH , University of Oxford
10	African Virology Conference,	Exclusive Serene Hotel, Abuja	11-15, November 2024	WHO mpox

1	Title	Location	Date	Sponsor
11	Enhancing Global efforts in Animal and Zoonotic Diseases Surveillance	NVRI Vom	July 30th-31st, 2024	Global Partnership for Animal and Zoonotic Diseases (GPAZDS)
12	Mpox RT-qPCR workshop	Abuja, Nigeria	June 11-13th 2024	Liverpool School of Tropical Medicine
13	Hands-on Bioinformatics Training for infectious diseases Research	NVRI, VomPlateau, Nigeria	May 16-18th 2024	Nigeria Engaging One Health (NEOH)
14	Public health risk of avian influenza A(H5N1) detected recently in dairy cattle	Online	May 16th 2024	WHO
15	Orientation to Biorisk Management	Online	April 15th 2024	DTRA
16	Synchronous document control training	Online	April 4th 2024	DTRA
17	Document Control and documentation management	Online	February 12th 2024	DTRA
18	Principles of SOP development	Online	February 12th 2024	DTRA
19	Technical writing basics	Online	February 12th 2024	DTRA
20	Specialized Biorisk Management Workshop	Lagos, Nigeria	February 25th -29th 2024	Sandia
21	Rabies Accessible Genomic Epidemiology	Abuja, Nigeria	February 12th -16th 2024	University of Glasgow

	workshop			
22	Hands-on Bioinformatics Training for infectious diseases Research	Plateau, Nigeria	May 16-18th 2024	Nigeria Engaging One Health (NEOH)
23	Nigerian National Genomics Surveillance Strategy development meeting	Abuja, Nigeria	July 1-5, 2014	NCDC
24	Humboldt Kolleg/Research Hub Network Meeting	Yaounde, Cameron	November 11-14, 2024	Alexander von Humboldt Foundation
25	Mpox qPCR Workshop	@NCDC, Abuja	11-13th June, 2024	UK PHRST
26	Regional training workshop on Mpox diagnosis	@Institut Pateur, Dakar, Senegal	26-30th August, 2024	WAHO
27	Enhancing global efforts in animal and zoonotic diseases surveillance	@NVRI, Vom	30th-31st July, 2024	USDA

29. STORES DIVISION

INTRODUCTION

The Store division as always is leaving up to her mandate of ensuring an uninterrupted flow of working materials to the production and services departments of the Institute thereby contributing to the attainment of the Institute's objectives**.**

The Central Stores is made up of the following classifications:

- Expendable
- Non- Expendable
- Consumables
- Glass-wares &Drugs

- Chemicals and Reagents.
- Vaccine Dispatch
- Dagwom Farm
- Workshop/Maintenance
- LID
- Furniture
- Ledger, Receiving
- Store and Scrap Stores units

During the year under review, the unit carried out the following tasks:

- The main stores maintained, keeps and receives all incoming expendables, Non-expendables, Consumables, Glass-wares, Drugs Chemicals and Reagents supplies of the Institute and releases same for use by all the producing research and services units, divisions and departments.

- The main stores ensure the proper documentation of all materials records and their physical correctness.

- The unit undertook the continuous reconciliation of the records of all stock able items in Shelves, Bins, Fridges, Cupboards and Bulk Stores, warehouse, containers and cold room.

- It ensures that all Expendables, Non-expendables, Consumables, Glass-wares, Drugs Chemicals and Reagents released are backed up by approved stores transferred vouchers (STR)

- It ensures posting of receipts, issues and costing of materials using FIFO and Materials valuation.

The Main Stores has a stock in hand worth **₦505,237,300.76** as at December 2024.

- Veterinary stores(EE)	-	₦175,342,465.58
- Stationery(I)	-	₦60,594,775.64
- Laboratory equipment store(GG)	-	₦144,069,334.28
- other stock(II)	-	₦35,354,875.87
- Industrial & chemical store((C)	-	₦5,035,750.00
- Animal feed stores(DD)	-	₦109,800.00
- Glassware/Apparatus(FF)	-	₦21,999,340.39
- Electrical materials(U)	-	₦21,519,357.00
- Farm stock(G)	-	₦39,550,800.00
- Plant &equipment(BB)	-	₦994,302.00
TOTAL		**₦505,237,300.76**

VACCINE DESPATCH SECTION

	Viral Doses	**Bacterial Doses**	**BALANCE**
Opening Balance	1,269,305	1,866,200	3,135,505
Receipt	46,964,661	17,255,960	64,220,621
Total Available	48,233,966	19,122,160	67,356,126
Issue	35,605,638	16,668,780	52,274,418
Confirmed Balance	12,628,328	2,453,380	15,081,708

RECEIVING SECTION

S/N	**DESCRIPTION**	**1ST QUARTER (₦)**	**2ND QUARTER (₦)**	**3RD QUARTER (₦)**	**4TH QUARTER (₦)**	**TOTAL (₦)**
1.	**Stationary**	1,759640.00	2,608,600.00	6,082,668.00	9,100,910.00	**10,551,818.00**
2.	**Veterinary Store**	61,671,309.23	25,202,000.00	31,494,348.29	--	**118,367,657.52**
3.	**Fuel Lubricant**	348,500	2,469,872.00	3,847,940.00	5,184,500.00	**11,850,872.00**
4.	**Feeds**	29,310,302.00	48,518,669.00	30,115,125.00	4,581,880.00	**112,525,976.00**
5.	**Plant & Equipment**	3,627,000.00	9,121,695.00	---	---	**12,748,695.00**
6..	**Sport Kits**	----	---	---	350,000.00	**350,000.00**
7..	**Expendable/ Equipment**	12,373,750.00	4,010,000.00	1,351,000.00	1,958,000.00	**19,692,750.00**
8.	**Electrical Materials**	----	190,000.00	673,500.00	828,200.00	**1,691,700.00**
9.	**Non-Expendable**	----	-----	50,264,610.00	16,249,000.00	**66,513,610.00**
10.	**Consumable**	46,740,219.33	28,492,744.00	4,723,960.00	6,583,591.00	**86,540,514.33**
11.	**Glassware/Apparatus Store**	19,175,000.00	128,479,811.05	----	28,081,623.81	**175,736,434.86**
12.	**Plumbing Materials**	1,979,500.00	486,500.00	---	---	**2,466,000.00**
13	**Building Materials**	------	137,000.00	2,050,000.00	40,200.00	**2,227,200.00**
14	**Diesel**	92,807,500.00	139,750,000.00	86,000,000.00	161,250,000.00	**479,807,500.00**
15.	**Welding materials**	4,995,400.00	----	----	---	**4,995,400.00**
16.	**Office Equipmt**	-----	16,722,881.81	---	---	**16,722,881.81**
	Total	**274,788,120.56**	**406,189,772.86**	**216,603,151.29**	**234,207,904.81**	**1,131,789,009.52**

WORKSHOP/MAINTENANCE SECTION (DIESEL)

Jan – Dec.,	Qty	Unit of issue	Rate₦	Value₦
Bal B/F	**4,000**	**Litre**	**1,660.25**	**666,500.00**
Supplies **Supplies**	**25,000** **218,100**	**Litre** **Litre**	**1,660.25** **2,150.00**	**41,506,250.00** **468,915,000.00**
Surplus	**Nil**	**Nil**		
Total Available	**243,100**	**Litre**		
Total Issued	**25,000** **218,100**	**Litre** **Litre**	**1,660.25** **2,150.00**	**41,506,250.00** **468,915,000.00**
Closing Bal.	**310**	**Litre**	**2,150.00**	**666,500.00**
	Total		**N**	**N**

The total quantity of diesel dispensed from January to December 2024 was

242,790 Litres and the total cost was **₦515,103,250.00**only.

LEDGER/DOCUMENTATION SECTION

The Ledger/Documentation comprises of the following sub-units; Ledger,

Plants, Security Document and Furniture.

During the year under review, the unit carried out the following tasks:

- The Ledger received all incoming store vouchers and store issue vouchers for non-expendables, consumables, Glass-wares; Drugs, Chemicals and Reagents, Plants, Furniture and its Documentation.
- The Ledger ensures the proper documentations such as posting and filing of these documents for future references.
- It ensures posting of receipts, issues and costing of materials.
- The Ledger keeps receipts and other security documents for the Institute; these are issued to Accounts and other departments, these receipts are issued base on approved applications or requirements.

ACHIEVEMNETS

During the year under review, the following constituted our achievements. These are:

- We fostered relationship among ourselves and with other departments of the Institute.
- We reconciled some Physical items with the Bin Cards and Ledgers.
- We grouped some items according to their classes.
- weekly, monthly and quarterly records are reliable

- fixing of power house door at workshop
- there was an in-house training for staff on how to handle the software installed in the central stores

CONSTRAINTS

- Most orders delivered are not processed in the stores before they are paid for and as a result materials inflows are not captured in our stores records.
- The inability to renovate the store house has negatively affected ventilation and storage space.
- The store house is choked up with outdated or obsolete materials/items i.e. expendables/ Non-expendables, consumables and Glass-wares.
- The store house is also choked up with slow moving items and some expired drugs, chemicals and reagents.
- Lack of proper fencing of the stock yard for junk/returned materials.
- Only two((2) systems are linked while we have more than five units
- The vaccine cold room is not functioning hence needs total overhaul.
- Lack of protective clothing for all store staff e.g. overall/boots
- Lack of bulk purchase has given room to individual/departmental purchase and has hampered proper documentation and not accounted for exact amount spent on stocks.
- Lack of cold van to convey vaccines from production to store and from store to sales unit/consultancy
- The Store Division at the moment is under staff

WAY FORWARD

10. The entire Stores require an intensive In-House Training in the use of software in inventory control
11. The provision of Stores handling equipment such as fork lift to enhance our performance.
12. The Stores houses are in a dilapidated condition and calls for urgent rehabilitation of the Store houses and Offices for job performance.
13. A total overhaul of the Cold Room Stores is urgently recommended.
14. The Stock Yard should be well fenced, cement and secured.
15. The staff assigned to cover Dagwon Farm, poultry and LID need means of movement to ease his work
16. The Store Division need at least four(4) Senior and Junior staff each for the Division to perform optimally
17. Hazardous condition of the store house should be looked at.
18. A cold van should be made available for vaccine movement.

30. VETERINARY EXTENSION SERVICES

FUNCTIONS AND MANDATES

The Veterinary Extension Services which are saddle with the responsibilities to generate, provide, disseminate demand driven, coordinated and decentralization of knowledge and technology-based livestock extension services, for sustainably, increased productivity, profit optimization and well-being of stakeholders through the decrease of animal diseases impact and the best husbandry practices to livestock farmers; in order to ensure food safety from the animal source(s). Propagation of proven veterinary health technologies to livestock/poultry farmers within the catchment areas in particular and the nation at large to ensure improvement in animal production, food security and the living standard of the animal holders.

ACTIVITIES

- Carried out Vaccination in the Institute's Adopted Village 13thMarch, 2024Bogoro. Bauchi State
- Participated in the Monitoring and Evaluation of Community Animal Health Workers (Cahws) Under the Sponsorship of Bill and Melinda Gates Foundation Covering 3 out of the Seven States (Adamawa, Bauchi, Gombe, Kano, Yobe, Jigawa and Borno) Of Nigeria including
  -Dutse, Jigawa State on the 3rd – 6th July, 2024.
  -Damaturu, Yobe Stateon the 15th–18thJune, 2024.
  -Maiduguri, Borno Stateon the 10th – 14th June, 2024.
- Participated in the review and adoption of Extension Manual to be used by Plateau State Extension agents sponsored by LPRES Plateau State 8-9th August 2024
- Participated in Capacity Strengthening of 33 State-Level Extension Agents In Gomber State Sponsored By LPRES Gombe State 21st September 2024
- Participated in the Training of Trainers (TOT) Workshop to strengthen the capacity of trainers in epidemiological procedures for the prevention and control of zoonotic, transboundary, emerging and re-emerging diseases organized byThe Food and Agriculture Organization- Emergency Centre for Transboundary Diseases (FAO-ECTAD) in collaboration with the Department of Veterinary and Pest Control Services 25th- 31st August, 2024 Victoria Island, Lagos, State
- Participated in Effective Disease Surveillance Training For Plateau State Extension agents organised by LPRES Plateau State Jos 3rd- 4th October 2024
- Participated in VCN Revisions And Examination Of Trained CAHWS (NVRI Model For Downstream Delivery (The WP3)) organised by BMGF (18th- 24th August 2024
- Participated in the LIDISKI Project Webinar "The Online Training Program On Biostatistics To Analyse Epidemiology Survey Data – Application To Peste Des Petits Ruminants And Newcastle Disease 4th To 7^{h} November 2024.
- Participated in the 2024 Annual National Agricultural Extension Review And Planning Meeting (NAERPM)to review the achievements in Agricultural Research and Extension

activities carried out in 2024 and plan for the year 2025NAERLS, Ahmadu Bello University, Zaria 1ST-3rdDecember, 2024

ACHIEVEMENTS

- ❖ Successful vaccination of a total of 200 sheep and goats and 450 local birds against peste des petits ruminants (PPR) and Newcastle Disease respectively in GwaskaBokka, In Bogoro Local Government Area Of Bauchi State
- ❖ Successfully rounding up the training of 100 CAHWs from 7 gates states
- ❖ Successful Closing up LIDISKI Project

CHALLENGES

Low vaccination coverage and other extension activities under the year in view due to paucity of funds and uncooperative nature of livestock farmers .

31. VETERINARY PATHOLOGY DIVISION

FUNCTIONS AND MANDATES

The Veterinary Pathology Division is one of the four (4) division carved out of the former Central Diagnostic Division in the year 2020. The Veterinary Pathology Division has the following section: - Reception, Necropsy, Histopathology, Laundry and Incineration.

The Veterinary Pathology Division serves as the major driver in fulfilling the institute's mandate on animal disease diagnosis and also a player in the Institutes role as a National and Regional Laboratory for Avian Influenza and other trans-boundary animal diseases for West and Central Africa.

The functions of Veterinary Pathology Division includes:

1. Receive and document all cases / samples coming into N.V.R.I. Vom and give an identification /tracking number to each sample and dispatch of same to appropriate laboratory for action.

2. Conduct diagnosis and Surveillance of diseases (emerging and re-emerging) within the nation and sub region as the situation may demand.

3. Report all notify able diseases diagnosed immediately to the Director and CEO of N.V.R.I., Director Diagnostic Services NVRI, Public health and epidemiology division, NVRI and Chief Veterinary Officer of the nation.

4. Constitute a team for field outreach on any animal disease outbreak.

5. The division is also saddled with ambulatory services to Livestock and poultry farms and wild life parks.

6. Giving advice to livestock and poultry farmers based on cases /complaints received.

7. Training of manpower to cater for the division and other agencies.

The under-listed units help the division in achieving the functions above.

1. Reception Unit
2. Necropsy Unit
3. Histopathology
4. Laundry

Reception Unit:

- ✓ All samples/carcass for diagnosis or research in the Institute are received and documented at the reception unit in Veterinary Pathology Division where a tracking number is assigned and documented.
- ✓ Disseminate results to appropriate bodies/ units for action.

Necropsy Unit:

- ✓ Diagnoses of domestic, wild and laboratory animals via ante and post-mortem examination of animals/carcass using pathology, microscopy and immunohistochemical tools.
- ✓ Produce interim reports of diagnosed cases within 24 hours of examination and a final report as soon as possible upon receipt of ancillary laboratory results.
- ✓ Advice farmers/clients on possible treatment and control measures for diagnosed diseases.

Histopathology Unit:

- ✓ Produces histological slides for viewing to give a microscope view of the gross lesion observed during postmortem examination. The production of slides takes minimum of 6 days to produce to and diagnosis.

Incinerator Unit:

- ✓ This is the waste disposal unit that serves the necropsy unit, all laboratories in the Institute and Plateau state Ministry of Health/world health organization.

Laundry Unit:

- ✓ This unit washes all scrub suites and laboratory coats used for necropsy and other laboratories.

ACTIVITIES

1. **Reception Unit:**
   This unit has received a total of 934(Nine hundred and thirty fourcases between 1st January 2024 to December 2024 from different animal species and other sources. See table 1 attached. These were processed either through post mortem and different samples collected and sent to the laboratories or samples received from field or other laboratories outside the institute.

2. **Necropsy Unit:** has conducted necropsy on cases referred above and sent tissue samples to various laboratories for isolation, culture, characterization or PCR as the

case may be. And the laboratory results are compiled and a final diagnostic report issued to the client and other stake holders as demanded by the reporting channel.See table 2 attached.

3. **Histopathology unit:** this unit runs daily activities in terms of reagent preparation, tissue sample reception, documentation, fixation, processing, sectioning, mounting and the release of histopathology slides for the diagnosis and research. See table 3 attached.

4. **Incineration unit**: this unit has incinerated waste generated within the institute from different divisions and laboratories. The estimated total weight of the waste is **30,205kg**. See table 4 attached.

LIST OF TABLES

Table 1: NUMBER OF CASES RECEIVED FROM JANUARY TO DECEMBER, 2024

S/NO	ANIMAL SPP	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	TOTAL
1	Avian	6	22	25	19	11	19	11	11	8	2	5	9	148
2	Bovine	14	7	8	11	16	4	14	9	10	3	13	7	116
3	Canine	24	34	24	28	36	18	34	24	31	21	27	21	322
4	Caprine	11	1	5	3	4	5	5	6	5	2	2	4	53
5	Cassava flour	0	0	0	0	0	0	0	1	0	0	0	0	1
6	Laprine	1	2	6	3	4	16	18	14	5	1	7	4	81
7	Ovine	3	1	6	2	2	7	5	6	1	1	0	3	37

8	Plates	0	0	2	1	0	1	1	3	2	1	0	1	12
9	Porcine	0	0	2	3	3	1	4	2	2	3	1	1	22
10	Water	1	1	5	0	0	1	1	2	1	0	0	1	13
11	Pisces	0	4	3	1	0	0	8	2	2	0	0	0	20
12	Equine	0	1	1	1	1	0	1	0	2	1	4	0	12
13	Wildlife	0	0	0	1	0	0	0	1	1	0	0	0	3
14	Human	11	2	6	2	5	5	8	1	2	1	0	3	46
15	Feline	1	0	0	0	0	1	0	1	1	1	0	0	5
16	Feeds	0	3	1	0	1	1	1	1	1	0	0	0	9
17	Media	0	0	0	0	1	0	0	0	1	0	0	0	2
18	Vaccine	0	0	0	0	0	0	1	0	1	0	0	0	2
10	Soil	0	0	4	1	0	1	2	0	0	1	0	0	9
11	Flies	0	0	0	0	1	0	0	0	0	0	0	0	1
12	Ashes	0	0	1	0	0	0	0	0	0	0	0	0	1
13	Liquid	0	0	1	0	0	0	0	0	0	0	0	0	1
14	Ticks	0	0	1	0	0	0	0	0	0	0	0	0	1
15	Plant	0	1	1	0	0	0	0	0	0	1	0	0	3
15	potatoes	1	0	0	0	0	0	0	0	0	0	0	0	1

16	Vials	1	0	0	0	0	0	0	0	0	0	0	0	1
17	Juices	0	1	0	0	0	0	0	0	0	0	0	0	1
18	Fats	0	1	0	0	0	0	0	0	0	0	0	0	1
19	Broths	0	0	4	0	0	0	0	0	0	0	0	0	4
20	Milk	0	0	0	0	0	0	3	0	0	1	0	0	4
21	Equafrica (samples)	0	0	0	0	0	0	0	0	0	0	2	0	2

Total 934

Table 2. DISEASES DIAGNOSED FROM JANUARY TO DECEMBER 2024

S/N	DISEASES	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	T0TAL
A	**AVIAN**													
1	Coccidiosis	0	5	1	7	4	3	3	1	0	0	3	2	28
2	Colibacillosis	1	8	10	11	6	9	5	3	5	0	4	2	64
3	Avian influenza	0	1	0	0	0	0	0	1	0	0	0	1	3
4	Klebsiellosis	0	0	0	0	0	0	0	0	1	0	0	0	1
5	Ostertagiasis	0	0	0	0	0	0	0	0	0	0	0	0	0
6	Salmonellosis	1	1	0	0	0	0	0	0	1	0	0	0	3
7	Pseudomoniasis	0	0	0	0	0	1	0	0	0	0	0	0	1
8	Staphyllococcosis	1	2	4	0	5	1	2	1	0	1	0	0	17
9	Streptococcosis	0	0	0	0	0	0	0	0	0	0	0	0	0
10	Ascaridiosis	2	1	1	1	0	5	2	1	0	0	0	0	13
11	Subulura infection	0	0	0	0	0	0	0	0	0	0	0	0	0
12	IBDV	0	0	0	0	0	0	0	0	0	0	0	0	0
13	Bacillus infection	0	3	1	1	3	2	0	1	4	0	0	0	15
14	NDV	0	0	0	0	0	0	0	0	1	0	0	0	1
15	Proteus infection	0	0	2	0	1	1	0	1	1	0	0	0	6
16	Heterakiasis	0	0	0	1	0	0	0	0	0	0	0	0	1
17	Syngamus infection	0	0	0	1	0	0	0	0	0	0	0	0	1
18	Trichuriasis	0	0	0	0	0	0	0	0	0	0	0	0	0
19	Tetrameres infection	0	0	0	0	0	0	0	0	0	0	0	0	0
20	Aeromonas infection	0	0	0	0	0	0	0	0	0	0	0	0	0
21	Capillariasis	0	0	0	0	0	0	0	0	0	0	0	0	0

22	Prosthogonimus infection	0	0	0	0	0	0	0	0	0	0	0	0	0
23	Micrococcus Infection	0	0	0	0	0	0	0	0	0	0	0	0	0
24	Strongyloidiasis	0	1	0	0	0	0	0	0	0	0	0	0	1
25	Enterobacter infection	0	0	0	0	0	0	0	0	0	0	0	0	0
26	Avian mycoplasma	0	0	0	0	0	0	0	0	0	0	0	0	0
27	Cyclospora	0	0	0	0	1	0	0	0	0	0	0	0	1
27	Citrobacter infection	0	0	0	0	0	0	0	0	0	0	0	0	0
28	Gardiasis	0	0	0	0	0	0	0	0	0	0	0	0	0
29	Bacterial infection	0	0	0	0	0	0	0	0	0	0	0	0	0
30	Helminthosis	0	0	0	0	0	0	0	0	0	0	0	0	0
31	Leptospirosis	0	0	0	0	0	0	0	0	0	0	0	0	0
32	Hymenolopis	0	2	1	2	4	0	3	0	0	0	0	0	12
33	Taeniasis	0	0	0	0	0	0	0	0	0	0	0	0	0
34	Yersinia	0	0	0	0	0	0	0	0	0	0	0	0	0
35	Echinostoma	0	0	0	0	0	0	0	0	0	0	0	0	0
36	Research work	0	0	0	0	0	0	0	2	0	0	0	0	2
37	Avian tuberculosis	1	0	0	0	0	0	0	0	0	0	0	0	1
38	Choanotaenia	0	1	1	2	1	0	0	0	0	0	0	0	5
39	H9	0	0	1	0	0	0	0	0	0	0	0	0	1
40	Candida	0	0	0	0	1	0	0	0	0	0	0	0	1
B	**BOVINE**													

1	Mecistocirrus infection	0	0	0	0	0	0	0	0	0	0	0	0	0
2	Coccidiosis	2	0	1	1	1	0	0	0	0	4	0	1	10
3	Babesiosis	4	0	7	3	3	0	1	5	0	0	5	2	30
4	Anaplasmosis	0	0	4	0	2	0	1	7	0	0	0	3	17
5	Theileriosis	0	0	0	0	0	0	0	0	0	0	0	0	0
6	Moniezia infection	0	0	0	0	1	0	0	0	0	0	0	0	1
7	Amphistomiasis	0	0	0	0	0	0	0	0	0	0	0	0	0
8	Buxtonellosis	0	0	4	0	0	0	0	0	0	0	0	0	4
9	Strongyloidiasis	0	0	0	0	2	0	0	0	0	6	0	0	8
10	Ascaridiosis	0	1	5	0	3	0	1	0	1	1	0	1	13
11	Fischaderius infection	0	0	1	0	0	0	0	0	1	0	0	0	2
12	Fascioliasis	0	0	0	0	0	0	0	0	0	0	0	0	0
13	Filariodosis	0	0	0	0	0	0	0	0	0	0	0	0	0
14	Trypanosomioasis	0	0	4	0	0	0	0	2	0	0	2	0	8
15	Bunostomum infection	0	0	0	1	1	0	0	0	0	0	0	0	2
16	Cooperia infection	0	0	0	0	0	0	1	0	0	0	0	0	1
17	CBPP	0	0	0	1	0	0	0	2	1	0	0	0	4
18	Gastrothylex infection	0	0	0	0	0	0	0	0	0	0	0	0	0
19	Staphyllococcosis	0	0	0	0	0	0	0	0	0	0	0	0	0
20	Klebsiellosis	0	0	0	0	0	0	1	0	0	0	2	0	3
21	Ehrlichia	0	0	0	0	0	0	0	0	0	0	0	0	0
22	Ostertagiasis	0	0	0	0	0	0	0	0	0	0	0	0	0
23	Trichostrongylosis	0	0	0	1	0	0	0	0	0	0	0	0	1
2	Bacillus	0	1	0	0	0	0	0	1	0	0	0	0	2

4	infection													
25	Aeromonas infection	0	0	1	0	0	0	0	0	0	0	0	3	4
26	Candidiasis	0	0	0	0	0	0	0	0	0	0	0	0	0
27	FMD	0	0	0	0	0	0	0	1	0	0	0	0	1
28	Toxocariosis	0	0	1	0	1	0	3	0	0	1	0	0	6
29	Lumpy skin disease	0	0	0	0	0	0	0	0	0	0	0	0	0
30	Rhizopus spp	0	0	0	0	0	0	1	0	0	0	0	0	1
31	Proteus	0	0	0	0	0	0	1	0	0	0	0	2	3
32	Collibacilosis	0	0	1	1	4	0	0	0	0	0	0	0	6
33	Bacterial septicaemia	0	0	0	0	0	0	0	0	0	0	0	0	0
34	Streptococosis	0	0	0	0	0	0	0	0	0	0	0	0	0
35	Leptospirosis	0	0	3	0	0	0	0	0	0	0	0	0	3
36	Brucellosis	0	0	0	2	0	0	3	0	0	0	6	0	8
37	Cyclospora	0	0	0	0	0	0	0	0	0	0	0	0	0
38	Strongyle	1	0	6	0	0	0	0	0	0	0	0	1	1
39	Traumatic injury	0	0	0	0	0	0	0	0	0	0	0	0	0
40	Oesophagostomum	2	0	0	3	1	0	0	0	0	0	0	0	6
41	Haemonchosis	0	0	0	3	1	0	0	0	0	0	0	0	4
42	Syngamus	0	0	0	0	0	0	0	0	0	0	0	0	0
43	Paramphistome	0	0	0	0	0	0	0	0	0	0	0	0	0
44	Mycoplasma	0	0	0	0	0	0	0	0	0	0	0	0	0
45	Rabies	0	0	0	0	0	0	0	0	1	0	0	0	1

46	Amblyoma	0	0	0	0	0	0	0	0	0	0	0	0	0
47	Hyalomma	0	0	0	0	0	0	0	0	0	0	0	0	0
48	Dicrocoelium	3	0	0	0	0	0	0	0	0	0	0	0	3
49	Ticks	0	0	0	0	0	0	0	0	0	0	0	0	0
50	Research work	1	0	0	0	0	0	0	0	0	0	1	3	5
51	Trichuris	0	0	0	0	0	0	0	0	0	0	0	0	0
52	Mecistocirrus	0	0	1	0	0	0	0	0	0	0	0	0	1
53	Pseudomonas	0	0	0	0	1	0	0	0	0	0	0	0	1
54	Bovine tuberculosis	0	0	0	0	0	0	0	0	2	0	1	0	3
55	pasteurellosis	0	0	0	0	0	0	3	0	0	0	1	0	4
56	Bovine viral diarrhea	0	0	0	0	0	0	0	0	0	0	0	10	10
C	**CANINE**													
1	Rabies	16	16	15	18	15	17	12	15	24	17	20	8	193
2	Mycoplasmosis	0	0	0	0	0	0	0	0	0	0	0	0	0
3	Staphyllococcosis	0	2	0	0	3	0	2	0	0	0	1	0	8
4	Colibacillosis	1	2	1	2	1	1	0	0	0	0	2	0	10
5	Babesiosis	0	2	2	1	0	1	2	0	0	0	0	2	10
6	Anaplasmosis	0	1	0	0	0	0	1	0	0	0	0	1	3
7	Hepatozoon infection	0	0	0	0	0	0	0	0	0	0	0	0	0
8	Ancylostoma infection	0	0	0	0	0	0	0	0	0	0	0	0	0
9	Klebsiellosis	0	0	0	1	0	0	0	0	0	0	0	0	1
10	Coccidiosis	0	0	0	0	0	0	0	0	0	0	0	0	0
11	Mucor Infection	0	0	0	0	0	0	0	0	0	0	0	0	0
12	Proteus infection	1	2	0	0	0	0	0	1	0	0	0	0	4

13	Toxocariosis	0	0	0	0	0	0	0	1	1	0	0	0	2
14	Yersiniosis	0	0	0	0	0	0	0	0	0	0	0	0	0
15	Aeromonas infection	0	0	0	0	0	0	0	0	0	0	0	0	0
16	Streptococcosis	0	0	0	0	0	0	0	0	0	0	0	0	0
17	Diphyllobolthrum infection	0	0	0	0	0	0	0	0	0	0	0	0	0
18	Research work (detection of negri bodies in dogs in Bokkos town).	0	0	0	0	0	0	0	0	0	0	0	0	0
19	Research work (prudence of rabies virus antigen in brain of dogs in Gwandang dog market)	1	0	0	0	0	0	0	0	0	0	0	0	1
20	Research work (prevalence of rabies virus antigen in dogs in Panshin LGA)	0	0	0	0	0	0	0	0	0	0	0	0	0
21	Bacillus	0	5	0	0	1	0	0	1	1	0	0	1	9
22	Bacterial septicaemia	0	0	0	0	0	0	0	0	0	0	0	0	0
23	Piroplasmosis	0	0	0	0	0	0	0	0	0	0	0	0	0
24	Proteus infection	0	0	0	0	0	0	0	0	0	0	0	0	0
25	Leptospirosis	0	1	4	0	1	0	8	0	0	0	0	0	13
26	Anaplasmoniasis	0	0	0	0	0	0	0	1	0	0	0	0	1
27	Pseudomoniasis	0	0	0	0	0	0	0	0	0	0	0	0	0
2	Trypanosomiasi	0	1	0	0	0	0	0	0	0	0	0	0	1

8	s													
29	Rhapcephalus	0	0	1	0	0	0	0	0	0	0	0	0	1
30	Dicrocoelium	0	0	0	1	0	0	0	0	0	0	0	0	1
31	Capillaria	0	0	0	1	0	0	0	0	0	0	0	0	1
32	Dipylidium	0	0	0	0	1	0	0	1	0	0	0	0	2
33	Trichuris	0	0	0	0	0	0	0	0	0	1	0	0	1
D	**CAPRINE**													
1	Colibacillosis	0	0	0	0	1	0	0	1	0	0	0	0	2
2	Ostertagiasis	0	0	0	0	0	0	0	0	0	0	0	0	0
3	PPR	0	0	1	2	0	0	0	2	0	0	1	0	6
4	Multilocular cysts	0	0	0	0	0	0	0	0	0	0	0	0	0
5	Trichostrongylosis	0	0	0	0	0	0	0	1	0	0	0	0	1
6	Staphyllococcosis	0	0	0	0	0	0	0	0	0	0	0	1	1
7.	Klebsiellosis	0	0	0	0	0	0	0	0	0	0	0	0	0
8	Haemonchosis	0	0	0	2	0	0	0	2	0	0	0	1	5
9	Dicrocoeliasis	0	0	0	0	0	0	0	0	0	0	0	0	0
10	Cysticercosis	0	0	0	0	0	0	0	0	0	0	0	0	0
11	Epidermoid cyst	0	0	0	0	0	0	0	0	0	0	0	0	0
12	Coccidiosis	0	1	0	8	0	0	0	1	0	0	0	0	9
13	Oesophagostomum infection	0	0	0	1	0	0	0	0	0	0	0	1	2
14	Pseudomonas infection	0	0	0	0	0	0	0	0	0	0	0	0	0
15	strongyliasis	0	1	0	5	0	0	0	0	0	0	0	0	6
16	Rabies	0	0	0	0	0	0	0	1	0	0	0	0	1
17	Bacterial septicaemia	0	0	0	0	0	0	0	0	0	0	0	0	0
1	Helminthosis	0	0	0	0	0	0	0	0	0	0	0	0	0

8														
19	Mycoplasmoniasis	0	0	0	0	0	0	0	0	0	0	0	0	0
20	Theileria	0	0	0	0	0	0	0	0	0	0	0	0	0
21	Babesiosis	0	0	0	0	0	0	0	1	0	2	2	1	5
22	Anaplasmoniasis	0	0	0	0	0	0	0	1	0	0	0	0	1
23	Bunostomum	0	0	0	0	0	0	0	1	0	0	0	1	2
24	Brucella	0	0	0	1	0	0	1	0	0	0	0	0	1
25	Haemonchus	0	1	0	0	0	0	0	0	0	0	0	0	1
26	trypanosomiasis	0	0	0	0	0	0	0	0	0	0	0	0	0
27	Research work	0	0	0	0	0	0	0	0	0	0	0	0	0
28	Leptospirosis	0	0	0	2	0	0	0	0	0	0	0	0	2
29	Nematodirus	0	0	0	0	0	0	0	0	0	0	0	1	1
E	**PORCINE**													
1	Colibacillosis	0	0	1	2	3	0	0	0	0	0	0	2	8
2	Ascaridiosis	0	0	0	0	0	0	0	0	0	0	0	0	0
3	Proteus infection	0	0	0	0	0	0	0	0	0	0	0	0	0
4	Klebsiellosis	0	0	0	0	0	0	0	0	0	0	0	0	0
5	ASF	0	0	0	0	1	0	33	1	1	2	0	0	38
6	aeromoniasis	0	0	1	0	0	0	0	0	0	0	0	0	1
7	Coccidiosis	0	0	0	0	0	0	0	0	0	0	0	0	0
8	staphylococosis	0	0	0	0	0	0	0	0	0	0	0	0	0
9	Candidiasis	0	0	0	0	0	0	0	0	0	0	0	0	0
10	Proteus	0	0	0	0	0	0	0	0	0	0	0	0	0
11	Pseudomoniasis	0	0	0	0	0	0	0	0	0	0	0	0	0
12	Oesophagostomum	0	0	0	0	0	0	0	0	0	0	0	0	0
1	Strongyle	0	0	0	0	0	0	0	0	0	0	0	2	2

3														
14	Stephanurus	0	0	0	0	0	0	0	0	0	0	0	0	0
15	Necator	0	0	0	0	0	0	0	0	0	0	0	0	0
16	Paragonimus	0	0	0	0	0	0	0	0	0	0	0	0	0
17	westermanni	0	0	0	0	0	0	0	0	0	0	0	0	0
18	Anaplasmosis	0	0	1	0	0	0	0	0	0	0	0	0	1
19	Babesiosis	0	0	1	0	0	0	0	0	0	0	0	0	1
20	Theileriosis	0	0	0	0	0	0	0	0	0	0	0	0	0
21	Brucellosis	0	0	0	0	0	0	0	0	0	0	0	0	0
22	Leptospirosis	0	0	0	0	0	6	0	0	0	0	0	0	6
23	Providencia	0	0	0	0	0	0	0	0	0	0	0	0	0
24	Bacillus	0	0	1	0	0	0	0	0	0	0	0	0	1
25	Mycoplasmoniasis	0	0	0	0	0	0	0	0	0	0	0	0	0
26	Eperythrozoon	0	0	0	0	0	0	0	0	0	0	0	0	0
26	Tichrinella	0	0	0	1	0	0	0	0	0	0	0	0	1
27	Streptococosis	0	0	0	0	1	0	0	0	0	0	0	0	1
28	Research work	0	0	0	0	0	0	0	1	0	0	0	0	1
F	**FEEDS**													
1	Colibacillosis	0	0	0	0	0	0	0	0	0	0	0	0	0
2	Aspergillosis	0	0	0	0	0	0	0	0	0	0	0	0	0
3	Aeromonas infection	0	0	0	0	0	0	0	0	0	0	0	0	0
4	staphylococsis	0	0	0	0	0	0	0	0	0	0	0	0	0
5	streptococosis	0	0	0	0	0	0	0	0	0	0	0	0	0
6	Bacillus	0	2	0	0	1	1	1	0	0	0	0	0	5

7	Micrococcus spp	0	0	0	0	0	0	1	0	0	0	0	0	1
8	Pseudomoniasis	0	0	0	0	0	0	0	0	0	0	0	0	0
9	Klebsielliosis	0	0	0	0	0	0	0	0	0	0	0	0	0
10	Proximate Aanalysis	0	0	0	0	0	0	0	1	0	0	0	0	1
G	**PISCES**													
1	Colibacillosis	0	0	0	0	0	0	0	1	2	0	0	0	3
2	Aeromonas infection	0	0	0	0	0	0	0	1	0	0	0	0	1
3	Proteus infection	0	0	0	0	0	0	0	1	0	0	0	0	1
4	Bacillus	0	1	0	0	0	0	0	0	2	0	0	0	3
5	Micrococcusis	0	0	0	0	0	0	0	0	0	0	0	0	0
6	Research work	0	0	0	0	0	0	0	1	0	0	0	0	1
7	Klebsielliosis	0	0	0	0	0	0	0	1	0	0	0	0	1
8	Enterobacter	0	0	0	0	0	0	0	0	1	0	0	0	1
H	**WATER**													
1	Colibacillosis	0	0	0	0	0	0	0	0	0	0	0	0	0
2	Klebseillosis	1	0	0	0	0	0	0	0	0	0	0	0	1
3	pseudomonasis	0	0	1	0	0	0	0	0	0	0	0	0	1
4	Aeromoniasis	0	0	0	0	0	1	0	0	0	0	0	0	0
5	Provdencia	0	0	0	0	0	0	0	0	0	0	0	0	0
6	Research work	0	0	0	0	0	0	0	1	0	0	0	0	1
I	**WILDLIFE**													
1	Colibacillosis	0	0	0	0	0	0	0	0	0	0	0	0	0
2	Coccidiosis	0	0	0	0	0	0	0	0	0	0	0	0	0
3	Research work	0	0	0	0	0	0	0	0	0	0	0	0	0
4	Aeromonas	0	0	0	0	0	0	0	0	0	0	0	0	0
5	Bacillus	0	0	0	1	0	0	0	0	0	0	0	0	1
6	Mites	0	0	0	0	0	0	0	0	2	0	0	0	2
7	Ascaris	0	0	0	0	0	0	0	0	1	0	0	0	1
8	Dicrocoelium	0	0	0	0	0	0	0	0	4	0	0	0	4
J	**LAPRINE**													
1	Coccidiosis	0	1	3	0	0	2	5	2	1	1	2	1	18
2	Klebsiellosis	0	0	0	0	0	0	1	0	0	0	1	0	2
3	Trichostrongylo	0	1	0	0	0	1	1	0	0	1	1	0	5

	sis													
4	Hepatotoxicity	0	0	0	0	0	0	0	0	0	0	0	0	0
5	Staphyllococosis	0	1	1	0	0	0	0	1	0	0	0	0	2
6	Graphydium	0	0	0	0	0	0	0	0	0	0	0	0	0
7	Aeromoniasis	0	0	0	0	0	0	0	0	0	0	0	0	0
8	Colibacillosis	0	0	1	0	1	1	4	1	0	1	1	0	10
9	Proteus	0	0	0	0	0	0	0	2	0	0	0	0	2
10	Salmonellosis	0	0	0	0	0	0	1	0	0	0	0	0	1
11	Rhiropus	0	0	0	0	0	0	0	0	0	0	0	0	0
12	Hynoloelis	0	0	0	0	0	0	0	0	0	0	0	0	0
13	Cryptosporidium	0	0	1	0	0	0	0	0	0	0	0	0	1
14	Strongyloides	0	0	0	0	0	0	0	0	0	0	0	0	0
15	Taeniasis	0	0	0	0	0	0	0	0	0	0	0	0	0
16	Drug toxicity (research)	0	0	0	0	0	0	0	0	0	0	0	0	0
17	Hepa toxicity(research)	0	0	0	0	0	0	0	0	0	0	0	0	0
18	Helminthosis	0	0	0	0	0	0	0	0	0	0	0	0	0
19	Pseudomonas infection	0	0	0	0	0	0	0	0	0	0	2	0	2
20	Passalurus	0	0	0	0	0	0	0	0	0	0	0	0	0
21	Graphidium	0	0	0	0	0	0	0	0	0	0	0	0	0
22	Leptospirosis	0	0	0	0	0	0	0	0	0	0	0	0	0
23	Research work	12	0	0	0	0	0	0	10	2	0	2	1	27
24	Bacillus	0	1	0	0	0	0	0	0	1	0	0	0	2
25	Syphacia	0	0	2	0	0	0	0	0	0	0	0	0	2
26	Hymenolopis	0	0	1	0	0	0	0	0	0	0	0	0	1

K	**FELINE**													
1	Rabies	0	0	0	0	0	0	0	1	1	9	0	0	11
2	Coccidiosis	1	0	0	0	0	0	0	0	0	0	0	0	1
3	Bacillus	0	0	0	0	0	0	0	0	0	0	0	0	0
4	Ascariosis	0	0	0	0	0	0	0	0	0	0	0	0	0
5	Taeniasis	0	0	0	0	0	0	0	0	0	0	0	0	0
6	Leptospirosis	0	0	0	0	0	0	0	0	0	0	0	0	0
7	Colibacillosis	0	0	0	0	0	0	0	0	0	0	0	0	0
L	**DRUGS**													
1	Staphyllococcosis	0	0	0	0	0	0	0	0	0	0	0	0	0
2	Drug sensitivity	0	0	0	0	0	0	0	0	0	0	0	0	0
M	**OVINE**													
1	Klebsiellosis	0	0	0	0	0	0	0	0	0	0	0	0	0
2	PPR	0	0	1	0	0	0	0	2	0	0	0	0	3
3	Sheep pox	0	0	0	0	0	0	0	0	0	0	0	0	0
4	Coccidiosis	0	0	0	11	0	1	0	0	0	0	0	0	12
5	Salmonellosis	0	0	0	0	0	0	0	0	0	0	0	0	0
6	Pneumonia	0	0	0	0	0	0	0	0	0	0	0	0	0
7	Haemonchus infection	0	0	1	3	0	2	0	0	0	0	0	1	7
8	Fascioliasis	0	0	1	0	0	0	0	0	0	0	0	0	1
9	Proteus infection	0	0	0	0	0	0	0	0	0	0	0	0	0
10	Bacillus infection	0	0	0	0	0	0	0	0	0	0	0	0	0
11	Chabetiaovina	0	0	0	0	0	0	0	0	0	0	0	0	0
12	Trichostrongylus	0	0	0	0	0	1	0	0	0	0	0	0	1
13	Trichophyton	0	0	0	0	0	0	0	0	0	0	0	0	0
14	Colibacillosis	0	0	2	1	0	0	0	2	0	0	0	0	5
15	Helminthosis	0	0	0	0	0	0	0	0	0	0	0	0	0
16	Bacterial infection	0	0	0	0	0	0	0	0	0	0	0	0	0
17	Piroplasmosis	0	0	0	0	0	0	0	0	0	0	0	0	0
1	Taeniasis	0	0	0	0	0	0	0	0	0	0	0	0	0

8														
19	Ostertagia infection	0	0	0	0	0	0	0	0	0	0	0	0	0
20	Anaplasma	0	0	0	0	0	0	0	0	0	0	0	0	0
21	Babiesia	0	0	0	0	0	0	0	0	0	0	0	0	0
22	Theileria	0	0	0	0	0	0	0	0	0	0	0	0	0
23	Oesophagustonum	0	0	0	2	0	0	0	0	0	0	0	0	2
24	Colimbianum	0	0	0	0	0	0	0	0	0	0	0	0	0
25	Rabies	1	0	0	0	0	0	0	0	0	0	0	0	1
26	Anthrax	1	0	0	0	0	0	0	0	0	0	0	0	1
27	Research work	0	0	0	0	0	0	0	0	0	0	0	0	0
28	Hook worms	0	0	1	0	0	1	0	0	0	0	0	1	3
29	Prosthogonimus	0	0	0	1	0	0	0	0	0	0	0	0	1
30	Trichostrongyllus	0	0	0	1	0	0	0	0	0	0	0	0	1
31	Strongylloides	0	0	0	3	0	0	0	0	0	0	0	0	3
32	Dicrocoellium	0	0	0	2	0	0	0	0	0	0	0	0	2
33	Paragonimus	0	0	0	0	0	1	0	0	0	0	0	0	1
34	Ladomoeba	0	0	0	0	0	1	0	0	0	0	0	0	1
35	Actinosphaerium	0	0	0	0	0	1	0	0	0	0	0	0	1
36	Pseudomonas	0	0	0	0	0	0	0	1	0	0	0	0	1
37	Coscinodiscus	0	0	0	0	0	0	0	1	0	0	0	0	1
N	**PLANTS**													
1.	Colibacillosis	0	0	0	0	0	0	0	0	0	0	0	0	0

2	Citrobacter	0	0	0	0	0	0	0	0	0	0	0	0	0
3	Paenibaccilus	0	0	0	0	0	0	0	0	0	0	0	0	0
4	Pseudomoniasis	0	0	0	0	0	0	0	0	0	0	0	0	0
5	Aeromoniasis	0	0	0	0	0	0	0	0	0	0	0	0	0
6	Bacillus	0	0	0	0	0	0	0	0	0	0	0	0	0
7	Klebeilla	0	0	0	0	0	0	0	1	0	0	0	0	1
8	Nitrate poisoning	0	0	0	0	0	0	0	1	0	0	0	0	1
O	**EQUINE**													
1	Staphyllococcosis	0	0	0	0	0	0	0	0	0	0	0	0	0
2	Mucor	0	0	0	0	0	0	0	0	0	0	0	0	0
3	Bacillus	0	0	0	0	0	0	0	0	0	0	0	0	0
4	Donkey rabies	0	0	0	0	0	0	0	0	0	0	0	0	0
5	Babesiosis	0	0	0	3	0	0	0	0	0	0	0	0	3
6	AHS	0	0	0	0	0	0	0	0	1	0	0	0	1
7	Colibacillosis	0	0	0	0	0	0	0	0	0	1	3	0	4
P	**PLATES**													
1	Bacillus	0	0	2	0	0	0	1	1	1	0	0	1	6
2	Streptococosis	0	0	0	0	0	0	1	0	0	0	0	0	1
3	Brevibacillus brevis	0	0	0	0	0	0	0	0	0	0	0	0	0
4	Staphyllococosis	0	0	0	0	0	0	0	0	0	0	0	0	0
5	Micrococcus	0	0	0	0	0	1	0	0	0	2	0	0	3
6	Colibacillosis	0	0	0	0	0	0	0	2	0	0	0	0	2
7	Klebsiella	0	0	0	0	0	0	0	1	0	0	0	0	1
8	Morgnella	0	0	0	0	0	0	0	1	0	0	0	0	1
9	Paenibacillus	0	0	0	0	0	0	0	0	1	1	0	0	2
Q	**HUMAN**													
1	Granuloma	0	0	0	0	0	0	0	0	0	0	0	0	0
2	Leptospirosis	0	0	3	2	2	0	0	0	0	0	0	1	8
3	Salmonellosis	0	0	0	0	0	0	0	0	0	0	0	0	0
4	brucellosis	0	0	0	0	0	0	0	0	0	0	0	0	0
5	Bacillus	0	2	1	0	1	0	0	0	0	0	0	0	4
6	Rabies	0	0	0	0	2	0	0	0	0	0	0	0	2
7	Research work	0	0	0	0	0	0	0	0	1	0	0	0	1
8	Staphyllococosi	0	0	0	0	0	0	0	0	0	0	0	1	1

	S													
	WALLSCRAPPING/COBWEB													
1	Bacillus	0	0	0	0	0	0	0	0	0	0	0	0	0
	BROTH													
	Bacillus	0	0	0	0	0	0	0	0	0	0	0	0	0
	MILK													
	Bacillus	0	0	0	0	0	0	5	0	0	0	0	0	5
	SOIL													
1	Pseudomoniasis	0	0	0	0	0	0	0	0	0	0	0	0	0
2	Aeromoniasis	0	0	0	0	0	0	0	0	0	0	0	0	0
3	Bacillus	0	0	0	0	0	0	0	0	0	0	0	0	0
4	Research work	0	0	1	0	0	0	0	0	0	0	0	0	1
	INSECTS													
1	Mosquitoes	0	0	0	0	0	0	0	0	0	0	0	0	0
2	Ticks	0	0	0	0	0	0	0	0	0	0	0	0	0
3	Lice	0	0	0	0	0	0	0	0	0	0	0	0	0
	VIALS													
	Antimicrobial test	1	0	0	0	0	0	0	0	0	0	0	0	1
	PEPTONE MEDIA													
	Bacillus	0	0	0	0	1	0	0	0	0	0	0	0	0

Table 3. Histology slides processed from January to December 2024.

S/No	ORGANS	Total
1	**Liver**	472
2	**Kidney**	212
3	**Brain**	39
4	**Intestine**	164
5	**Bone**	27
6	**Heart**	104
7	**Spleen**	51
8	**Pancreas**	32
9	**Skeletal muscle**	30
10	**Testis**	39
11	**Abomasum**	1
12	**Lung**	134
13	**Thymus**	1
14	**Bursa of fabricious**	4
15	**Tumor tissue/Growth (Human)**	2
16	**Bladder**	31
17	**Proventriculus**	1
18	**Lymph node**	2
19	**Gills**	33
20	**Mammary gland**	2
21	**Sciatic nerve**	1
22	**Pox lesion**	1
23	**Trachea**	13
24	**Tubercle**	1
25	**Skin**	31
26	**Spinal cord**	1
27	**Ovary**	64
28	**Gall bladder**	2
	Total	**1530**

Tables 4: INCINERATION WASTES REPORT FROM JANUARY – DECEMBER, 2024.

LABORATORY/UNIT	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	TOTAL
NECROPSY	1,299.2	713.6	1,124.4	1,854.4	1,495.4	577.1	530.4	903.7	233.8	457.1	2,401.6	550.8	12,141.5
RABIES LAB.	47.5	61.2	83.8	57.4	122.4	115.5	69.3	58.8	44.2	77.7	49.6	58.7	846.1
VIR. VAC. PROD	NIL	NIL	1,408	1,575	1,430	1,100	451	53.4	NIL	208	NIL	NIL	6,245.4
BACT, RES. DIV.	43.8	81.7	152.7	119.3	71.8	62.2	91.8	40.7	58.3	88.6	59.8	103.4	974.1
LAB, SERVICES DIV.	123.9	125.3	104.6	174.8	212.4	273.4	270.8	225.6	126.5	188.6	178.4	144	2,148
DRUG DEV	9.3	6.3	12.4	17.2	9.7	27.4	137.2	35.6	7	12.8	27.3	13.1	315.3
REGIONAL LAB.	36.6	96.7	61.4	68	79.1	37	74.9	47.7	42	39.6	47.3	84.6	714.9
VIRAL RES. DIV.	11	11	60.8	32.6	17.8	17.1	21.6	8.6	19	23.9	27.1	22.2	272.7
DERMATOPH.	12.4	6.4	18.3	24.9	32.4	27.3	30.8	13.6	29.9	21.5	35.9	45.5	298.9
HISTOPATHOLOGY	3.5	4.7	1.3	4.6	5.6	3.9	5.4	5.3	3.6	6.2	7.7	5.2	57
Q. CONTROL LAB.	12.9	17.3	24.8	28.5	8.2	13.2	32.5	7.4	10.9	4.3	NIL	19.7	179.7
BIO-TECHNOLOGY	60	122.3	57.5	64.9	74.3	42.3	68.2	21.3	67.5	25.4	65	74.3	743
UNKNOWN	190.5	207.3	209.4	302.1	251.4	247.8	261.3	254	253.2	272.6	247.2	256.9	2,953.7
CDL ENV. WASTE	35.7	57	42	42.6	61	48.4	44.7	43	47	49	40.4	40.7	551.5
FMD LAB.	3.2	6.2	3.2	NIL	NIL	6.3	NIL	NIL	NIL	NIL	NIL	NIL	18.9
BSL 3 LAB.	14.3	50.4	NIL	NIL	43	NIL	NIL	38.4	NIL	NIL	NIL	NIL	146.1
LEPTO. LAB.	2.8	1.3	1.9	5.5	2	6.6	3	3	NIL	3	NIL	NIL	29.1
BIO-CHEMISTRY	23.2	35.5	30.4	49.2	27.6	17.9	25	18.3	49.3	20.3	41.3	34.6	372.6
FIELDWORK	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	13.8	NIL	NIL	8.6	22.4
SIDE LAB.	10.8	32.2	15.1	28.9	11.8	7.2	18.4	8.2	6.8	18	9.2	19.9	186.5
MED. CENTRE	NIL	NIL	NIL	NIL	6.2	NIL	13	NIL	23.9	7	11.6	NIL	61.7
FCAH&PT, BACT.	NIL	NIL	NIL	NIL	NIL	81.1	39.7	33.2	NIL	NIL	NIL	NIL	154
VET CLINIC	47	17.6	NIL	152.6	104	69	90.7	NIL	12.1	101	92.6	85.3	771.9
TOTAL	1,987.6	1,654	3,412	4,622.5	4,066.1	2,780.7	2,279.7	1,819.8	1,048.8	1,624.3	3,342	1,567.5	30,205

Note: **All figures in kilogram's (Kg)**

CHALLENGES

1. The staff of this division work sometimes late into the night but have not received any reward or letters of commendation to encourage them.
2. The division is in need of at least 3 veterinary pathologists and 5 Livestock attendants.
3. Laboratory Consumables: None availability of consumables such as samples bottles, Universal bottles, hard gloves, nose mask, (protective kits) detergents, absolute alcohol, formalin, zylene, Hematoxylin and Eosin stains etc affects good sample collection and sample processing.
4. Frequent breaking down of the incinerator has caused a lot of health challenge to the staff in the division. As materials awaiting incineration especially vaccine eggs get piled up because the incineration machine has broken down and awaiting finance to get it fixed.
5. Non availability of a cold room (+2 - +5^{o}C) as part of the Post-Mortem facility for the preservation of carcasses and tissue samples.

SUGGESTIONS ON THE WAY FORWARD:

1. Provision of industrial microscopes with camera to ease histological reading of histopathology slides in line with international practices.
2. Provision of laboratory consumables and laboratory protective wares.
3. Installation of cold room (+2 - +5^{o}C) as part of the postmortem facility for the preservation of carcasses and tissue samples.
4. The incinerator need to be replaced with a new one as the current one is old (over 40years) and is gulping so much money for maintenance and an operation.
5. Cooperation of other laboratories to reduce turnaround time.

32. VETERINARY PUBLIC HEALTH & PREVENTIVE MEDICINE DIVISION

FUNCTIONS/ MANDATE

The Veterinary Public Health and Preventive Medicine Division (VPH&PMD) was established to improve the gathering and evaluation of diagnostic and research data produced in the Institute. The ultimate goal is processing and presenting this data in an understandable and accessible way for policymakers and end users. In essence, the Division regularly conducts disease surveys, monitoring, surveillance, and notification. It also maintains an up-to-date epidemiological data bank and information system. These efforts aim to actively gather, assemble, evaluate, and process data on animal diseases. The Division ensures that information about animal diseases and their effects on the economy and public health is made available in a sustainable and easily accessible manner to all pertinent parties and end users. This information is intended to improve the design of policies that will support livestock production, food security and safety, and animal and public health.

Research Activities

The Division conducts research and investigations of outbreaks of diseases of public health importance. It is also involved in organizing surveillance, surveys, and monitoring of endemic diseases and/or disease outbreaks, especially emerging and re-emerging zoonoses. Other research-related functions include disease modelling and forecasting and designing disease control and prevention strategies. The Division also provides direction for future studies on animal diseases. In 2024, a total of 916 cases with 11,742 samples were collated and documented for diagnoses and researches from various parts of Nigeria. Final laboratory results of 629 diagnoses were obtained and documented in the databases. Specific research activities mentioned include the analysis of 2023 and 2024 available data on:

- Top 10 reporting diseases states to NVRI
- Top 5 most reported and 5 least reported diseases per species
- Number of OIE notifiable disease occurrence in time and space
- Disease occurrence of zoonotic diseases per species in time and space

Publications/Scientific Output

The Division was involved in the preparation and dissemination of monthly disease reports to all designated authorities and stakeholders. They also ensured the timely reporting and presentation of epidemiological reports to the relevant authorities.

Capacity Building and Training

The Division conductedin-house weekly training on statistical data analysis for its staff. Some staff members received preliminary training on R programming under the LIDISKI

project. Additionally, some staff participated in hands-on training on Mpox samples collection, storage, and transportation under the UK-PHRST Mpox project. The Division also focuses on training students on internship and SIWES on epidemiology and basic statistical data analysisand trained a substantial number of IT students. The Division also initiated and trained staff members to build their capacity on data management and analysis.

Infrastructure and Facilities

The Division has no office accommodation and laboratories. There is also lack of dedicated vehicle for prompt response to reported outbreaks alongside basic sample collecting materials and personal protection equipment and a lack of office equipment such as printer, photocopy machine, scanner, stapler and staple pins, print paper etc.. The Division also lacks licensed Microsoft packages, statistical and epidemiological software packages critical for data management.

Human Resources and Staff Development

There is inadequate number of required staff to handle activities in the division. There is a need for additional requisite staff such as veterinary officers with focus interest on epidemiology and biostatistics.

Community Engagement and Outreach

The Division ensures that all pertinent parties and end users receive information to improve policy design.

Challenges and Constraints

The Division faces several challenges, including:

- No office accommodation and laboratories
- Inadequate number of required staff, the need for additional requisite staff such as veterinary officers with focus interest on epidemiology and biostatistics
- Lacks licensed Microsoft packages, statistical and epidemiological software packages critical for data management
- Lack of dedicated vehicle for prompt response to reported outbreaks alongside basic sample collecting materials and personal protection equipment
- Lack of office equipment such as printer, photocopy machine, scanner, stapler and staple pins, print paper etc.

Future Plans and Recommendations

The Division intends to:

- Develop a robust and real-time database of common diseases of animals in Nigeria.

- Establish a link with all the Divisions in the Institute and other relevant national and international bodies for continuous disease surveillance in Nigeria.
- Generate epidemiological profile of major livestock and poultry diseases in Nigeria in order to produce disease mappings and models for disease predictions.

Table 1: Summary of disease surveillance activities

Animal species	Total number of cases	Number of samples submitted	Bacterial diseases	Viral diseases	Helminths diseases	Protozoan diseases	Other Diseases	Total number of diagnoses
Avian	153	1687	92	10	31	28	0	161
Bovine	126	3494	23	2	33	27	0	85
Camel	1	193	0	0	0	0	0	0
Canine	320	1157	33	182	4	13	0	232
Caprine	43	1100	2	5	8	6	0	21
Equine	11	70	1	1	0	1	1	4
Feline	6	30	0	5	0	1	0	6
Laprine	72	1089	14	0	3	14	0	31
Ovine	42	704	7	3	13	4	0	27
Pisces	15	232	8	0	2	0	0	10
Porcine	22	551	7	4	2	2	0	15
Wildlife	3	67	0	0	3	0	1	4
Human	35	91	12	1	0	0	0	13
Other specimens	67	1277	17	1	0	0	2	20
Total	916	11742	216	214	99	96	4	629

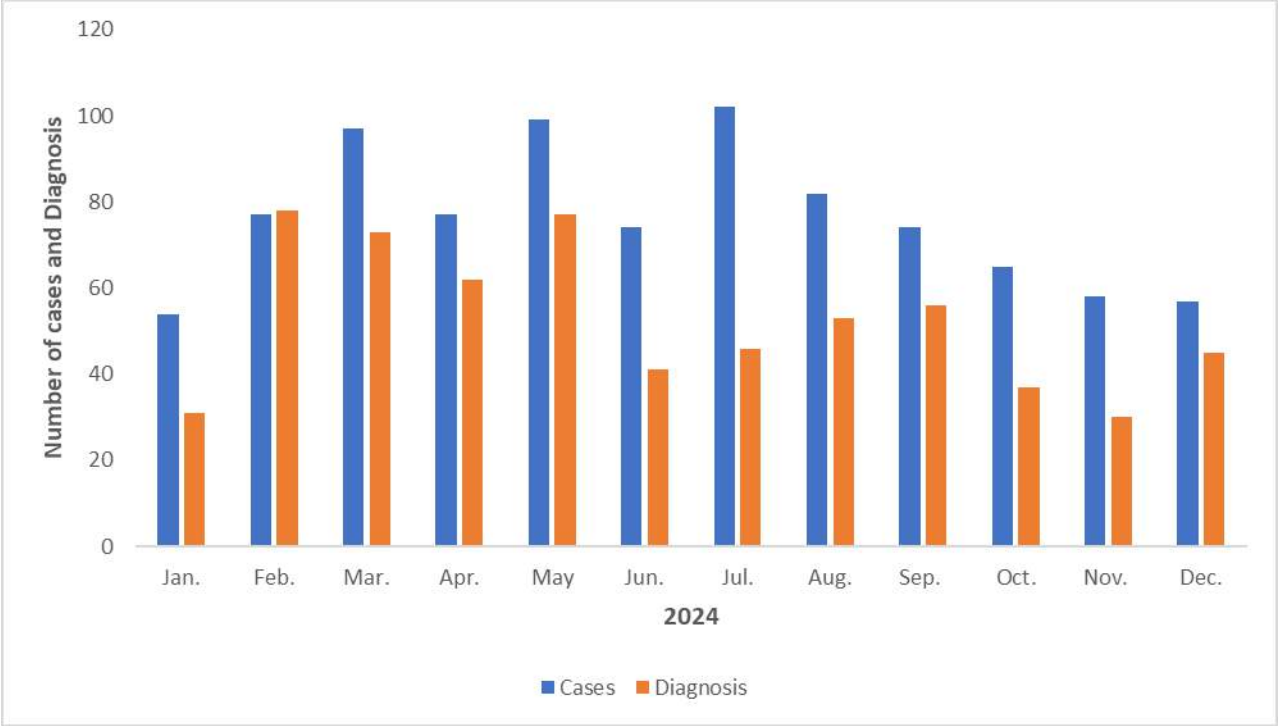
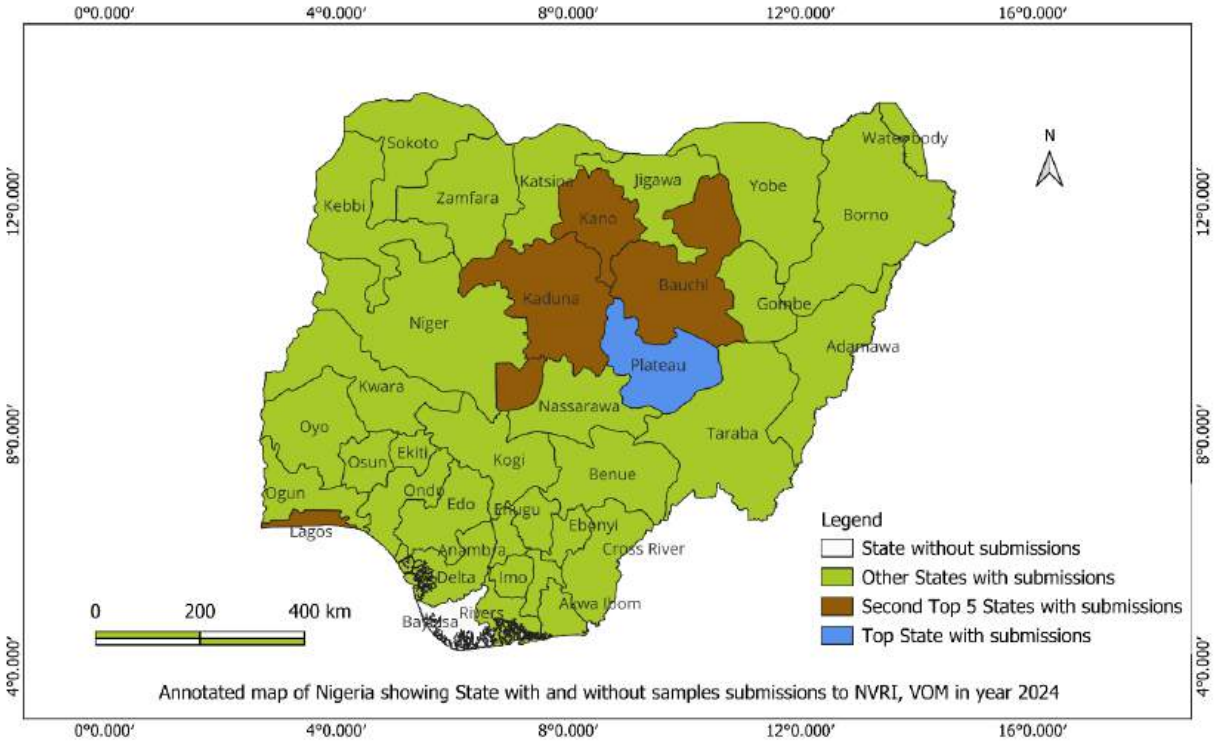


Figure 1: Annual distribution of number of cases submitted and diagnosis in 2024



33. VIROLOGY RESEARCH DIVISION

FUNCTION/ MANDATE

The Virology Division is responsible for conducting research, performing disease surveillance and diagnostics, and developing vaccines and other biological products. Our focus areas include: Canine Parvoviruses, Viral Skin Diseases, Avian Diseases, Morbillivirus, Mucosal Diseases.

Sections

1. Morbilliviruses and Related Viruses Laboratory
2. Viral Skin Diseases Laboratory
3. Avian Viral Diseases Laboratory

Research Activities

Ongoing research and collaborations include:

- LIDISKI-Peste des petits ruminants (PPR) surveillance in small ruminants in Nigeria by the European Union, FAO/IAEA, and the National Veterinary Research Institute (NVRI).
- Controlling transboundary animal diseases spread in livestock markets: A pilot intervention study.
- Investigations on the role of atypical hosts in the epidemiology of Peste des petits ruminants (PPR) project by FLI, FAO, and NVRI Vom.
- Assessing the seroprevalence of Bluetongue and Epizootic Haemorrhagic Disease in Nigeria project by The Pirbright Institute and NVRI, Vom.
- Screening for Antiviral activities of some indigenous plant extracts using embryonated eggs and Newcastle Diseases Virus-NDV. Collaboration with the University of Jos.
- Research and Surveillance of morbilliviruses (Peste des petits ruminants (PPR) and canine distemper) and related viruses (Canine Parvoviruses) in all states of the federation, especially in outbreak locations for control measures toward the PPR eradication programme in 2030.
- Routine diagnosis of viruses using Serological methods (competition ELISA and Immunocapture ELISA and Polymerase Chain Reaction (RT-PCR) techniques for PCR proficiency.
- Routine serological diagnosis of Infectious bursal disease virus (IBDV) using Agar gel immunodiffusion test (AGID).
- Detection of transboundary diseases from samples collected at livestock markets in Plateau and Bauchi states.

Publications/Scientific Output

- LIDISKI project accomplished successfully.
- Participation in Proficiency test (PT) for PPR, 2024. Results: 100% = Perfect score.
- The following articles were published:

Capacity Building and Training

- Participation in Nduaka Education Foundation (NEF)/NVRI Collaboration training.
- Training of students on Industrial attachment.
- Ten (10) personnel trained in the Division in different aspects of prevention and control of livestock and zoonotic diseases, Biorisk management, and Quality Management system.
- Four hundred and thirteen (413) students trained on SIWES from thirty (30) Higher Institutions of learning across the country.
- Handled one (1) PhD project.

Infrastructure and Facilities

- Solar-powered bore-hole intervention successfully provided at the Livestock markets at Bauchi and Plateau state, toward the control and prevention of livestock and zoonotic diseases.

Human Resources and Staff Development

- The Morbillivirus and Mucosal Disease Section has a staff strength of 9.
- Ten (10) personnel were trained in the Division.

Community Engagement and Outreach

- Successful provision of a solar-powered borehole intervention at livestock markets in Bauchi and Plateau states towards the control and prevention of livestock and zoonotic diseases.

Challenges and Constraints

The division faces the following challenges:

- A need for administrative staff.
- Broken down Computer and accessories.
- No communication systems (Intercom, network, etc).
- Inadequate biosafety and biosecurity system.
- Inadequate reagents for serology and PCR work.
- Old, non-calibrated and faulty equipment.
- Electrical issues from faulty wiring system.

Appendices

Samples Received and Analyzed

i. LIDISKI Samples (Kano State):

Animal species	Positive	Negative	Total
Sheep and Goats	349	309	658

ii. Diagnostic Samples from Suspected Outbreaks:

Animal species	Positive	Negative	Total
Sheep	7	1	8
Goat	24	25	49

B. Viral Skin Disease Section

Samples Analyzed in 2024

Disease Agent	Tissue	Sera	Whole blood	Nasal swab	Environmental sample	Skin scab
LSD	2	1	1	1	0	0
GTPV	5	2	0	0	0	0
SPPV	12	39	5	11	0	0
ORF	0	2	0	0	0	0
BPV	2	1	1	1	0	0
MDV	6	0	0	0	0	0
Horse Pox	1	0	0	0	0	0
Livestock market	0	248	210	58	123	19
Total	28	293	217	71	124	19

Key: LSD = Lumpy Skin Disease, GTPV = Goat Pox Virus, SPPV = Sheep Pox Virus, ORF = Orf Virus, BPV = Bovine Papilloma Virus, MDV = Marek's Disease Virus

C. Avian Disease Research Laboratory

Mandate:

Routine serological diagnosis of Infectious Bursal Disease Virus (IBDV) using Agar Gel Immunodiffusion Test (AGID).

Samples Received and Analyzed:

Sample Type	No. of Samples	Positive	Negative
Sera	28	15	13

34. VIRAL VACCINE PRODUCTION DIVISION

Introduction

The Viral Vaccine Production Division (VVPD) is primary saddled with the responsibility of producing viral-based vaccines for the prevention of livestock and poultry viral diseases of economic and/or public health importance in Nigeria and other West African countries.

In addition, the Division produces distilled water, diluent as well as propagate cell lines and media for use of other Divisions within the institute. Furthermore, in view of the domiciliation of the Freeze Drying and Labelling Machines within the Division, it also renders services such as lyophilization and labelling of vaccines to Bacterial Vaccine Production Divisions.

The Viral Vaccine Production Division which is headed by an Assistant had a Secretarial Office being manned by a Secretary and a Chief Administrative Officer, The Division consists of Seven (7) Technical Sections and Five (5) Support Sections as follows:

Technical Vaccine Sections

1. Anti-Rabies Vaccine Section
2. Fowl pox Vaccine Section
3. Infectious Bursal Disease Vaccine Section
4. Newcastle Disease Vaccine Section
5. Peste des Petits Ruminants (PPR) vaccine Section
6. Lumpy Skin disease (LSD) vaccine Section
7. Sheep/Goat Pox Vaccine (SGPV) Sextion

Vaccine Support Section

1. Machine/Freeze Drying Section
2. Media and Water Distillation Section
3. Quality Control Section
4. Labelling and Vaccine Dispatch Section
5. Wash-Up and Sterilization

The Technical Vaccine Sections produces the following veterinary viral vaccines:

Infectious Bursal Disease Vaccine or IBDV (Gumboro)
Fowl Pox vaccine (FPV)
Newcastle disease vaccine (Hitchner B1-Intra-ocular)
Newcastle disease vaccine (La Sota)
Newcastle disease vaccine (Komarov)
Thermo tolerant Newcastle disease vaccine (NDV I-2)
Low-Egg-Passage (LEP) Rabies vaccine for dogs (ARVD)
High-Egg-Passage (HEP) Rabies Vaccine for Cats (ARVC)
Lumpy Skin disease (LSD) vaccine

Peste des Petits Ruminants (PPR) vaccine
Sheep/Goat Pox Vaccine (SGPV)
Sterile diluents for vaccines

PRODUCTION:

The Division produced **49,531,646**doses of the various veterinary viral vaccines between January and December, 2024. The detailed and a summary of vaccine production in doses for the period by the Division are presented in Tables 1 and Table 2.

Some of the vaccines especially ARVD, FPV, IBDV and NDV uses embryonated fertile chicken eggs from the NVRI poultry Division for their production. The Division produced about **5000**litres of distilled and Milli Q water for its use and that of other Divisions in the Institute. Various cell culture media (GMEM, DMEM, HMEM. EMEM, RPMI, F-12, HBSS) and cell lines in monolayer and suspension including Vero R133, CEF and BHK-21 were also produced for research as well as quality control of viral vaccines and for use in various divisions of the Institute and the two colleges. A culture bank of these same cells is being maintained in liquid nitrogen in the division.

The Freeze-Drying Section also lyophilized vaccines of the Bacterial Vaccine Production Division (BVPD) which include Contagious Bovine Pleuropneumonia (CBPP) vaccine, Fowl Typhoid Vaccine (FTV), and *Brucella* S vaccines for sale to livestock farmers.

Table 1:Summary of Vaccine Production for 2024 (DOSES)

S/No	VACCINES	QUANTITY
1.	ARV	16,561
2.	IBDV	11,702,400
3.	FPV	956,200
4.	NDV-K	4,158,800
5.	NDV-L	14,874,600
6.	NDV-I/O	0,00
7.	NDV-12	8,343,650
9.	PPRV	9,074,950
10	Sheep/Goat Pox	0.00
11.	LSDV	0.00
TOTAL		49,531,646
Diluents (Sterile Diluent: 100ml & 200ml)		8,955 Bottles

NOTABLE ACTIVITIES

- SCADA upgrade and the put to use of the 12,000 capacity Lyofast7.0 Freeze Dryer
- Procurement of potent vaccine Master seeds and new cell-lines for vaccine production
- Adaptation of FPV to primary cell lines for propagation

- Donation of Brand New autoclave machine for the sterilization of vaccine receptacles
- Training of Vaccine production staff at AU-PANVAC
- Grant from UK Foreign Commonwealth and Development Office (FCDO)/Propcom+ for the supply of equipment including Bioreactor, Incudrive Roller system, etc.
- Grant from ICRC for the supply of Bioreactor

CHALLENGES/CONSTRAINTS

1. Constant breakdown of the Freeze Dryers
2. Poor electricity supply which affects virus propagation and limit vaccine drying
3. Poor quality of embryonated chicken eggs
4. Outdated and obsolete production equipment
5. Unavailability and delayed supply of vaccine consumables
6. Shortage of autoclaveable storage and centrifuge Nalgene bottles

FUTURE PLAN

- Increase dose/vial of critical vaccines (cash-cows) in order to drive down cost of vaccines and compete favorably in the market with foreign vaccines
- Procurement of Boifermenters/Bioreactors for the increased production of cell culture-based vaccines
- Procurement of Incudrive Roller Bottle System for PPRV production
- Development of cell culture based anti-Rabies and vaccine
- Perfection of the Cell culture-adapted Fowlpox vaccine (Large scale Safety and potency test)
- Procurement/Sourcing of vaccine master seed for all the vaccines

REPORTS FROM OUTSTATION

1) ABUJA

FUNCTIONS/MANDATE

These included the followings:

a. Disease surveillance/monitoring
b. Vaccine sales/reconstitution/storage
c. Farm visitations
d. Post mortem, sample collection, sample storage and transportation
e. Vaccination, supportive therapy and treatment of ill animals.

Research Activities

The NVRI Abuja Outstation Laboratory reported various activities, collaborations, and achievements during the year under review. These efforts encompassed disease surveillance, diagnostic support, treatment programs, and strategic partnerships aimed at improving animal health and public safety. Worthy of note is the Multi- Locus sequence typing of *Pasteurella multocida* isolates from Cattle in Mararraba town of Nasarawa State.

Reporting and Documentation

Monthly reports were submitted to the former Director of Diagnostic Services, Dr. S. Ngulukun, and subsequently to the new Director, Dr. M.B. Bolajoko. Composite monthly reports were compiled, documenting major diseases treated and key activities conducted at the outstation.

Collaborations and Diagnostic Support

The laboratory worked closely with the Federal Capital Territory (FCT) Veterinary Clinic, the Ministry of Agriculture and Food Security (Research Department), and the University of Abuja to investigate disease outbreaks in various animal species and develop effective solutions. When necessary, samples from unknown outbreaks were sent to the NVRI headquarters in Vom for accurate diagnosis and potential vaccine or biological development. Collaboration with the FCT Veterinary Clinic included major treatments, surgeries, and vaccination campaigns, particularly for Contagious Bovine Pleuropneumonia (CBPP) and Rabies. Staff members participated in weekly and monthly clinical conferences at the FCT Veterinary Clinic.

Vaccine Sales and Farm Visitations

The outstation engaged in vaccine sales, utilizing the proceeds for workspace maintenance. Several farm visitations were conducted, providing veterinary services, disease management, and regulatory compliance inspections.

Key Farm Interventions:

1. Late Air Chief Marshal Alex Badeh's Farm (Nasarawa State)
   - Treatment and vaccination for Contagious Bovine Pleuropneumonia (CBPP).
   - Tick infestation treatment and control.
   - Treatment of Trypanosomiasis in a herd of approximately 120 crossbred Friesian cattle.
2. Alhaji Umar Tela's Farm (Lugbe, Abuja)
   - CBPP vaccination for approximately 100 crossbred Friesian cattle.
   - Peste des Petits Ruminants (PPR) vaccination for about 80 Balami sheep.
   - General farm inspection to ensure regulatory compliance and eligibility.
3. Damsy Poultry Farms (Deidei, FCT)
   - Routine inspections for disease outbreaks in a 6,000-capacity poultry farm (layers and broilers).
   - Routine deworming of the farm's sheep herd.
4. Alhaji Afolabi Solade's Farm (Bwari Area Council, FCT)
   - Routine deworming and tick baths for three adult Rottweilers.
5. Foreign Clients in the FCT
   - Collaborations with international clients, including Australian and Chinese nationals, for thermostable vaccines and veterinary products.
   - Various random vaccinations and treatments throughout the year, with PPR being the most frequently treated disease.
   - Swine Fever was also treated on multiple occasions.

The NVRI Abuja Outstation Laboratory remained committed to providing high-quality veterinary services, disease surveillance, and diagnostic support. Despite challenges, the laboratory's collaborations, strategic interventions, and vaccination programs played a crucial role in maintaining animal health and preventing disease outbreaks within the FCT and surrounding regions.

Capacity Building and Training

The outstation collaborated with the **FCT veterinary clinic** in carrying out major treatments, surgeries, and vaccination campaigns. Staff also attended **monthly and weekly clinical conferences at the FCT veterinary clinic**.

Infrastructure and Facilities

The report mentions the **renovation of the office space provided by the FCT Veterinary clinic** and the **successful connection and payments to AEDC**. However, there are several challenges related to infrastructure, including an **"urgent need for a standard independent NVRI Abuja building that should include at least one standard Laboratory"**. The **main NVRI Laboratory signboard is yet to be placed** due to issues with the host establishment, the FCT vet clinic. There is a **lack of basic laboratory equipment, office furniture, and reagents**. The outstation also lacks **a vehicle for routine laboratory surveillance and ambulatory services**, experiences **frequent power outages and has a non-functional generator**, and lacks **internet facilities for E-filing of reports and virtual meetings**.

Human Resources and Staff Development

A **new Veterinary Investigation Officer, Dr Khadija O. Gambari,** was appointed by the Director/Chief executive on **October 16th, 2024**, taking over from **Dr Ishaya Agang,** who was posted to the headquarters at Vom.

Community Engagement and Outreach

The outstation engaged in **farm visitations**. These included treating and vaccinating cattle at the late **Alex Badeh's Farm** in Nasarawa State, conducting **Contagious bovine pleuropneumonia vaccinations** and **Peste des petits ruminants (PPR) vaccinations at Alhaji Umar Tela's farm** in Lugbe, Abuja, along with a general farm inspection. Routine inspections for outbreaks and deworming of sheep were carried out at **Damsy Poultry Farms** at Deidei. **Three adult Rottweilers** belonging to **Alhaji Afolabi Solade** at the Bwari Area Council of the FCT were routinely dewormed and given tick baths. The outstation also **collaborated with some foreign clients in the FCT** (an Australian and a Chinese client) regarding thermostable vaccines and veterinary products. Other random vaccinations and treatments were carried out throughout the year, with PPR being the most frequent. The outstation also worked in **collaboration with the FCT Veterinary Clinic** on routine disease surveillance activities and treatments and in determining the causes of outbreaks with the **Ministry of Agriculture and Food Security- Research department** and the **University of Abuja.**

Challenges and Constraints

The outstation faces several challenges, including an **urgent need for a standard independent NVRI Abuja building with a laboratory**. The **NVRI Laboratory signboard has not been installed** due to issues with the host FCT vet clinic. There is a **lack of basic laboratory equipment, office furniture, and reagents,** as well as a **lack of a vehicle** for routine work. **Frequent power outages and a non-functional generator**, along with a **lack of internet facilities**, also pose significant constraints.

The report also mentions that **sales of Vaccines and Biologicals** came with certain challenges during the time of the predecessor, although these are being addressed.

Future Plans and Recommendations

The report expresses the outstation's continued commitment to the mandate, vision, and mission of NVRI. It implies a future focus on addressing the challenges related to vaccine sales and the need for improved infrastructure and resources. The ongoing collaborations and routine activities are also likely to continue.

2) BAUCHI

FUNCTIONS/MANDATE:

i. Animal Disease surveillance.
ii. Vaccine sales.
iii. Laboratory Diagnostic Services (Parasitology, Bacteriology, Haematology).

a. ROUTINE ACTIVITIES CONDUCTED IN THE LABORORY:

i. Clinical examination and management of sick animals and apparently healthy animals (Disease management, surgeries, vaccinations, etc.).

ii. Laboratory diagnosis of samples presented for disease investigation (Bacteriology, parasitology and basic haematology).

iii. Postmortem examination of carcasses presented for disease investigation.

iv. Sale of vaccines.

v. Animal disease surveillance on important reportable diseases through samples collection, storage, packaging for referral of samples to Central Diagnostic Laboratory Division, NVRI Vom.

vi. Ambulatory services in poultry, nomadic and institutional farms.

vii. Training of students from higher Institutions on Students' Industrial Work Experience Sheme (SIWES).

viii. Collaboration with Wildlife Conservation Society (WCS), Africa Nature Investors (ANI), EKORE, WAC-EID, LIDISKI projects, Bauchi and Gombe State Governments on Research activities, Training of CAHWs, vaccines procurement and sales to rural farmers and animal disease surveillance.

b. ACHIEVEMENTS:

i. Maintenance of solar panels/accessories installed by LIDISKI project.

ii. Ninety-eight (98) SIWES students trained from 9 Higher Institutions acros the country.

iii. Eight hundred and eighty-eight (888), veterinary samples diagnosed for both feacal and blood parasites.

iv. Three hundred and sixty-two (362) veterinary samples diagnosed for bacterial parasites.

v. Total of vaccines (Canine, Bovine and Avian) sold were Twenty-six thousand, nine hundred and forty two (26, 942) vials.

vi. Procurement of Laboratory equipment and reagents for Parasites and Bacteria diagnosis/research.

vii. Procurement of 75 AM Battery for Generator.

viii. Maintenance of generator and other office and laboratory equipment.

ix. Constant payment of water and light bills.

x. Reconstruction of one section of collapsed office complex perimeter fence.

xi. Construction of metal water tank stand, procurement and installation of water pump and 2000L Geepee water tank.

c. RESEARCH HIGHLIHGTS:

i. Wildlife conservation research activities including population survey, disease surveillance and health management.
ii. Collaboration with researchers from Abubakar Tafawa Balewa University Teaching Hospital Bauchi, on one health approach to research activities on Lassa Fever.
iii. Collaboration with WAC-EID and FAO on MPOX surveillance in rodents and bush meat markets.
iv. Active participation in LIDISKI Research Project in Bauchi State.

v. Participated in the Livestock market project in Nabordo Market Bauchi State, with solar powered borehole drilled in the market with improved hygiene and sanitation practices among value chain actors in the Market.

d. CHALLENGES:

i. Pending second section of collapsed office complex perimeter fence.

ii. Lack of autoclave and other laboratory reagents.

iii. One staff quarter and 2 boys' quarters not in good condition, still having asbestos roof with leakages.

3) CALABAR

FUNCTIONS AND MANDATES

The major function of the Calabar outstation laboratory is to contribute significantly to the Institute's role as a national and regional laboratory for avian influenza and other trans-boundary animal diseases for West and Central Africa by conducting ambulatory services to farms, diagnosis of emerging and re-emerging diseases and surveillance activities.

SPECIFIC ACTIVITIES

1. Assisted in the collection of samples from rodents by team of veterinary doctors from NVRI Vom in January, 2024.
2. Assisted in the collection of samples from bats by team of veterinary doctors from NVRI Vom in May, 2024.
3. Participated in the Campaign on "*the need to vaccinate dogs against rabies"* in commemoration of the World Rabies Day September, 2024.
4. Participated in the flag off of Foot and Mouth disease vaccine administration by the Cross River State government in October, 2024.
5. Visited poultry farms, piggery farms and cattle market for consultancy services.
6. Collected blood samples from cattle, goats and sheep from different abattoirs in Calabar Municipality.
7. Administrationvaccines to poultry birds in Calabar Municipality against fowl pox, fowl typhoid, and Gumboro.
8. Carried out post-mortem on chicken carcass.

ACHIEVEMENTS

1. Participation in the campaign on rabies vaccination.
2. Repair of solar system inverter.
3. Teaching of SIWES students on industrial attachments.
4. Connection of electricity to the laboratory.
5. Connection of pipebone water to the laboratory.

CHALLENGES

1. Lack of standard laboratory settings.
2. Lack of tables and chairs in the offices.
3. Lack of provision of protective wears for the workers e.g. Rain boots, Laboratory coats, hand gloves, nose mask etc.

REQUIREMENTS

1. Lack of tables and chairs in the offices.
2. Lack of protective wears for workers. (Lab coats, nose mask, hand gloves)
3. Lack of disinfectant

Vaccines collected for the year 2024

FTV	5000 VIALS
NDVL	1000 VIALS
NDVK	1000 VIAL
IBDV	1000 VIALS
FPV	NIL
CBPPV	100 VIALS
HANTAVAC	50 VIALS
BLACKQUARTER VACCINES	50 VIALS
NDVi/o	Nil

4) IBADAN

Research Activities

Our laboratory performed clinical and diagnostic services (especially Necropsy) for poultry farmers in the course of the year 2024. Farm visits were also made based on farmer's request. Disease surveillance and sample collection were done in collaboration with the Oyo State Epidemiology Unit. Samples collected were sent to Vom for confirmation. Samples brought directly by farmers were also sent to Vom for confirmatory diagnosis. The laboratory was involved in collaborative work between NVRI and Oyo State epidemiology unit in disease surveillance and awareness campaign of Rabies and African swine fever. We also participated in Mpox surveillance and sample collection in Ogun state after an outbreak in September.

Capacity Building and Training

The laboratory conducted a lecture for FGBMFI members on Rabies, Anthrax, Mpox and IPC. They also provided extension services.

Infrastructure and Facilities

Although some facilities are available, they remain underutilized due to inconsistent power supply, a shortage of essential reagents, and a lack of trained laboratory technical staff. As a result, microbiological work and related services have been hindered. To enhance operations,

the laboratory requires the provision of microbiology reagents and chemicals, additional technical staff (such as a Laboratory Scientist or Technologist), and a reliable power source, such as a generator or solar panel.

Human Resources and Staff Development

The laboratory needs Lab. technical staff (a Laboratory Scientist/Technologist).

Community Engagement and Outreach

The laboratory offered extension services and conducted farm visits upon farmers' requests. It also collaborated with the Oyo State Epidemiology Unit on an awareness campaign focused on Rabies and African Swine Fever. Additionally, the laboratory hosted a lecture for FGBMFI members on topics including Rabies, Anthrax, Mpox, and Infection Prevention and Control (IPC). Furthermore, the laboratory was involved in the sale and distribution of vaccines.

S/No	Type Of Vaccines Sold	Quantity (Vial /Bottle)
1	Newcastle Disease vaccine Lasota (200)	634
2	Newcastle Disease Vaccine Lasota (500)	300
3	Newcastle Disease Vaccine Komorov (200)	131
4	Infectious Bursa Disease Vaccine - Gumboro (200)	130
5	Fowl Pox Vaccine	199
6	Peste des Petits Ruminants (PPRV) (50)	50
7	Contagious Bovine Pleuropneumonia (CBPP) (100)	43
8	Foot and Mouth Disease Vaccine (FMDV) (50)	31
9	Lumpy Skin Disease (LSDV)- (50)	12
10	Haemorrhagic Septicemia Vaccine	4
11	Lumpy Skin Disease vaccine	6
12	Brucella (BSV)	2
13	Lamstreptocide (1L)	7

Challenges and Constraints

The laboratory faces challenges due to inconsistent power supply, a shortage of necessary reagents, and a lack of qualified technical staff. These issues have hindered the ability to carry out any microbiological work or services at the laboratory.

Future Plans and Recommendations

The laboratory would greatly appreciate the provision of microbiology reagents and chemicals, a laboratory technician or technologist, and either an electrical generator or solar panel. These resources will enhance service delivery to clients and farmers and help fulfill the core mandate of the institute in this region.

5) ILORIN

FUNCTION/MANDATE

- Diagnosis of livestock diseases
- Investigation of livestock disease outbreaks
- Collection and distribution of vaccines
- Extension services for farmers
- Any other duties assigned by the Director, D&OL

Research Activities

The laboratory is responsible for diagnosing and investigating livestock diseases. In 2024, disease diagnoses were conducted through necropsies and farm visits. Key avian diseases identified included chronic respiratory disease, heat stress, fecolithiasis, infectious bursal disease, septicemia, management-related issues, mixed infections, and nutritional deficiencies.

Capacity Building and Training

Extension services to farmers.

Infrastructure and Facilities

The diagnostic capacity of the laboratory needs improvement. There is also a dilapidation of the laboratory infrastructure. The laboratory experiences persistent burglary attacks and lack of a security guard. The laboratory also faces issues with water supply.

Human Resources and Staff Development

A laboratory scientist staff is needed.

Community Engagement and Outreach

The laboratory provides extension services to farmers and conducts farm visits for diagnosis. The laboratory is also involved in vaccine collection and distribution. Specifically, in poultry, NDVK (350 Vials) and NDVL vaccines were distributed, and in bovine, CBPP (300) and ASV (165) vaccines were distributed.

Challenges and Constraints

The laboratory faces several challenges, including:

- Diagnostic capacity of the laboratory needs improvement
- Dilapidation of the laboratory infrastructure

- Laboratory scientist staff is needed
- Water supply
- Persistent burglary attack
- Lack of security guard

6) JALINGO/TARABA

FUNCTIONS/MANDATE

The 2024 annual report of the NVRI-VOM Jalingo Outstation Laboratory emphasized the laboratory's dedication to delivering high-quality diagnostic services, supporting disease surveillance, and contributing to the overall enhancement of animal health within its jurisdiction. The report conveyed appreciation to the NVRI-VOM Executive, the Taraba State Government, local authorities, and other stakeholders for their continuous support and collaboration. It also recognized the dedication and hard work of the laboratory staff in fulfilling the institution's mandate.

Infrastructure and Facilities

The laboratory structure is in a dilapidated state, hindering its ability to provide optimal services. There is an urgent need for renovation or a new building to ensure a safe and efficient working environment. (**Fig.1**).

Human Resources and Staff Development

The laboratory staff are acknowledged for their dedication and hard work, without whom the achievements would not have been possible.

Community Engagement and Outreach

The laboratory conducted regular visits to abattoirs in the state, performing both ante-mortem (AM) and post-mortem (PM) inspections. These inspections identified the presence of various diseases, including:Contagious Bovine Pleuropneumonia (CBPP), Bovine Tuberculosis, Foot and Mouth Disease (FMD), Helminthiasis, among others (**Fig. 2**).These activities contributed to disease surveillance and monitoring, which benefits the wider community by preventing the spread of diseases.

Outbreak Report: Haemorrhagic Septicemia in Sardauna Local Government

During the reporting period, the laboratory responded to a significant outbreak of Haemorrhagic Septicemia in Sardauna Local Government Area of the state. The outbreak was first reported on July 23, 2024, in Kari Ahmadu's herd, which consisted of 150 cattle, of which 60 mortalities were recorded. The epicenter of the outbreak was identified in Mayo Solare, Dorafi. Blood samples were collected and sent to the Central Diagnostic Laboratory at NVRI VOM, where laboratory analysis confirmed a positive diagnosis of Haemorrhagic

Septicemia. In response, the laboratory collaborated with local authorities and international organizations, including the Food and Agriculture Organization (FAO), to contain the outbreak. Efforts included providing diagnostic support, conducting vaccination campaigns, and offering technical guidance to mitigate further spread of the disease.

Challenges and Constraints

The laboratory faces significant challenges, including inadequate infrastructure due to its dilapidated state. There were also vaccine supply shortages, particularly for Contagious Bovine Pleuropneumonia (CBPPV), which compromised the ability to effectively control and prevent the spread of CBPP in the state. The laboratory also had to respond to a significant outbreak of Haemorrhagic Septicemia.

Future Plans and Recommendations

The laboratory remains committed to supporting animal health and disease control efforts in the state. The report recommends that the relevant authorities:

- Provide support for the renovation or construction of a new laboratory building.
- Ensure a consistent and reliable supply of vaccines, particularly CBPPV.
- Enhance disease surveillance and monitoring efforts to prevent the occurrence and spread of diseases. The laboratory looks forward to continuing its work in supporting animal health and disease control efforts in the state.

Figure 1: Dilapidated infrastructures in the NVRI Jalingo outstation.

Figure 2: Gross pathological findings from diseased animals examined in the abattoir.

7) KADUNA

A. Function / mandates of Kaduna laboratory

To conduct disease surveillance and investigation, disease diagnosis, conduct research on animal diseases, provide extension services to farmers within our areas of jurisdiction and distribution and sales of N.V.R.I vaccines and other products to local farmers and clients.

B. Specific notable activities

- Conducted passive surveillance on PPRfrom sheep and goats in selected local government areas in Kaduna State, in collaboration with the Kaduna State Ministry of Agriculture. Samples from suspected cases were sent to the Headquarters in Vom for laboratory testing.
- Embarked on passive surveillance on African swine fever in different local government areas of Kaduna State.
- Collaborated with an NGO (LIVESTOCK 24) based in Abuja; to investigate cases of Food and Mouth disease, a suspected sample was sent to the FMD lab in Vom for definitive diagnosis and one case was confirmed positive.

C. Achievement;

1. Successful surveillance of PPR in small ruminants in Kaduna State
2. Successful surveillance of ASF and FMD in Kaduna state yielded positive result.
3. Twenty-four cases of animal diseases were diagnosed from 4 species of animals with 14 different animal disease diagnosed.
4. Sales of Vom vaccines worth eleven million five hundred and eighteen thousand four hundred and fifty thousand naira (**N11,518,450)** only.
5. Routine farms visitations and extension services was carried out in the period under review.

Table 1: Cases diagnosed in 2024 at the Kaduna Lab.

S/No.	Animal specie	Disease diagnosed	Number of cases diagnosed and or reported
1	Bovine	Food and mouth disease	1
2	Caprine	PPR	1
3	Caprine	Babesiosis	1
4	Caprine	Staphylococosis	1
5	Canine	Helminthosis	2
6	Canine	Canine rabies	3
7	Canine	Canine Babesiosis	5
8	Canine	Mange	2
9	Canine	Hematoma	1

10	Canine	Fleas bite dermatitis	1
11	Avian	Infectious bursal disease	1
12	Avian	Chronic respiratory disease	2
13	Avian	Egg drop syndrome	1
14	Avian	Ascariasis	2
TOTAL	4	14	24

S/No	**Recipient specie**	**Type of vaccine**	**No of vials/bottles**	**No of doses**
1	Bovine	HSV	506	20,240
2	Bovine	BQV	60	30,000
3	Bovine	CBPPV	1,430	143,000
4	Bovine	HTV	50	2,000
5	Bovine	FMD	1	50
6	Caprine/ovine	PPRV	560	56,000
7	Avian	NDVi/2	1,200	80,000
8	Avian	NDVL	880	176,000
9	Avian	IBDV	547	109,400
10	Avian	FPV	79	15,800
11	Avian	FTV	1,044	104,400
12	Avian	NDVK	609	121,800
13	Canine	ARVD	1,120	1,120
TOTAL	**4**	**13**	**8,086**	**589,810**

Table 2: Vaccine's sales in 2024 at the Kaduna Lab

D. Challenges:

1. Lack of water supply to the office: Water supply to the entire neighborhood where our office is located has been cut off by Kaduna State water board, this has posed a serious challenge and set-back to our activities.
2. Lack of utility vehicle for field work; smaller personal vehicles are used for any field work at personal cost to the staff.
3. The security challenges especially banditry and kidnappings have affected routine disease investigation, farm visitation and other field work activities.
4. Lack of office furniture for staff.

E. Research highlights: Specific research work is ongoing by various staff through their various postgraduate trainings. One of such is trying to look at the effects of some trace

elements in the modulation of certain diseases in poultry. Also, there are collaborative research works with some researchers in the headquarters in bovine and avian species.

8) KANO ZONAL LABORATORY

Introduction

Kano Outstation Laboratory is located inside Kundila Veterinary Hospital, along zaria road, Unguwaukku in the Kano metropolitan city of Kano State. The laboratory was commissioned 41 years ago with the aim of bringing the activities of National Veterinary Research Institute closer to the farmers and the community. The laboratory then became a zonal office coordinating the activities of kano, kaduna, katsina and jigawa states. The mandate of the laboratory are disease surveillance, diagnosis, treatment and control as well as providing extension services to livestock and poultry farmers. The outstation is also responsible for collection and distribution of vaccines and other biological to the farmers and qualified personnel.

Current Staff strength as at December 2024

S/No	Staff Name	Date of First Appointment	Qualification	Designation	Schedule of Duty
1	Sada Aliyu	22nd April 2008	PhD. Vet. Microbiology	CVRO	Animal disease surveillance, Diagnosis and reporting. Extension services, Administration
2	Abdulsalam Maryam	I8th July, 2022	DVM	Snr. Vet. Research Officer	Disease surveillance, Diagnosis and Reporting
3	Sadiq M. Idris	1st April 2010	HND Animal Production	ACAHHT	Extension services, Vaccine Handling, Hatchery management
4	Umar Frida Abdulhamid	1st July, 2019	SLT	SSLT	Laboratory Analysis and reporting
5	Shuaibu Bala Hafsat	14th November 2017	MLT	HMLT	Laboratory Analysis and reporting
6	Abdullahi Buhari Usman	6th January, 2015	MSc. Management	SADO	Record and Administration
7	Awalu S. Ibrahim	14th May 2010	S.S.C.E	CLO	Laboratory cleaning

- **Summary of Activities for the Year 2024**

We have conducted disease surveillance through visitations to abattoir, veterinary clinics, livestock farms and poultry farms. Also, forty two (42) carcasses were received for post-mortem examination in the laboratory (40 chickens and 2 goat carcasses). We have also provided extension services through ambulatory visitations to 11 different farms, about 39 visitations.

NOTE: Laboratory investigation (Analysis) of samples were not conducted in the Kano laboratory in the year under review and this was as a result of the devastating challenge of massive water flooding experience in the year 2024.

The laboratory has participated in some of the institute-based research projects which included:

1. NACOH Project: About 300 camel and 150 bovine pooled samples (sera, plasma, lymph node, lungs) were collected in Kano central abattoir and Maigatari international livestock markets in the year 2024.

2. FAO-FMD Mobility Study: About 300 cattle and 150 small ruminant sera samples were collected at Maigatari international livestock market for FMD mobility study.

3. LIDISKI Project: Eighty (80) villages in Kano State were sampled for PPR and Newcastle diseases active survey, were blood samples were collected for screening of the above mention diseases. This was followed with Participatory epidemiology (PE) and Socio-economic (SE) survey in 10 selected communities among the eighty sampled already. And these were conducted successfully in the year 2024.

The laboratory in collaboration with some staff from the institute (Dr. Ishaku Leo Elisha from Drug Deployment Division and Hafsat S. Jagab from Biotechnology Division) conducted a 3day step-down training on biological risk management to the staff of the laboratory and staff of other institutions in Kano State. And these included: Aminu Kano Teaching Hospital; Abdullahi Wase Teaching Hospital; Murtala Muhammad Specialist Hospital; Bayero University Kano, Gwale Veterinary Laboratory and Humane Diagnostic and Nutritional Laboratory, Kano.

The laboratory staff have participated in several trainings in the institute, both physical and virtual trainings some of which include: Sandia Trainer Development in Lagos; LIDISKI PE and SE training at NVRI Vom; Zoonotic and Tran-boundary Animal Disease training by Livestock International (USAID); FAO-FMD Sampling and Laboratory Diagnostic training at NVRI Vom; Quality Management System (QMS NVRI) virtual trainingBY DTRA; Biorisk Management virtual training; Sample Shipment training at NVRI Vom; LIDSKI Close-out workshop in Abuja.

- **Vaccine Supply and Distribution 2024**

Vaccines were supplied to the laboratory for distribution to Farmers and Agrovet dealers in Kano and Jigawa States. And these also included supply to the State Governments for their annual mass vaccination campaigns.

S/No	Vaccine Type	Quantity (Vials)	Quantity (Doses)	Remarks
1	CBPPV	7600	760,000	Included purchased by State Govt.
2	PPRV	6150	607,500	Included purchased by State Govt.
3	FMDV	100	5,000	Included purchased by State Govt,
4	ASV	250	100,000	Included purchased by State Govt.
5	HSV	250	10,000	
6	HANTAVAC	150	6,000	
7	BQV	200	20,000	
8	LSDV	2	100	
9	NDV-Lasota	2450	520,000	
10	NDV-I2	6200	320,000	
11	NDV-Komarov	300	60,000	
12	IBDV	2500	500,000	
13	FTV	3000	300,000	

- **CHALLENGES**

1. Vaccines Storage Capacity: Despite huge volume of vaccines that flowed in to the laboratory in the year under review, there is inadequate functional refrigerators and freezers for vaccine and other biological storage in the laboratory.

2. Laboratory Equipment: Lack of functional laboratory equipment is another major problem faced by the laboratory to perform adequately.

3. Water flooding: The devastating water flooding continued to be experienced in the laboratory over the years. It is more devastating in the year under review which makes the laboratory inaccessible from July to October (4 months). Leading to shutting down of all activities within the period.

9) KATSINA

FUNCTION/MANDATE

1. Collection/sending of animal samples to central diagnostic laboratories

   for confirmatory diagnosis

2. Sales of vaccines produced by NVRI to farmers and veterinarymedicinestores.
3. Enlightening farmers, pet owners, veterinarians, and general public on proper use of NVRI vaccines and other products produced by the Institute
4. Animal disease research
5. Disease diagnosis and treatment through clinical sign and post-mortemlesion examination
6. Offering veterinary services to poultry and livestock farmers
7. Training of IT students from various Institutions.

Specific activities

1. We send 10 samples to central diagnostic laboratories for confirmatorydiagnosis.
2. We handled 125 postmortem cases in poultry, and 2 postmortem in large animal
3. We visited 19 farms and trained them on how to use our vaccinesfor their animals.
4. We took part during the katsina state annual vaccination 2024
5. We trained 15 IT students from various Institutions

Achievements

1. Sale of Vaccines: CBPP (1000), NDVI2 (2500), HSV (300), Fowl pox (1067), NDV (1000), BQV (20), IBDV (3200), Lasota (3500), FTV (1070), PPRV (1300), Hanta (1000)
2. We bought a centrifugation machine and ceiling fan
3. We maintained our solar system.

Challenges

1. Inadequate laboratory equipment and reagents
2. Inadequate number of staff (only 2 staff in Katsina outstation at the moment)

10) LAGOS

A. FUNCTIONS/MANDATE

1. Diagnosis, treatment, and management of animal diseases in households and farms across Lagos and its surrounding areas (Ogun State).

B. SPECIFIC ACTIVITIES

1. The following diseases (as cases) were attended to at the clinic section of the laboratory for the year 2024.

Cases	Subtotal
Anti-Rabies vaccination	12
DHLPP vaccination	13
Helminthosis/Deworming	48
Parvo Viral Enteritis	18
Myasis in dog	11
Tick fever in dog	9
Poisoning	2
Cystitis	1
PPR	1
Pox	2
Allergy	1
Mange	2
Growth/Lump	1
Others	33
Total	**154**

KEY:

Others- Septicemia, Canine Cough, Abscess, Mechanical injuries, Inflammations etc

2. Samples from suspected cases were collected from animals in some affected farms and animals in Lagos and Ogun states and transported to central diagnostic laboratory at headquarters (NVRI, VOM) for confirmatory diagnosis.

Below is the summary of samples that were collected and sent to Central Diagnostic Laboratory, NVRI, Vom.

MONTH	DISEASE SUSPECTED	SPECIE	TYPE OF SAMPLE	LOCATION LAGOS STATE	LOCATION OGUN STATE	TOTAL
JAN	RABIES	CANINE	HEAD (BRAIN TISSUE)	1	-	1
FEB	-	-	-	-	-	-
MAR	AHS	EQUINE	TRACHEAL(1),LIVER(1),HEART(1),SPLEEN(1), KIDNEY (1),INTESTINE(1), ESOPHAGUS (1)	7	-	7
	ANTHRAX SURVEILLANCE (FMARD)	BOVINE CAPRINE OVINE	BLOOD (11) BLOOD (12) BLOOD (13) SOIL (2) WATER (10)	48	-	48
APR	CBPP	BOVINE	NASAL SWAB (115), TISSUE (1)	-	116	116

MAY	-	-	-	-	-	-
JUN	-	-	-	-	-	-
JUL	ASF BRUCELLOSIS ANTHRAX SCREENING	PORCINE BOVINE BOVINE OVINE	PLAINBLOOD(12), BLOOD EDTA (12), NASAL SWAB (5), INTESTINE (2), WATER (2) SOIL (1) SERA SERA SERA	 - 25 20	34 75 - -	34 75 25 20
AUG	-	-	-	-	-	-
SEP	RABIES	BOVINE	BRAIN (1), BLOOD (1)	-	2	2
OCT	PPR	CAPRINE	SERA		38	38
NOV	-	-	-	-	-	-
DEC	-	-	-	-	-	-

3. Liaised with the department of Veterinary Services through the Director of Veterinary Services (DVS Lagos) on Active and Passive surveillance of animal diseases in Lagos and environs.
4. Collaborated with the FMARD in conjunction with Lagos state Veterinary department in carrying out a post-outbreak Anthrax surveillance across the state.
5. Collaborated with the NVRI Mpox surveillance team in carrying out a surveillance on Mpox in Lagos state.

C. ACHIEVEMENTS

Due to the increased presence and contribution of NVRI Lagos during disease outbreak investigations in the state, the lab has become a vital part of the Lagos state One-Health Surveillance Team.

D. CHALLENGES

Ambulatory Services – The majority (approximately 90%) of epidemiological responses occur in the outskirts of the state. These areas, such as Oke-Aro (approximately 48 km from the office), are often distant and characterized by poor road networks. The provision of a rugged ambulatory vehicle would significantly enhance the ability to address these challenges effectively.

E. RESEARCH HIGHLIGHTS

Active involvement in field sample and data collection for various researches such as Mpox, Anthrax and African Swine Fever (ASF).

F. RECOMMENDATIONS FOR CONTINUOUS PROFESSIONAL GROWTH

Training and upgrading of skills in relevant fields.

Activities during Mpox surveillance in Lagos

11) MAIDUGURI

A. FUNCTION/MANDATES OF THE DIVISION

1. Conducting Research on Animal Diseases.
2. Diseases Surveillance and Diagnosis.
3. Disposition of NVRI products tolivestock and Poultry farmers.
4. Provide Extensions Services to Livestock and Poultry farmers.
5. Collaboration with the key stakeholders in the field of Animals health and production.

B. ACTIVITIES1. Sampling

Over three hundred samples were sent to Vom headquarter for NACOH and USDA Projects Facilitated by Regional Lab and others. The samples included serum,nasal swabs, ectoparasites and tissue samples.

2. Vaccines sales report for 2024

S/N	MONTH	NCDV (L)	CBPP	BQV	NDV I2 (50D)	HSV	HANTAVAC
1	JANUARY	14	-	8	500	-	8
2	FEBUARY	-	-	4	300	-	-
3	MARCH	-	-	27	-	-	-
4	APRIL	-	-	-	300	-	-
5	MAY	-	10	-	-	-	-
6	JUNE	-	-	-	-	50	-
7	JULY	-	10	-	-	-	-
8	AUGUST	-	-	45	-	50	39
9	SEPTEMBER	-	-	-	-	-	-
10	OCTOBER	-	-	-	-	-	-
11	NOVEMBER	-	-	-	-	-	-
12	DECEMBER	-	-	-	-	-	-
TOTAL		14	20	101	2100	100	47

C. ACHIEVEMENT:

Collaboration with Borno State Ministry Agric and ICRC to carry out mass vaccination against PPR, ASV and CBPP in some selected local government areas of Borno state during the year.There was also capacity building training attended by our staff during the year.

D. CHALLENGES:

- Due to the flood that affected parts of Maiduguri,the lab was seriously affected. The cold-chain facility, lab equipment, files, and furniture were destroyed. The integrity of the building was also affected.

- Lack of proper fencing.
- Erosion created a large ditch in the lab premises due to proximity of the office structure to the stream of River Ngadda.
- Lack of water supply.
- Lack of Staff Quarters.
- Lack of access to rural areas due to insecurity.
- Lack laboratory consumables

12) MAKURDI

FUNCTIONS/MANDATES

a. Disease surveillance/monitoring
b. Vaccine sales/reconstitution/storage
c. Farm visits
d. Postmortem examination, sample collection, sample storage and transportation
e. Vaccination and treatment of diseased animals

Specific Activities

a. Submission of monthly reports to the Director in charge
b. Sale of vaccines: Ndvi, Gumboro, Lasota, PPR,Fowltyphoid, HSV, Hantavac, Komorov, Fowl pox, FMD, Antirabies, Lepstroptocides, Anthrax, within Benue and Nasarawa States
c. Collection of blood and tissue samples from goats, sheep and pigs which were positive for Brucella and ASF
d. A one-week training on Global Partnership for Animal and Zoonotic Diseases Surveillance (GPAZDS) Project and online training on biosecurity by DTRA
e. Through a Grant from WAC-EID in collaboration with NVRI, we collected 600 blood samples/nasal swabs from sheep, goats and pigs in Benue State. We also set traps to capture 130 domestic/wild rats from which organs like heart, lungs, liver, spleen, intestines, head, oral and rectal swaps will be taken for analysis.

Achievements

a. Wehaveworkedincollaborationwith State Governments, private clinics, and veterinary practitioners to collect samples from disease animals to reduce losses to farmers
b. We sold vaccines to vendors and veterinary clinic in Benue, Nasarawa, and Cross river States
c. We bought five (5) rubber chairs to replace the broken ones
d. A solar inverter (10 KVA), and durable dry cell battery was installed in our outstation to address the problem of cold storage.

Challenges

a. Non-functional laboratory equipment and reagents
b. Poor water supply

13) OJI RIVER

A. MANDATE OF THE LABORATORY

- Provision of surveillance and diagnosis of animal diseases.
- To conduct research in all aspects of animal diseases, their treatment and control.
- To provide extension services to poultry and livestock farmers.

B. SPECIFIC ACTIVITIES IN 2024

Within the year, we sent a whole poultry carcass that yielded the results below

- Parasilology – Eimeniaspp +++
- Bactenology – E coli, sensitive to Gentamycin and Ciprofloxacin, Resistant-Doxycline.Proteus spp: Sensitive to Gentamycin and Ciprofloxacin, Resistant to Doxycyline
- VirologyDDS 2024 AV/435 VRD/24/111 was negative for AIV and NDV.

Series of staff training by International Organizations on modern and digitized working in laboratories.

C. ACHIEVEMENTS

- Staff members were trained by Federico. Verily on PPR Control, strategies, epidemiologyand detection using serology and molecular diagnosis – 21/2/2024.
- General laboratory workshop by Learnupon on Biosecurity and Biosafety on Biorisk Management 22-25/4/2024.
- Synchronous training on Biosecurity and Biosafety 4/6/2024.

D. CHALLENGES

- Within the year, the following vaccines were requested but none were supplied.

Vaccines	Requested	Supplied
Newcastle disease Vaccines	200	-
Infectious bursal disease vaccine	200	-
Anti Rabies vaccine	100	-
Pestes des petit Ruminants	10	-
Contagious BorinePleuro pneumonia	5	-
Total	**515**	

- Lack of conducive working environment such as equipment, reagents, water and light.

- The building housing the laboratory has been sold. Therefore, a quit notice was issued on 8th November 2024.
- Increasing insecurity, kidnapping and constant killing innocent citizens by unknown gunmen have kept many people to live in fear.
- Enforcement of sit at home on Mondays by Indigenous People of Biafra (IPOB) and unknown gunmen in the South east has aggravated the security situation.

E. SUGGESTED WAY FORWARD

- Relocation of National Veterinary Research Institute, Oji River Office to Enugu.
- Provision of the basic operating tools as freezers, refrigerators, equipment, reagents and Biosafety cabinets.
- Engaging the services of private security guards and NigeriaSecurity and Civil Defense Corps, Neighborhood watchguards to guard the office.
- Continue with the regular training of staff to update them in the most modern and sophisticated digitalized equipments.
- Provision of Vaccines to farmers.

14) PORTHARCOURT

Functions/Mandate

The division's functions include **necropsy, epidemiology, bacteriology, clinical pathology, histopathology, and rabies diagnosis**.

The laboratory plays a crucial role in supporting the Institute's function as a national and regional diagnostic center for Avian Influenza, Foot and Mouth Disease (FMD), and other transboundary animal diseases in West and Central Africa. Its activities include conducting ambulatory services for farmers, diagnosing emerging and re-emerging diseases, and carrying out disease surveillance.

Research Activities

The division is actively involved in diagnosing emerging and re-emerging diseases, as well as conducting disease surveillance. In 2024, key activities included a workshop on the use of laboratory equipment and instruments. Additionally, the laboratory facilitated training for veterinary doctors and other animal handlers on sample collection and processing in collaboration with the Veterinary Department of the Rivers State Ministry of Agriculture.

Surveillance efforts were enhanced for transboundary diseases such as Foot and Mouth Disease (FMD) in cattle, Peste des Petits Ruminants (PPR), and African Swine

Fever (ASF). The division also contributed to One Health initiatives by partnering with the Rivers State Ministry of Health to develop strategies for the prevention and control of Avian Influenza.

Capacity Building and Training

In collaboration with the Veterinary Department of the Rivers State Ministry of Agriculture, the laboratory facilitated training for veterinary doctors and other animal handlers on proper sample collection and processing. This initiative has increased awareness among veterinary professionals and animal handlers about the importance of adhering to strict protocols for sample collection and processing.

Additionally, public education efforts have led to a greater willingness among pet owners to vaccinate their pets against rabies. More farmers are also becoming aware of the risks associated with unregulated and unsafe Avian Influenza vaccines, making them more open to safer and approved alternatives.

Infrastructure and Facilities

The outstation laboratory lacks essential equipment required for a BSL-1 laboratory, including a functional microscope, reagents, and other diagnostic tools. Additionally, the laboratory faces ongoing security challenges at its location within the ADP premises in Rumuodomaya, with frequent theft of office fittings such as window louvers and plumbing pipes, even after replacements.

Community Engagement and Outreach

The laboratory provides ambulatory services to farmers and actively engages in public education. As a result, more pet owners are now seeking rabies vaccinations, and farmers are increasingly willing to discontinue the use of unsafe avian influenza vaccines. Additionally, the laboratory collaborated with the Rivers State Ministry of Health to develop strategies for the prevention and control of avian influenza.

Challenges and Constraints

The outstation laboratory lacks essential equipment required for a BSL-1 facility, including a functional microscope, reagents, and other diagnostic tools. Additionally, the laboratory faces ongoing security challenges at its location within the ADP premises in Rumuodomaya, with repeated theft of office fittings such as window louvres and plumbing pipes, even after replacements.

15) SHENDAM

FUNCTION/MANDATE

1) Collection/sending of animal samples to central diagnostic laboratories for confirmatory diagnosis
2) Sales of vaccines produced by NVRI to farmers and veterinary medicine stores
3) Enlightening farmers, pet owners, veterinarians, and general public on proper use of NVRI vaccines and other products produced by the Institute
4) Animal disease research
5) Disease diagnosis and treatment through clinical sign and post-mortem lesion examination
6) Offering veterinary services to poultry and livestock farmers

Achievements:

1. Creation of awareness on our ETHNO-VETERINARY products in connection with primary Health Care in Shendam which was received with enthusiasm though there have been low patronage with compliants of cost of the products.
2. Liaison with the Royal family on the recovery of the land that had been taken over although not much has been achieved but we have started the talks and the talks were stalled due to the demise of the family member who brought the court order for the takeover of the warehouse.

Challenges:

1. The continued delay of the roofing of the part of the laboratory building that was blown off by rainstorm has been a serious challenge faced by the laboratory and its staff.
2. The continued non resolve of the land issue with the royal family which has led to the community taking a large chunk of the land earlier and later coming to take over the warehouse through a court order is another serious challenge to the future development of the laboratory.
3. The non approval of vaccines request to the laboratory for dispensing to livestock farmers.
4. No in house training for the laboratory staff in order to improve technical capabilities.
5. No vehicle for ambulatory service to make the work more effective.
6. No staff accommodation is a serious challenge.

16) SOKOTO

Introduction:

NVRI Laboratory Sokoto was established since 1972/73 with Dr. A. E. Ogunsan as the first VIO who served there for over 20 years in the Lab before being transferred to the Headquarters. He handed over to Dr. Ahmed Abdullahi in 2002 to 2007 (five years) then transferred to B/Kebbi. Dr. Ahmed handed over to Dr. HadiAbdulsalam in 2007 to 2019. Dr. Garba Ahmed took over from Dr. Hadi from March, 2019 to date.The Laboratory with about 1.4 hectares' land space comprises of 16 rooms offices/laboratories and 4 rooms linear residential accommodation (now converted to twin one bedroom apartments). So No furniture nor equipment as at the reporting period.

Activities:

Activities in the lab during the reporting period as usual we reported to the laboratory at 8.00 am daily and close between 4.00 pm and 5.00 pm. There is also cleanliness of the laboratories and offices daily followed by attendance to clients. Furthermore, a total of 15 poultry carcasses were brought for post mortem diagnoses (Gumboro, fowl typhoid, fowl pox and New castle diseases respectively were diagnosed) and veterinary interventions ensued. Three cases of CBPP, 5 PPR and 10helminthosis in cattle sheep/goats were diagnose during the reporting period. On vaccine sales about 155 vials of CBPP, 35 vials of PPR, 20 bottles of BQV, 20 HSV, 15 ASV Totaling 245 bottles/vials for large animal vaccines were sold. Also, 40 vials of Lasota, 50 vials Gumboro, 50 vials NCD i2, 75 vials Komorov, 20 vials Fowl pox, 410 vials fowl typhoid and 45 vials of ARV totaling 690 vials of poultry and antirabies vaccines were sold. A total of ten calls were received for extension services/guide on vaccines usage and animal husbandry. Similarly, 6 ambulatory services were rendered to 6 different poultry farms in Sokoto State and Kebbi State, for poultry vaccinations farms for NCD Komorov vaccination and fowl typhoid vaccination involving 9450 laying birds cumulatively.

Our solar inverter got burnt due to mal-wiring of the laboratory by contractors in 2023 renovation work. Similarly, our gate covers cut and felt down twice and these were all fixed with the generated revenue from vaccines sales. Furthermore, our Borehole has stopped working almost few weeks after handing over and yet to be repaired despite the report.

Training: The officer in charge (Dr. Garba Ahmed) has attended 1 training workshops in Jos in July, 2024.

Promotion: Dr. Garba Ahmed, was promoted to a Director in April 2024 effective from 1st January, 2024. Two officers (Dr. Bello A. Kaoje and Mr. Joseph Y. Hong) will be due for promotion this coming year January, 2025

Financial income (January – December, 2023):

a) Opening negative balance B/F from 2023 = N- 51,700
b) Handling charges from sales of Large animal vaccines = N49,000
c) Handling charges from sales of Poultry & ARV vaccines = N69,000
d) Internally generated revenue (parked cars, furniture, stores etc) = N220,000

Total = N286,300.00

Financial expenses (January – December, 2023):

a) NEPA pre-paid meter credits purchase (Jan-Dec, 2024)…..…..= N60,000
b) Processing and transportation of vaccines Vom to Sokoto (X4)..= N60,000
c) Repair of fallen gates twice (materials and labour, welding)……= N75,000
d) Repair of burnt Solar inverter……= N130,000
e) Data and secretariat work……...= N10,500

Total =N335, 500

Outstanding negative balance for 2024 = N49,200

Challenges:

Our two major challenges are lack of furniture and laboratory equipment in the lab. Also, there are only 2 veterinarians in the lab, one laboratory technologist and one Admin, Officer, more staff are needed, especially, when the Lab equipment are supplied. We need more technical staff.

Future Plan: Our laboratory has a vast land space, the future plans are that after having furniture and laboratory equipment. We propose to have a partnership with a private firm to have a Veterinary Clinic attached to our laboratory which certainly will burst our presence and services to the state residence. We further propose to have demonstration poultry house to be built in the laboratory space where broilers and quails can be raised regularly and sold to generate revenue for the lab and the Institute.

17) UMUDIKE

FUNCTION/MANDATE

The laboratory reports to the Executive Director through the Director (Diagnostic & Extension) at the National Veterinary Research Institute in Vom.

The **mandates** of the Umudike Laboratory include:

- Distributing and selling vaccines produced by the National Veterinary Research Institute (NVRI).
- Diagnosing and treating animal diseases using advanced laboratory techniques and expertise.
- Providing veterinary services to poultry and livestock farmers.

- Educating farmers, veterinarians, pet owners, and the general public on the efficacy and proper use of NVRI vaccines and products.
- Offering professional guidance on animal disease control strategies.
- Collecting feedback from farmers regarding the effectiveness of NVRI's biological products and services.

Research Activities

The Umudike Laboratory is involved in diagnosing animal diseases using advanced laboratory techniques and expertise.

Capacity Building and Training

The laboratory is involved in educating farmers, veterinarians, pet owners, and the general public on the efficacy and proper use of NVRI vaccines and products.

Infrastructure and Facilities

There is the need for laboratory upgrades, including a Real-Time Polymerase Chain Reaction (RT-PCR) machine, reagents, and modern equipment. There is also need for renovation of the laboratory building to improve infrastructure. The laboratory lacks a vehicle for timely and efficient ambulatory outreach services.

Human Resources and Staff Development

There is the need to recruit a medical laboratory scientist or laboratory technician, as well as an animal health scientist. There is also insufficient casual staff to support operations.

Community Engagement and Outreach

The laboratory undertakes the following community engagement and outreach activities:

- Collaborated with the Ministry of Agriculture to conduct a mass anti-rabies vaccination campaign in Abia State.
- Delivered extension services to numerous farms.
- Educated farmers, veterinarians, pet owners, and the general public on the efficacy and proper use of NVRI vaccines and products.
- Offered professional guidance on animal disease control strategies.
- Collected feedback from farmers regarding the effectiveness of NVRI's biological products and services.

Challenges and Constraints

The Umudike Laboratory faces several challenges:

- Insufficient casual staff to support operations.
- Laboratory upgrades are needed, including a Real-Time Polymerase Chain Reaction (RT-PCR) machine, reagents, and modern equipment.
- Renovation of the laboratory building to improve infrastructure.
- Lack of a vehicle for timely and efficient ambulatory outreach services.
- Need to recruit a medical laboratory scientist or laboratory technician, as well as an animal health scientist.

List of Publications

1. Ishaku Leo Elisha and Waleed Joyan Ahmad, (2024). Fortifying Biosafety in Nigeria: Insights and Transformative Practices from the SNL NIBSA Biorisk Management Course. Babcock University Medical Journal 7(2):152-154.

2. Blessing Shok, Leritshimwa Amagon, Noel Nenman Wannang, Kennedy Iliya Amagon, Ebere Emilia Okpalaeke, Jurbe Gofwan Gotep, Ishaku Leo Elisha (2024). Effects of selected food dyes on the reproductive system of male albino rats West African Journal of Pharmacy 35(2):92-100.

3. Joy Gararawa Usman, Usman Ngamarju Gadzama, Ishaku Leo Elisha, Onakpa Michael Monday, Olatunde Peter Ajagbonna, Saka Sanni (2024). Assessment of the Phytochemical Composition and Antioxidant Properties of Ripe Fruit of *Cucumis metuliferus* E. Meyer Ex Naudin. Pharmacognosy Communications 14(4):138-143.

4. Barde Israel Joshua, Ishaku Leo Elisha, Melba Bondad Reantaso (2024). Mapping the research landscape: A bibliometric analysis of Tilapia lake Virus Disease worldwide. Global Journal of Fisheries Science 6(3): 70-85.

5. Barde Israel Joshua, Samson Blessing Osha, Arieri Onikisateinba, Umaru Nendir John Haruna,.....Ishaku Leo Elisha (2024). Evaluation of *Lawsonia inermis* (Henna) and *Hibiscus sabdariffa* (Roselle) ethanol extracts as substitutes for Eosin stain in Histology using albino rats. Journal of Animal Science and Veterinary Medicine 9(4):176-184.

6. Ishaku Leo Elisha, A Onikisateinba, GS Joel, PD Luka, BI Joshua, SH Jagab, R Ahmed, H Haliru, SA Abubakar, S Makama, NS Sati, M Muhammad (2024). Unveiling the global reach of African anthrax research: A bibliometric study. Science in One Health (Elsevier) 3:100052

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