



# Offer of the National Veterinary Research Institute, Pulawy, Poland

## 1. General Information about the Institute

The National Veterinary Research Institute (NVRI), based in Pulawy, is one of the leading veterinary scientific institutions in Europe and worldwide. NVRI laboratories comply with the highest standards of quality and safety, and are accredited by the Polish Centre for Accreditation (PCA) and certified by the European Directorate for Quality of Medicines and Healthcare (EDQM).

The Institute focuses on diagnosing infectious and parasitic animal diseases, studying the safety of food and feed of animal origin, and protecting public health. The Institute plays an important role in the monitoring of risk from animal diseases, ensuring animal health standards, and developing modern diagnostic and control methods. It employs 543 staff members, including 110 scientists.

The Institute has seven Research Departments:

- Department of Bacteriology and Bacterial Animal Diseases
- Department of Virology and Viral Animal Diseases
- Department of Microbiology of Food and Feed
- Department of Chemical Research of Food and Feed
- Department of Parasitology and Invasive Diseases, Bee Diseases and Aquatic Animal Diseases
- Department of Veterinary Medicinal Products Control
- Department of Research Support

Research is supported by 5 Science Support Departments and 9 General Support Departments, which provide full administrative and technical assistance.

The Institute conducts testing according to the PN-EN ISO/IEC 17025 international standard and under EDQM supervision. This ensures high quality, reliability, and compliance with European requirements. The PCA has accredited 245 testing procedures (including 42 with flexible scope), and 16 procedures are certified by EDQM.

## 2. Historical Background and International Context

The National Veterinary Research Institute in Puławy was established in 1945. From the beginning, NVRI played a key role in the diagnosis of animal diseases and the production of biological preparations. Over the following decades, it developed into a modern scientific institution and was granted the status of the National Research Institute in 2003.

Today, PIWet-PIB has modern infrastructure and serves as a national reference laboratory in many areas related to animal health and the safety of food and feed. It is a recognized leader in research on infectious and parasitic animal diseases, and a trusted partner of both national and international organizations.

**International cooperation** – NVRI actively contributes to the work of and cooperates with:

- World Organization for Animal Health (**WOAH**)
- European Food Safety Authority (**EFSA**)
- Food and Agriculture Organization (**FAO**)
- European Commission – DG Health and Food Safety (**DG SANTE**)
- WHO/WOAH/UNEP/FAO (Quadripartite) and Codex Alimentarius
- European Medicines Agency (**EMA**)
- European Directorate for the Quality of Medicines (**EDQM**) and the General European **OMCL** Network
- French Agency for Food, Environmental and Occupational Health & Safety (**ANSES**)
- German Federal Institute for Risk Assessment (**BfR**)
- Friedrich-Loeffler-Institute (**FLI**)
- Technical University of Denmark (**DTU**)
- Wageningen University & Research (**WUR**)

## 3. Scientific Achievements and Research Capacity

The National Veterinary Research Institute is distinguished by a modern research infrastructure, designed to support high-level scientific excellence and innovations across multiple disciplines.

- Modern laboratories with biosafety levels BSL2, BSL3, and BSL3+, ensuring protection of personnel and the environment during work with highly pathogenic microorganisms
- A BSL3 experimental animal facility, enabling advanced studies on the pathogenesis, diagnostics, and prevention of animal infectious diseases
- A conventional animal facility, supporting research on innovative veterinary medicinal products, as well as toxicological, pharmacological, and preclinical studies
- Laboratories specialized in molecular biology, microbiology, analytical chemistry, immunology, and pharmacology

In the last five years, NVRI has significantly modernized its equipment base, including:

- Liquid chromatographs coupled with tandem mass spectrometers (LC-MS/MS)
- Liquid chromatograph with diode array and fluorescence detectors
- High-throughput DNA sequencer
- Digital PCR system
- Next-generation sequencing (NGS) platforms:
  - MiSeq (Illumina)
  - NextSeq 500 (Illumina)
  - Two MinION devices (Oxford Nanopore)
- Automated NGS library preparation station (Beckman Coulter Biomek i5)
- Automated nucleic acid extraction system (Promega Maxwell RSC 48)
- Spectrophotometer (NanodropOne, Thermo Fisher Scientific)
- High-resolution microarray scanner (G5761A SureScan Dx, Agilent)
- MALDI-TOF/TOF mass spectrometer (Bruker) with dedicated analysis software
- Tissue imaging scanner (TissueScout/MF 5000, Reflecta)
- Automated matrix sprayer for MALDI imaging (MALDI/TM-Sprayer, Bruker)

## 4. Scope of Services and Research Activities

### a) Scientific and Commercial Research

The Institute conducts a wide range of diagnostic and analytical services, including:

- virological diagnosis of diseases of pigs, ruminants, poultry, equines, fish (including ASF, avian influenza, rabies, Newcastle Disease, PRRS, IBR, BVD and others)
- bacteriological diagnosis of diseases of pigs, cattle, poultry, equines, fish (including brucellosis, mycoplasmosis, leptospirosis, Lyme disease and others)
- laboratory diagnosis of bee diseases (parasitological and microbiological testing)
- microbiological and chemical testing of food of animal origin (dioxins in food and feed, volatile N-nitrosamines in food, toxic elements, residues of veterinary medicinal products, hormones, natural toxins, etc.)
- antimicrobial resistance testing
- post marketing surveillance of veterinary medicinal products (VMPs)
- batch release of immunological veterinary medicinal products (IVMPs)
- animal poisoning testing
- determination of meat species
- testing of biocidal products
- testing of organic fertilizers
- expertise in the area of veterinary medicine
- expertise of the in vitro diagnostic products used in veterinary medicine
- NEW! preclinical testing of medical products on livestock, companion and laboratory animals

## b) National Reference Laboratory Activities

NVRI acts as a National Reference Laboratory for 138 areas, including:

- 82 related to infectious and parasitic animal diseases and zoonoses
- 56 concerning the sanitary quality of food and feed

## c) WOAH Reference Laboratories

1. Classical swine fever
2. Porcine reproductive and respiratory syndrome (PRRS)
3. Enzootic bovine leukosis
4. Q fever

## c) Specialized Research Areas

- Research on zoonoses (e.g., salmonellosis, listeriosis, campylobacteriosis)
- Monitoring and risk assessment of chemical residues in food
- Evaluation of the safety and efficacy of vaccines and biological products
- Immunological studies and genotyping of pathogens
- Microbiome monitoring in healthy and diseased animals
- Microbial identification and strain typing

## 5. Selected Projects and Achievements

### a) Training and Educational Activities

- Implementation of a national multiannual program – 18 thematic areas
- Specialist training for veterinary practitioners
- Organization of scientific conferences, symposia, and stakeholder meetings
- Hosting of thematic scientific seminars and workshops organized by PIWet-PIB
- Training for Agricultural Advisory Units
- Total number of participants trained at the Veterinary Centre for Postgraduate Education (WCKP) from 2020 to 2025: 9,044

### b) Public Health Engagement (2002–2025)

2002: Bovine spongiform encephalopathy (BSE) epidemic

2007: Avian influenza epidemic

2011: E. coli contamination of vegetables

2013: Horse meat in processed foods

2013: Antibiotic contamination incidents

2014: Emergence of African swine fever

2014: Polycyclic aromatic hydrocarbons (PAHs) in smoked meats

2020: SARS-CoV-2 in mink population  
 2022: "OdraGate" crisis  
 2024: West Nile Fever outbreaks in hooded crows  
 2024: Newcastle disease epidemic  
 2025: Enhanced preparedness for diagnosis and control of foot-and-mouth disease

## c) Scientific Publishing Activities

*"Journal of Veterinary Research"* – Impact Factor: 1.5, 140 Ministerial Points

Number of publications by PIWet-PIB scientists in 2024: 149

- Publications with Impact Factor > 1: 92
- JCR-indexed publications: 96

## d) Multiannual Monitoring Programme 2024–2028: “Animal Health and Public Health Protection” – Total: 59 tasks

- I. Monitoring of prohibited substances in food of animal origin and undesirable substances in feed – 15 tasks
- II. Surveillance of zoonotic diseases – 22 tasks
- III. Assessment of the prevalence of infectious diseases in livestock and wildlife – 21 tasks
- IV. Training for the Veterinary Inspection – 18 thematic areas

## e) EU Projects

- International Cooperation „WOAH Laboratory Twinning Program between Poland and Kazakhstan with the collaboration of the United Kingdom” 01.06.2022 – 31.07.2024
- International Cooperation „Support to the Veterinary Services of Poland to investigate potential risk factors for African Swine Fever (ASF) incursion in commercial pig herds” 28.06.2021 – 31.05.2024
- Horizon Europe Programme HORIZON-CL6-2021-FARM2FORK-1 „A joined-up approach to the identification, assessment and management of emerging food safety hazards and associated risk (FoodSafeR)” 01.10.2022 – 30.09.2026
- Horizon Europe Programme HORIZON-INFRA-2021-EMERGENCY-2 „Integrated Services for Infectious Disease Outbreak Research (ISIDORE)” 01.02.2022 – 31.01.2025
- International Cooperation „Wildlife ecology, health surveillance and interaction with livestock, human population and environment (ENETWILD 2.0)” 16.07.2023 – 30.09.2024
- Horizon Europe Programme EU4H-2022-DGA-MS-IBA „Setting up a coordinated surveillance under the One Health approach (OH4Surveillance)” 01.01.2024 – 31.12.2026
- Horizon Europe Programme HORIZON-CL6-2023-FARM2FORK-01-5 „European Partnership Animal health and Welfare” (EUPAHW) 01.01.2024 – 31.12.2030
- Horizon Europe Programme HORIZON-CL6-2023-BIOIV-01-1 „Pan-European assessment, monitoring, and mitigation of chemical stressors on the health of wild pollinators (WILDPOSH)” 01.01.2024 – 31.12.2027

- Horizon Europe Programme HORIZON-CL6-2023-FARM2FORK-01-5 „New technologies for african swine fever vaccines (VAX4ASF)” 01.01.2024 – 31.12.2027
- Horizon Europe Programme HORIZON-HLTH-2023-TOOL-05-08 „Pandemic Information to Support Rapid Response (PAIR)” 01.01.2024 – 31.12.2028
- ERA-NET Programme, JPIAMR-ACTION CALL 2021 „lonophore coccidiostats: the risk of antimicrobial resistance selection – clinical impact and intervention strategies" 01.04.2022 – 31.12.2025

## f) National Projects - National Science Centre

- OPUS 17 "Pathogenesis mechanism of ulcerative necrosis – a lethal disease of salmonid fish" 20.02.2020 – 19.03.2025
- OPUS 19 "Epidemiology of alveococcosis in selected endemic and non-endemic regions in Poland, with particular emphasis on genetic profiles of Echinococcus multilocularis in definitive hosts and humans" 11.02.2021 – 10.02.2025
- OPUS 21 "Risks associated with feed contamination by antibiotics" 01.03.2022 – 28.02.2026
- SONATA 17 "Microbiota-virus interactions during avian coronavirus infection" 15.11.2022 – 14.11.2025
- OPUS 25 "Can virucidal plant extracts prevent infection of common carp (Cyprinus carpio L) with CyHV-3 (Cyprinid herpesvirus 3)?" 02.09.2024 – 01.09.2028
- MINIATURA 7 "Prevalence of gammaherpesvirus infections in non-domesticated ruminants" 08.08.2023 – 07.08.2024
- MINIATURA 7 "Assessment of temperature impact on the survival of Mycoplasma anserisalpingitidis in feces and water" 05.10.2023 – 04.10.2024
- MINIATURA 7 "Development and validation of an analytical tool for assessing soil contamination with brominated flame retardants" 05.10.2023 – 04.10.2024
- MINIATURA 7 "Adsorption and degradation of selected antibiotics in agricultural soil" 28.11.2023 – 27.11.2024
- MINIATURA 7 "Pioneering genetic studies on interspecies hybridization between Trichinella spiralis and Trichinella britovi – preliminary research" 28.11.2023 – 27.11.2024
- MINIATURA 8 "Preliminary assessment of dogs' and cats' exposure to dioxins and related compounds in pet food" 10.12.2024 – 09.12.2025
- SONATA 19 "Escape from ESKAPE antibiotic-resistant pathogens in wastewater – importance of last-resort antibiotics and the newest therapeutic options" 10.07.2024 – 09.07.2027

## g) National Projects – Ministry of Science and Higher Education

- Excellent Science II *"Current parasitological hazards in food"* 01.09.2023 – 31.08.2025
- Science for Society *"Natural and organic fertilizers: a source of environmental contamination with antibacterial substances"* 23.08.2022 – 22.08.2024
- Scientific Equipment Maintenance (2024–2026) *"Laboratory Complex of the Department of Omics Analyses 3.0"*
- Scientific Journals Development *"Purchase and implementation of an additional production module for the JVR Editorial Office and continuation of system implementation from the first project stage"* 2023–2024

## h) National Projects – National Centre for Research and Development

- ERA-NET CO-FUND ICRAD *"Characterization of virus- and host-specific IFN type I modulation capacity in virulent and attenuated African Swine Fever virus strains"* 30.03.2021 – 29.03.2024
- ERA-NET CO-FUND ICRAD *"Future rodent population control strategies to protect swine and poultry health"* 31.03.2021 – 30.09.2024
- ERA-NET CO-FUND ICRAD *"Pathogenic avian influenza not subject to mandatory control; determinants of virulence in emerging viruses"* 15.03.2021 – 14.12.2024
- Gospostrateg III *"Implementation of an innovative, low-cost, and environmentally friendly method for hygienization of organic waste for use in fertilization"* 01.01.2021 – 31.12.2024

## i) National Projects – Agriculture Restructurisation and Modernisation Agency

- Beekeeping Sector Intervention I.6.6 – Research Support *"Study on residues of neonicotinoids and pyrrolizidine alkaloids in honey"* 20.06.2024 – 31.07.2024

## j) Projekty krajowe – Ministerstwo Rolnictwa i Rozwoju Wsi

- Research in Organic Farming *"Research on the development of effective methods for the production of high-protein organic feed components for pigs and poultry"* 04.04.2024 – 30.11.2024

## k) EU Funds for Lubelskie Region 2021–2027

- Project title: *Strengthening the potential of the National Veterinary Research Institute – National Research Institute in the area of commercialization of research in food, feed, and environmental safety for business entities*

Implementation period: 01.04.2025 – 31.12.2026

Project total cost: PLN 10,809,790.00

EU Funds contribution: PLN 7,470,180.08

## 6. Opportunities for Collaboration

The Institute is open to cooperation with:

- Research institutes and universities
- The breeding, veterinary, and pharmaceutical sectors
- Public administration and veterinary inspection authorities
- International partners and industry organizations

We offer a flexible approach to projects, tailored to the needs of our partners and the specifics of the tasks carried out.

## 7. Contact

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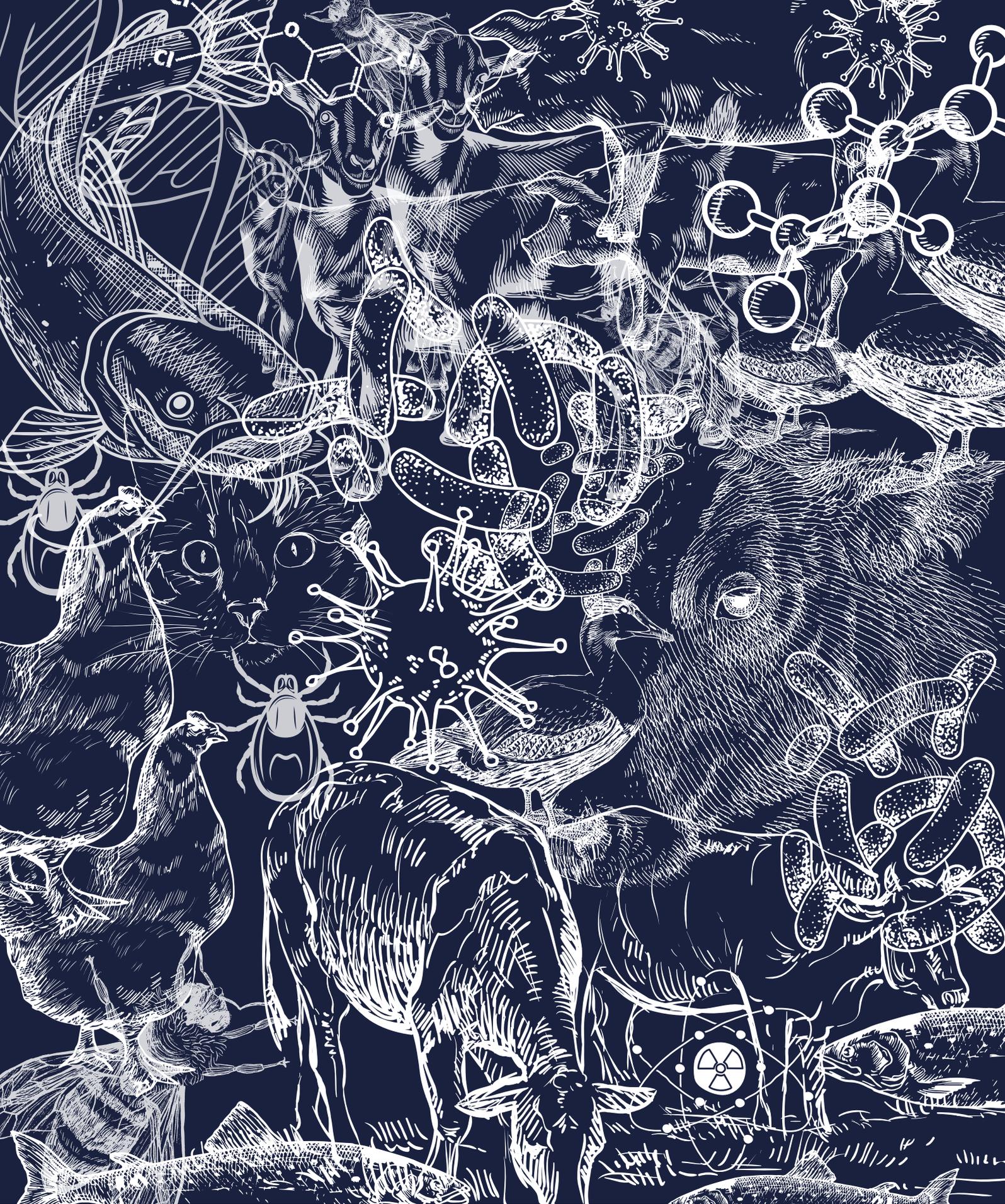
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