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BIOSAFETY AND BIOSECURITY AT THE DIAGNOSTIC CENTER OF ANIMAL DISEASES IN SENASA, PERU

Roberto A. Acosta Gálvez

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PRESENTATION

- The **SENASA`s Diagnosis of Animal Diseases Center (DADC)** is the National Reference Laboratory in Animal Diseases
- Offers diagnostic services: for prevalent animal diseases in animal health and quality control for biologics and veterinarian products
- Help to Official Sanitary Programs (SENASA), Farmers, and Trade dealers
- Laboratory work with procedures stablished by OIE
- It is looking forward for a Quality System Management for ISO 9001-2000

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PRINCIPLES OF BIOSAFETY

- A fundamental objective of any biosafety program is the containment of potentially harmful biological agents. The term "containment" is used in describing safe methods, facilities and equipment for managing infectious materials in the laboratory environment where they are being handled or maintained.
- The purpose of containment is to reduce or eliminate exposure of laboratory workers, other persons, and the outside environment to potentially hazardous agents.
- The use of vaccines may provide an increased level of personal protection.
- The risk assessment of the work to be done with a specific agent will determine the appropriate combination of these elements.

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WHY BIOSECURITY

- Because of success in preventing and treating infectious diseases
- New threats to health continually emerge naturally, however, as bacteria and viruses evolve, are transported to new environments, or develop resistance to drugs and vaccines.
- Some familiar examples of these so-called emerging or re-emerging infections include HIV/AIDS, West Nile virus, and annual outbreaks of influenza.
- A solid understanding of the biology of the disease-causing agents, whether they occur naturally or are deliberately released.

NEEDS OF BIOSECURITY LEVEL

- Infectious disease research programs have BSL-3 laboratory suites required to perform their research.
- BSL-4 labs have the most stringent safety and security requirements.
- Lab safety manual and participate in lab safety training.
- Persons working with infectious agents or potentially infected materials must be aware of potential hazards, and must be trained and proficient in the practices and techniques required for handling such material safely.

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SENASA´s DADC LABORATORIES HAVE

- Biosafety or operations manual that identifies the hazards that will or may be encountered, and that specifies practices and procedures designed to minimize or eliminate exposures to these hazards.
- Personnel advised of special hazards and follow the required practices and procedures.
- Our speacilist is trained and knowledgeable in appropriate laboratory techniques, safety procedures, and hazards associated with handling infectious.
- Laboratory personnel, safety practices, and techniques are being supplemented by appropriate facility design and engineering features, safety equipment, and management practices

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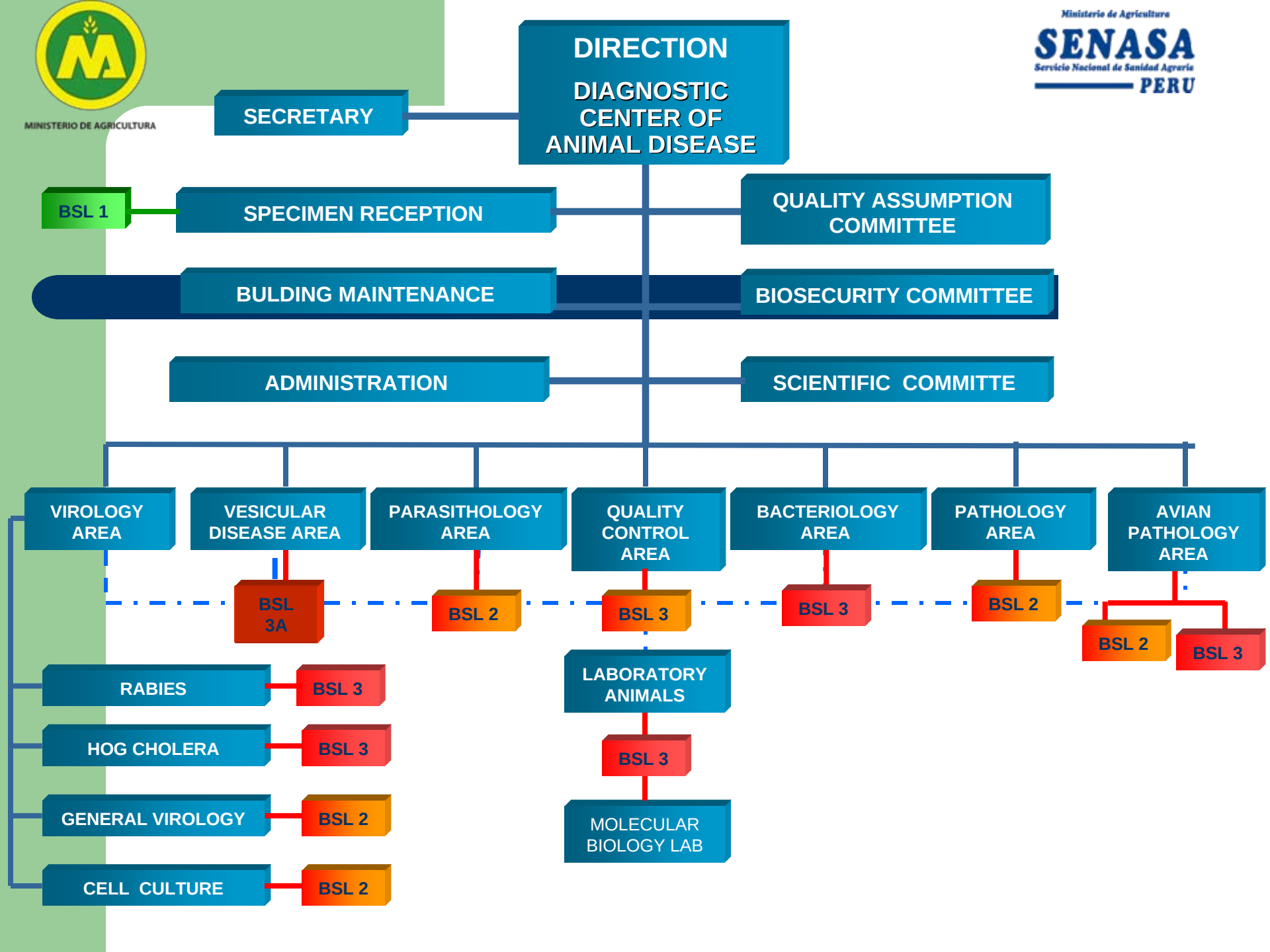
LABORATORIES AND OFFERED SERVICES

The SENASA`s Diagnosis of Animal Diseases Center (DADC) has 8 Lab well equipped:

- **Laboratory of Bacteriology.**
- **Laboratory of Quality Control of Veterinarian Products**
- **Laboratory of Vesicular Diseases**
- **Laboratory of Parasithology**
- **Laboratory of Pathology**
- **Laboratory of Avian Pathology**
- **Laboratory of Virology**
- **Laboratory of Molecular Biology**
- **Laboratory Animals Facilities.**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DIRECTION
DIAGNOSTIC CENTER OF ANIMAL DISEASE
SECRETARY
BSL 1
SPECIMEN RECEPTION
QUALITY ASSUMPTION COMMITTEE
BULDING MAINTENANCE
BIOSECURITY COMMITTEE
ADMINISTRATION
SCIENTIFIC COMMITTE
VIROLOGY AREA
VESICULAR DISEASE AREA
PARASITHOLOGY AREA
QUALITY CONTROL AREA
BACTERIOLOGY AREA
PATHOLOGY AREA
AVIAN PATHOLOGY AREA
BSL 3A
BSL 2
BSL 3
BSL 3
BSL 2
BSL 2
BSL 3
RABIES
BSL 3
HOG CHOLERA
BSL 3
GENERAL VIROLOGY
BSL 2
CELL CULTURE
BSL 2
LABORATORY ANIMALS
BSL 3
MOLECULAR BIOLOGY LAB

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ACCES CONTROL TO THE CENTER AND LABORATORIES

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DOOR ACCESS TO BSL 2 LAB

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DOOR ACCESS TO BSL 3 LAB

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BACTERIOLOGY

BSL 3

- Brucella, Leptospire, Clostridium, Salmonella, Mycobacterium, Fungi, Strains
- Equipment: 02 Class II Biological Safety Cabinets (BSCs).
- Protective lab clothing, gloves, glasses, and respiratory protection.
- Controlled access
- Decontamination of all waste
- Decontamination of lab clothing before laundering

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LABORATORY OF QUALITY CONTROL BSL 3

- Of avian vaccines, and mammals vaccines (anticarbunclosas, anticlostridiales)
- Animal foods, and ingredients for veterinary uses
- Equipment: 02 Class II Biological Safety Cabinets (BSCs).
- Protective lab clothing, gloves, glasses, and respiratory protection
- Controlled access
- Decontamination of all waste
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LABORATORY OF VESICULAR DISEASES BSL 3A

- Foot and mouth disease, Vesicular Stomatitis
- Equipment: 02 Class II (BSCs).
- Controlled access.
- Air-lock
- Protective lab clothing, gloves, glasses, and respiratory protection
- Decontamination of all waste
- Decontamination of lab clothing before laundering.
- Clothing change before entering
- Shower on exit
- All material decontaminated on exit from facility
- All procedures conducted in BSCs in combination with full-body, air-supplied, positive pressure personnel suit
- Frontier autoclave available

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LABORATORY OF PARASITHOLOGY BSL 2

- Pulmonar and Gastrointestinal worms, Fasciolasis
- Blood Piro-Anaplasmosis
- Neosporosis
- Inmunoparasithology
- Protective lab clothing, gloves, glasses, and respiratory protection
- Controlled access
- Decontamination of all waste
- Decontamination of lab clothing before laundering

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LABORATORY OF PATHOLOGY BSL 3

- Necropsy, Histopathology, Inmunohistochemestry, Tissue stain, Hemogram, TBC, BSE, Actinobacillus, Circovirus
- Food microscopy for BSE
- Equipment: 01 Class II Biological Safety Cabinets (BSCs).
- Protective lab clothing, gloves, glasses, and respiratory protection.
- Decontamination of all waste
- Decontamination of lab clothing before laundering

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LABORATORY OF AVIAN PATHOLOGY BSL 3

- Salmonella, Mycoplasma, Pasteurella
- Newcastle, Avian Influenza, Infectious Bronchitis, Avian Leukosis, Marek's Disease, Vian Infectious Anemia, Retículoendoteliosis, Laringotracheitis, Gumboro's Disease, Encephalomielitis, Inclusion Body Viral Hepatitis
- Bacterial and Viral Isolation
- Estability and Titulation of NCD Vaccines
- Equipment: 02 Class II Biological Safety Cabinets (BSCs).
- Protective lab clothing, gloves, glasses, and respiratory protection.
- Controlled access
- Decontamination of all waste
- Decontamination of lab clothing before laundering

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LABORATORY OF VIROLOGY BSL 3

- Rabies, Bovine Leukosis, IBR Bovine Infectious Rinotracheitis, Bovine Viral Diarrhea BVD, Equine Infectious Anemia, Aujeszky's Disease, PRRS, Hog Cholera, Blue Tongue
- Cell Culture for viral tipification
- Viral Isolation and Tipification
- Line Cell Culture (BHK, PK15, Vero)
- Equipment: 02 Class II Biological Safety Cabinets (BSCs).
- Protective lab clothing, gloves, glasses, and respiratory protection.
- Controlled access
- Decontamination of all waste
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LABORATORY OF MOLECULAR BIOLOGY BSL 2

- PCR for : Antrax, Avian Influenza, Newcastle Disease, Foot and Mouse Disease, and Brucella
- Equipment: Class I Biological Safety Cabinets (BSCs).
- Protective lab clothing, gloves, glasses, and respiratory protection.
- Controlled access
- Decontamination of all waste
- Decontamination of lab clothing before laundering

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ANIMAL LABORATORY FACILITIES BSL 3

- Rack for raising animal labs
- Innoculation for potency tests
- Equipment: 02 Class II Biological Safety Cabinets (BSCs).
- Protective lab clothing, gloves, glasses, and respiratory protection.
- Controlled access
- Decontamination of all waste
- Decontamination of lab clothing before laundering

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NUMBER OF SERVICES EXECUTED SINCE YEAR 2001 THROUGH 2007

DCAD	NUMBER OF ANALITIC DETERMINATIONS FOR YEAR						
	2001	2002	2003	2004	2005	2006	2007
All Laboratories	6872	7462	6871	12564	70706	91832	131449

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DUTIES GOING ON

- BSE Monitoring
- AI and NCD Monitoring
- Avian disease diagnosis for exportation (every 3 months)
- Increase of quality control for veterinarian products
- Next implementation of conventional PCR and RT-PCR for diagnosis
- Antigen Production (Brucella, Rabies, Leptospira) and hiperinmune serum (Antileptospira – 17 serum groups)
- Permanent surveillance of Bru, TBC, Lept, HC, NCD, AI, FMD, EIA, Rabies, BSE

THANKS

- Ideas, creativity, iniciatives, proposals, ...