



Problems of biosafety system in scientific institutions on veterinary medicine in Ukraine and ways of their solution

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NSC “Institute of Experimental and Clinical Veterinary Medicine”

- The oldest in Ukraine Institute of Experimental and Clinical Veterinary medicine was founded in 1922 by the special decision of the Government.
- Since its foundation Institute worked on such problems as malleus, anthrax, brucellosis, plague, swine fever, foot-and-mouth disease, stachyobotryotoxicosis and others.



Decree of the President of Ukraine

№186/2006 from 03.03.2006

**“About awarding
Institute of
Experimental and
Clinical Veterinary
Medicine the status
of the National
Scientific Centre”**



The structure

**NSC
“IECVM”**

**8 departments, 19 research laboratories, including
Reference-laboratory
for Avian influenza**

**Dnepropetrovsk
Experimental
station**

**Crimean
Experimental
station**

**Odessa
Experimental
station**

Scientific establishments in the branch of veterinary medicine in Ukraine

Head institution: National Scientific Center “Institute of
Experimental and Clinical Veterinary Medicine”,
Kharkiv

Institute of Veterinary Medicine, Kyiv

Institute of Epizootiology, Rivne

NSC “Institute of Experimental and Clinical Veterinary Medicine”

- **At present time NSC “IECVM” is a leading coordinating center on the problems of scientific support of veterinary medicine in Ukraine and has the most powerful scientific potential.**
- **For the last four years it has coordinated scientific researches in the field of veterinary medicine of the countries of Community of Independent States (Former USSR).**

NSC “Institute of Experimental and Clinical Veterinary Medicine”. Areas of expertise

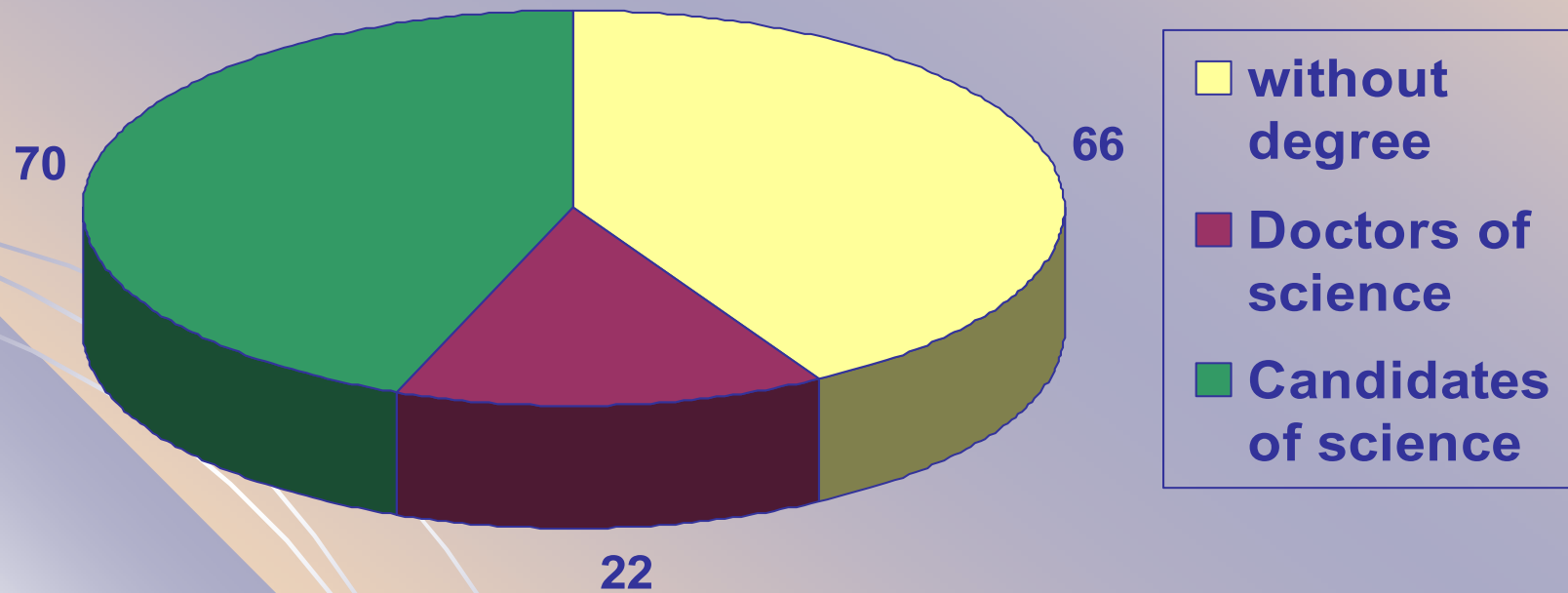
- ✓ **Zoonoses and public health risk assessment,**
- ✓ **Biosafety,**
- ✓ **Veterinary virology,**
- ✓ **Veterinary microbiology,**
- ✓ **Veterinary parasitology,**
- ✓ **Veterinary immunology,**
- ✓ **Veterinary toxicology,**
- ✓ **Biotechnology,**
- ✓ **Molecular biology,**
- ✓ **Food and feed-stuff quality and safety**

Scientific potential of the NSC “IECVM”

4 academicians of UAAS

2 corresponding members of UAAS

158 researches



Indices for 2008 (number of people)

uring 85 years of intensive research work in the field of infectious pathology the NSC “Institute of Experimental and Clinical Veterinary Medicine” has formed several scientific schools, which keep on working, on the problems of infectious and other dangerous diseases.

- **Among researchers which present these schools are:**
- **academician Stegnyy B.T. (monitoring of especially dangerous avian diseases, such as Newcastle disease, Marek's disease, avian influenza),**
- **professor Babkin A.F. (anthrax, tularemia, brucellosis),**
- **professor Bilokin' V.S. (biotechnology, avian influenza, cultivation of especially dangerous microorganisms, CSF),**
- **professor Zavgorodniy A.I. (tuberculosis),**
- **academician Malinin O.A., doctor Kutsan A.T. (toxicology, pesticides, chemicals),**
- **academician Krasnikov G.A. (immunology and prion infections),**
- **doctor Gorbatenko S.K. (enzootic bovine leucosis).**

Collection of the Strains of Microorganisms

SC “Institute of Experimental and Clinical Veterinary Medicine” has collected and keeps in persistent storage the unique collection (more than 700) of dangerous farm and wild animals infectious diseases agents’ strains, including especially dangerous, which require the BSL-III.

Iso NSC ‘IECVM’ store collection of cell cultures for biotechnology .

Notifiable diseases agents:

- Avian influenza;
- Newcastle disease;
- Classical swine fever;
- Bovine tuberculosis;
 - Anthrax
 - Avian pox;
 - Marek's disease;
- Bovine viral diarrhea;
 - Infectious bovine rhinotracheitis;
- Bovine enzootic leucosis;
- Poultry viral encephalitis;
 - Erhysipelatous;
 - Leptospirosis;
 - Listeriosis;
- Chlamidiosis;
- Yersiniosis
- Salmonellosis;
- Mycoplasmosis;
- Mycotoxicosis;
- Campylobacteriosis;
 - Pasterellosis;
 - etc.

Toxines

- hexachloran;
- J- hexachloran;
- heptachlorine;
- hydrazine and its compounds;
- glyfluorine;
- 0,0-dimerhyl-0-4-nitrophenol/thiophosphate/metaphos;
- 4,6-dinitro-2-isopropilphenol;
- dinitro-o-cresolp;
- dinitrophenol;
- trichlorophenolate of copper;
- mercaptophos;
- pentachlorophenol;
- tetraethylplumbum;
- ethylcalomel (granosan);

- **Now about 650 strains are used for scientific researches and production of 73 diagnostic and vaccine preparations.**
- **These preparations provide the epizootic and epidemic safety of Ukraine and neighboring countries.**



- **About 220 researchers, including veterinarians and laboratory assistants, work with the strains of microorganisms in the laboratories of the institute. A lot of them have experience in work with especially emergence diseases agents including anthroozoonosis.**



During the last 6 years in the NSC “IECVM”:

- ✓ 73 immunobiological preparations have been developed**
- ✓ 42 therapeutic and prophylaxis preparations have been developed**
- ✓ 27 strains of microorganisms have been deposited**
- ✓ 80 TC U have been approved**
- ✓ 201 patents have been received**
- ✓ 97 standards have been harmonized**

Reconstruction

Thorough reconstruction and total re-equipment of facilities is conducted in the NSC “IECVM” to ensure the proper level of biological safety and to satisfy the requirements of up-to-date standards of the good laboratory practice (GLP, ISO 17025)



Reconstruction

About 80% of the NSC “IECVM” facilities have been already reconstructed



Facilities, which are the most ready for the BSL-III introduction

- ✓Laboratory for avian diseases study
- ✓Biotechnology laboratory
- ✓Laboratory of Molecular Diagnostics
- ✓Virology Laboratory

Now the these laboratories have the second level of biological safety (BSL-II)



Compliance NSC “IECVM” with the biosafety requirements

With the purpose of compliance with the biosafety requirements NSC “IECVM” is conducting the work on introduction of biosafety standards, development of the methods of biological risk estimation, development of the system of biological protection. Program of laboratory facilities reconstruction, which includes BSL-III standard introduction, has been developed.

Aim of project for BSL 3 laboratory

Facilities with BSL-3 and BSL-3+ level are used for research, monitoring, diagnostic, and production goals in conditions that warrant work with highly dangerous for animals and humans pathogens with viral and/or bacterial etiology. These agents are the causative agents of notified with WHO and/or OIE and need high level security control for international trade by EU countries and WTO-members.

NSC “IECVM” advantages for BSL-3 laboratory facilities establishment

- **Scheme for collaboration and cooperation with state veterinary establishments and services has been elaborated.**
- **High professional and expertise level for work with highly pathogenic viruses and bacteria**
- **We have collection of pathogens. Their allocation, storage and use orders have been elaborated**

NSC “IECVM” participates in Biological Threat Reduction Program (BTRP):

November 2006 – January 2007 NSC “Institute of Experimental and Clinical Veterinary Medicine” received from BTRP (USA) equipment and reagents for monitoring of Avian influenza in Ukraine. Total 120000\$.

Areas of interest in biosafety and biosecurity and collaboration search

- Zoonoses and emergence animal diseases monitoring, diagnosis, prophylaxis and prognosis means study development,
- Food and feed-stuff quality and safety monitoring,
- Implementation of international standards and novel methods for diseases control
- Facilities reconstruction and capacity building
- Professional B&B trainings

Thanks for attention!

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