Activities of the NRL “Salmonella, campylobacter, staphylococci and antimicrobial resistance”, Bulgaria

EURL Salmonella Workshop

Zaandam, Netherlands

29 – 30th May 2017

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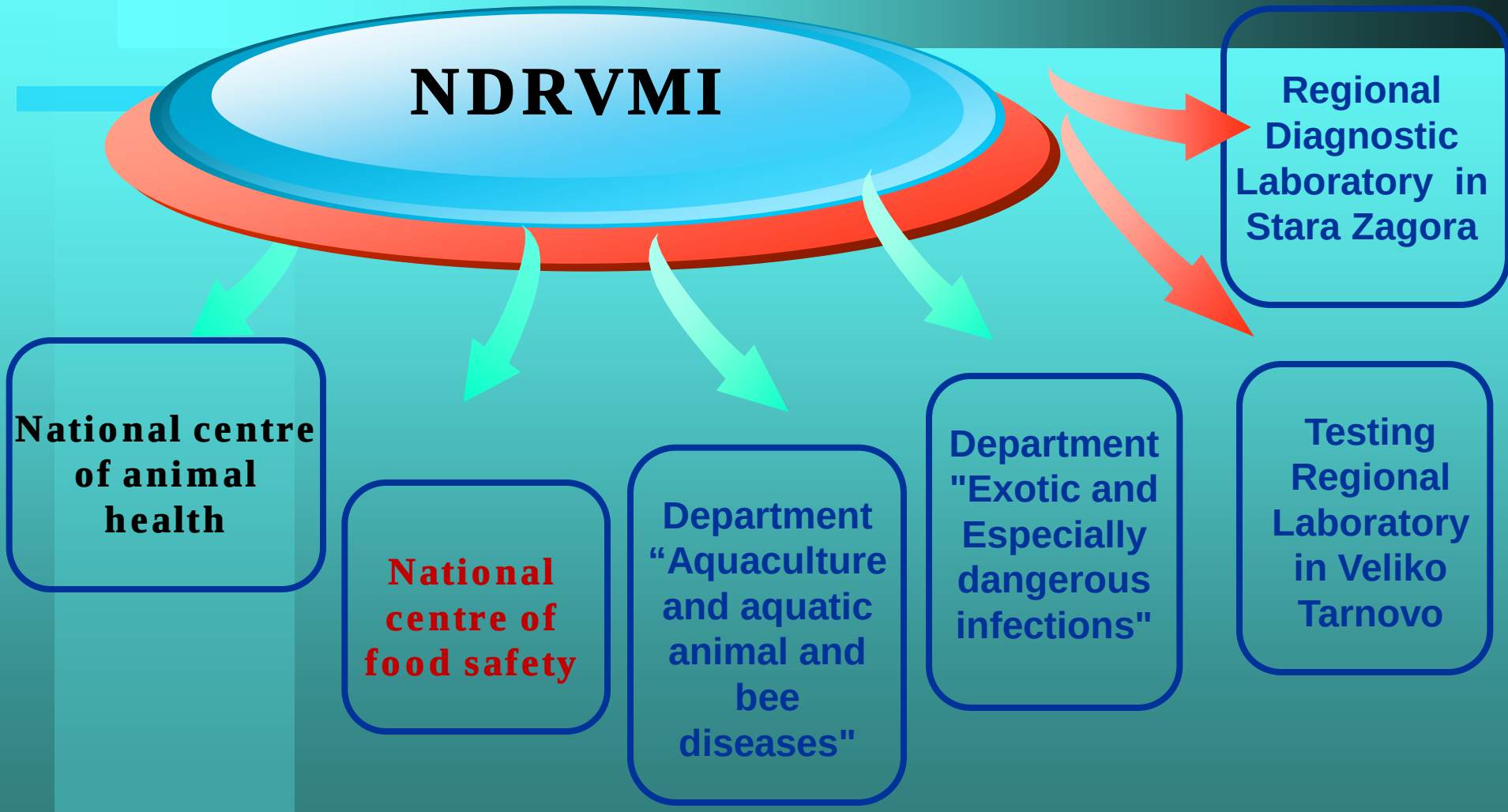
NRL “Salmonella, campylobacter, staphylococci and antimicrobial resistance”, NDRVI, BFSA

National Diagnostic Research Veterinary Medical Institute, Sofia, Bulgaria

National Diagnostic Research Veterinary Medical Institute is a specialized structure of the Bulgarian Food Safety Agency (BFSA) to carry out research, scientific, applied, reference, diagnostic and expert activities in the field of animal health, food and feed safety and environmental issues.

National Diagnostic and Research Veterinary Medical Institute, Sofia, founded 1901

Structure of NDRVMI



National centre of food safety

- **Microbiology of food, feed and farm and environmental samples**
- **Physico-chemical analysis of food**

NRL “Salmonella, campylobacter, staphylococci and antimicrobial resistance” - 1

- Serotyping of Salmonella isolates from the National Control Programs;

- Serotyping of Salmonella isolates from food, feed, environment and veterinary samples isolated in other laboratories;

NRL “Salmonella, campylobacter, staphylococci and antimicrobial resistance”-2

- **Confirmation and identification of Campylobacter spp. through biochemical tests;**
- **Detection of staphylococci enterotoxins, types SEA to SEE in food;**
- **Determination of Antimicrobial Resistance (MIC) for *Salmonella* spp., *Staphylococcus* spp., *E. coli* и *Enterococcus* spp.**

NRL “Salmonella, campylobacter, staphylococci and antimicrobial resistance”-3

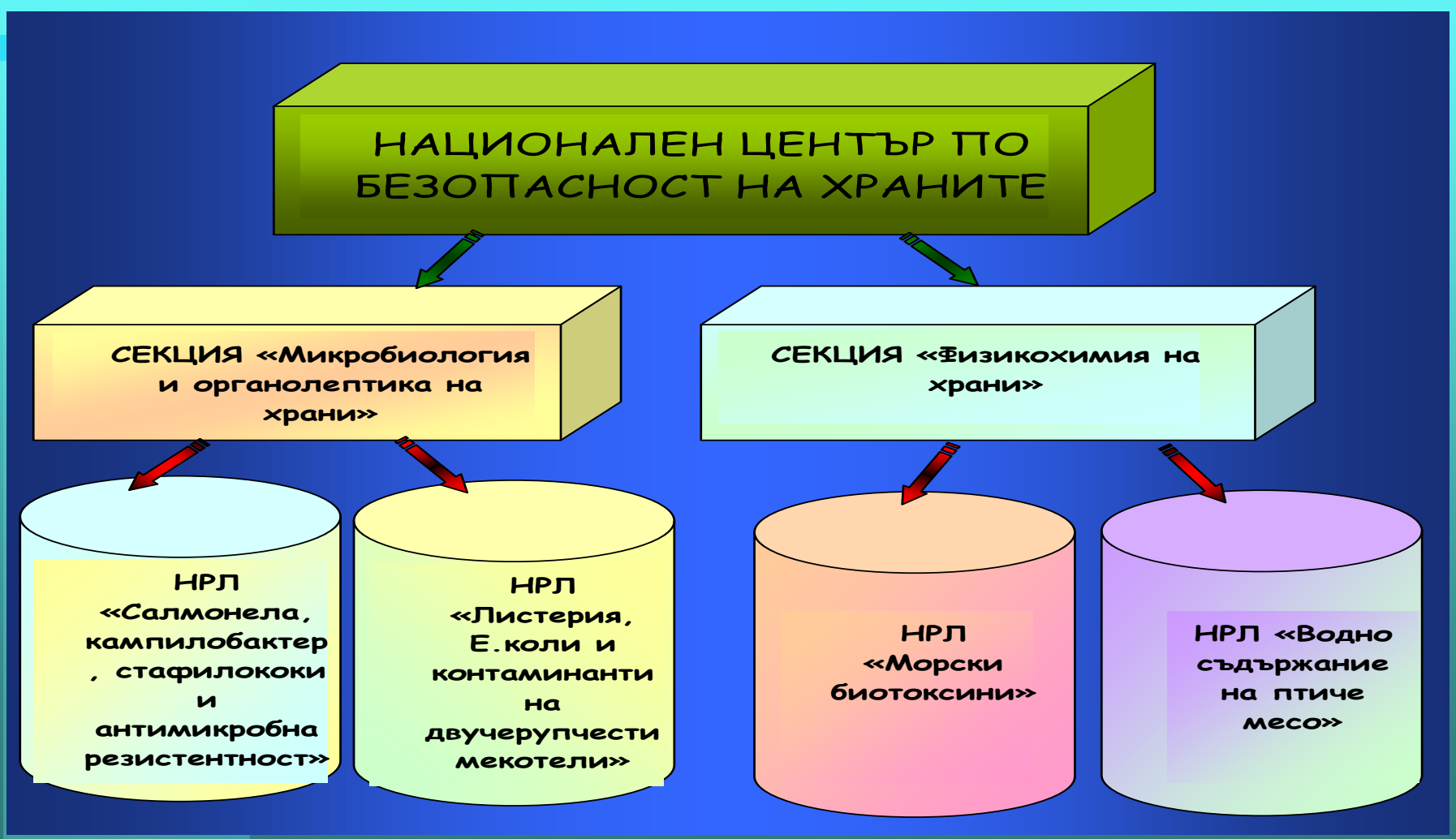
Staff:

- ✓1 professor
- ✓1 assistant
- ✓2 veterinarians
- ✓1 lab. technician

National control programmes for Salmonella in Bulgaria

- **National control programme for Salmonella in breeding flocks *(Gallus gallus)* in Bulgaria;**
- **National control programme for Salmonella in flocks of laying hens *(Gallus gallus)* in Bulgaria;**
- **National control programme for Salmonella in flocks of broilers *(Gallus gallus)* in Bulgaria;**
- **National control programme for Salmonella in flocks of turkey in Bulgaria.**

Structure of National centre of food safety



Salmonella NRL Bulgaria

- **Since 2006 we are National Reference Laboratory for Salmonella**
- **Accreditation according to ISO 17025:**

  - **Salmonella detection : 2006**
  - **Salmonella spp. Serotyping: 2009**
  - **Antimicrobial Resistance : 2014**
  - **Staphylococci (enterotoxins) : 2014**

Cooperation with

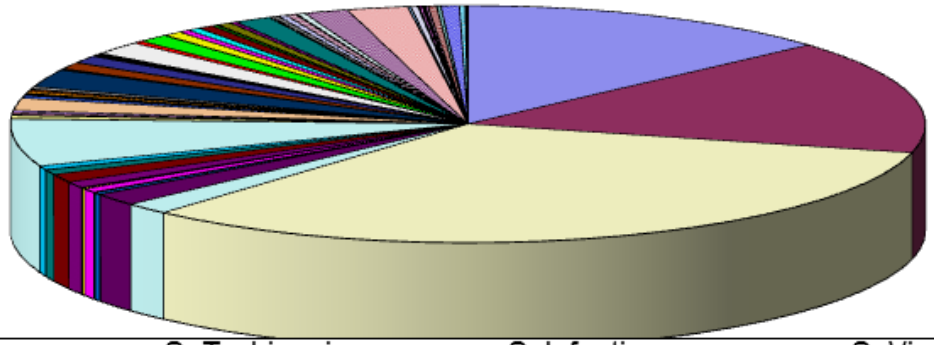
Cooperation with EURL-*Salmonella*:

- Participation in the EURL-*Salmonella* annual workshops (since 2003);
- Participation in the EURL-*Salmonella* Proficiency Tests (since 2007);

Proficiency tests

- **The NRL of *Salmonella* organize inter-laboratory testing of the laboratories in the food safety system and participating private laboratories.**

Salmonella serovars 2006-2016 /n=1995/



S. Enteritidis	S. Typhimurium	S. Infantis	S. Virchow
S. Hadar	S. Hato	S. Cholerae suis	S. Ball
S. Bardo	S. Bareilly	S. Berta	S. Bradford
S. Bredeney	S. Brandenburg	S. Bonariensis	S. Bovismorbificans
S. Branderup	S. Derby	S. Djelfa	S. Gallinarum
S. Glostrup	S. Goldcoast	S. Chester	S. Kottbus
S. Kentucky	S. Stanley	S. Edinburg	S. Edmonton
S. Essen	S. Heidelberg	S. Isangi	S. Abony
S. Agona	S. Altona	S. Amager	S. Anatum
S. Give	S. Leopoldville	S. Livingstone	S. London
S. Manchester	S. Mbandaka	S. Meleagridis	S. Menden
S. Menston	S. Montevideo	S. Muenchen	S. Newlands
S. Newport	S. Nottingam	S. Coeln	S. Colorado
S. Concord	S. Corvallis	S. Oranienburg	S. Othmarchen
S. Paratyphi B	S. Parkroyal	S. Reading	S. Richmond
S. Rissen	S. Senftenberg	S. Sinstorf	S. Stanleyville
S. Stendal	S. Colindale	S. Drypool	S. Duisburg
S. Afula	S. Irumu	S. Lomita	S. Tennessee
S. Thompson	S. Tsevie	S. Kapemba	

Our observations for 2006 - 2016

- **Isolated salmonella is 75% of food and 25% of animals, faeces and other sources**
- **Of the salmonella bacteria in food, the highest % is isolated from poultry meat /approx. 57%/**
- **The most common serovar for the country, obtained from poultry meat, is *S. infantis***

Research activities

- *Use of multiple-locus variable-number tandem-repeats analysis (MLVA) to investigate genetic diversity of Salmonella enterica subsp. enterica serovar Typhimurium isolates from human, food and veterinary sources*, G. Mateva, K. Pedersen, G. Sørensen, G. Asseva, H. Daskalov, P. Petrov, T. Kantardjiev, I. Alexandar, C. Löfström, **accepted for publication**
- *Contamination and Persistence of Salmonella Enteritidis in Stressed and Unstressed Common Carp (Cyprinus carpio L.),* Daskalova A., Pavlov A., Daskalov H., Journal of Biology (**2014**), Vol. 02, Issue 02, pp. 32-38
- *Distribution and serological typing of Salmonella spp. isolates from broiler carcasses in Bulgaria.*Valcheva, R., P. Belopopska, G. Mateva, T. Hristova, H. Daskalov, Bulg. J. Vet. Med., (**2011**)14, No 1, 31−38.
- *Evaluation of Antimicrobial Susceptibility of Human and Veterinarian Non-Typhoid Salmonella Isolates.* Asseva G., G. Mateva, R. Valcheva, K. Ivanova, I. Alexandar, P. Petrov, H. Daskalov , T. Kantardjiev. Scientific conference reports of NDRVMI, (**2011**), pp127 – 131
- *Antimicrobial Resistance of Salmonella Spp. Isolates from Broiler Carcasses in Bulgaria.* Daskalov H., G. Mateva, R. Popova, Scientific conference reports of NDRVMI (**2011**) pp189 – 193

Welcome to Bulgaria!

Thank you for your attention!