Republic of Serbia
Ministry of Agriculture, Forestry and Water Management
Veterinary Directorate

Rabies control and eradication in Serbia

Dr. Budimir PLAVŠIĆ

Content

1. Legal basis (hamonization with OIE and EU control policies)
2. Epidemiological situation
3. Control program
   - Vaccination of dogs and cats
   - Oral vaccination of wild animals
4. Surveillance of Rabies
5. Monitoring of vaccination
6. Awareness program
Legal base

- Rulebook on establishing the measures for early detection, diagnostics, spreading prevention, suppression, and eradication of the Rabies, and the manner of their implementation (Official Gazette of RS, 78/2009)
- Rulebook on establishing Annual Program of Animal Health Protection Measures
- Annual monitoring program
Rabies Epidemiological Situation

- **Last human case:** 1967 (Kosovo province)
- **Animal cases:** 150-250 cases annually - passive surveillance

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Rabies Epidemiological Situation

- **Animal population**: Endemic in wild population (silvatic Rabies); sporadic in domestic/pet population

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Rabies Epidemiological Situation
Passive surveillance – prior to ORV

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<th>Raccoon</th>
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National Rabies Control Program

Vaccination of pet animals

- Compulsory vaccination of dogs and cats
- Serbia invest significant financial resources for control of Rabies in dog&cat population
  - 2007-2008 identification (with transponders) and rabies vaccination sponsored by MoA/VD 100%
  - Registration of dogs and cats in computerized database

Oral rabies vaccination

- In 2006: Feasibility study for oral vaccination of wild carnivores
- Pilot oral vaccinations (2002)
- Comprehensive oral vaccination started in 2010
National Rabies Control Program

Oral rabies vaccination

- Technical assistance
- Procurement of vaccines, vaccination, surveillance and laboratory equipment
  - First campaign: November 2010
  - Second campaign: May 2011
  - Third campaign: November 2011
  - Forth campaign: May 2012
  - Fifth campaign: November 2012
  - Sixth campaign: May 2013
  - Seventh campaign: October 2013
ORV Strategy

- Strategy and multiannual Action plan approved in 2010
- Area to be vaccinated (60,000km²)
- 60,000-80,000 estimated number of foxes
- Minimum 10 campaigns /5 consecutive years/
- Distribution of baits
  - Spring
  - Autumn
- Distribution by fixed-wing aircraft and/or helicopter
- Flight lines distance/corridors 500 m (+/- 50m)
- Bait density (20 – 23 / km²)
ORV Strategy

- Computerized evidence of bait distribution
- GPS/GIS tools
- Oral rabies vaccine with biological marker
- *Training of all stakeholders*
- *Supervision on the field activities*
- *Control of vaccine / baits*
  - determination of virus titer in vaccine
  - stability control of matrix
- Targeted monitoring (4 animals/100 km²)
- Sustainable surveillance
- Training
- Publicity awareness campaign
Evaluation of ORV results

- Evaluation of ORV campaigns
  - Baits distribution maps analyses
  - Monitoring data analyses
  - Surveillance data analyses
  - Publicity awareness campaign

If needed - modification of the Strategy
2011

- 42 positive cases

15 rabies cases in Belgrade sub-urban area
- 12 foxes
- 1 horse
- 1 dog
- 1 cat

Дијагностиковани случајеви бешиља животиња на територији Републике Србије у 2011. години
**Evaluation follow up:**
Modification of ORV Strategy in 2012

**Vaccination of Belgrade sub-urban area**

- Helicopter and/or manual
- Vaccination area 300 km²
- 30 baits/km²
- Minimum 4 campaigns
Post vaccination monitoring

- Period 2011-2013
- 4 samples (foxes) per 100km² (WHO)
- Collaboration with hunters
  - Training,
  - Awareness,
  - Motivation (per sample)
- SMTS / GIS (integrated in VIS, data exchange with LIMS)
Post vaccination monitoring

- Uptaking of baits,
- Seroconversion rate,
- Age determination,
- Virus detection and differentiation vaccine strain from the field strains.

Diagnostic techniques:
1. Fluorescent antibody test (FAT) - detection of viral antigen,
2. ELISA - antibodies detection in sera/body fluids,
3. Examination for presence of tetracycline (TC)
4. Age determination test
5. Virus typing – RFLP

Proficiency testing,
Quality assurance (ISO 17025 Accreditation)
Results

- Relation between the number of sampled animals according to age groups and number of ELISA&TC positive animals
Results

- Comparative results after ORV 2011/2012 and 2012/2013
Results

- Drop of rabies cases parallel with increased success of ORV
Results

- Comparative results according to the age categories. Ab+TC represents proportion of TC positive animals which seroconverted
Awareness campaign

One World One Health concept fully implemented
EU and Serbia funded project

Thank you for attention

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