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## Climate and weather of Kyrgyzstan

The climate of Kyrgyzstan is continental, because Kyrgyzstan is located far from the oceans.

Issyk-Kul is a pearl of Kyrgyzstan



(heads)	2018
Sheep & goats	6,167,949
Poultry	6,009,697
Cattle	812,596
Horses	498,684
Pigs	51,265
Bee colonies	93,892



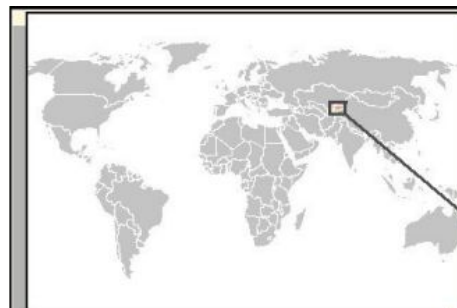
## Livestock industry in Kyrgyzstan

- Population more 6 million
- Main table meats
  - Lamb & mutton
  - Chicken
  - Beef
  - Horse meat
- Main livestock products
  - Dairy
  - Wool and fur
  - Fats and oil
  - Honey

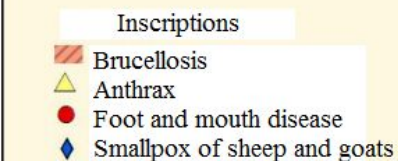
# Important diseases in livestock

- Brucellosis (cattle)
- Anthrax (cattle)
- Foot and mouth disease (cattle)
- Smallpox (small ruminants)
- Rabies mainly in dogs
- Newcastle disease in poultry
- Pasteurellosis
- Leptospirosis
- Salmonellosis
- Chlamydia
- Emphysematous carbuncle in cattle
- Echinococcosis in dogs

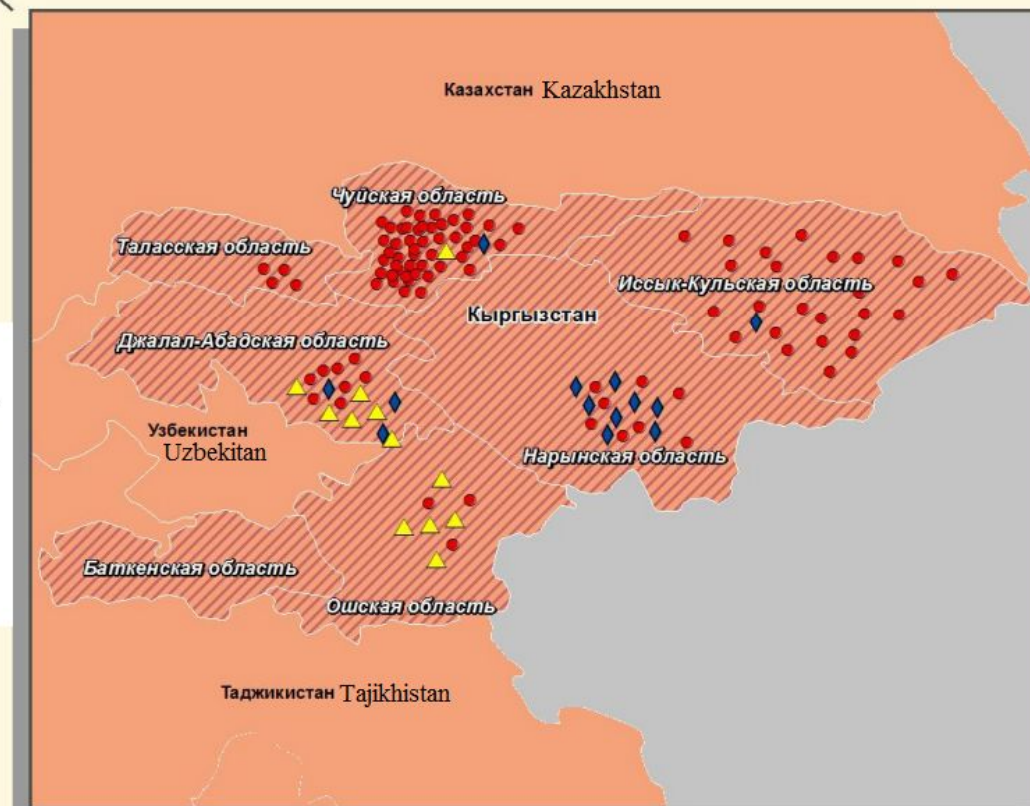
In the Kyrgyz Republic there is only one Program for the Eradication for **Echinococcosis**.



## Epizootic situation in Kyrgyzstan for some infectious diseases of animals



Kyrgyzstan		Amount per year					
Diseases		2010	2011	2012	2013	2014	2015
Brucellosis	+	+	2536	1701	–	–	–
Smallpox	+	1	2	10	–	–	–
Anthrax	4	5	1	1	–	1	–
FMD	10	66	36	–	1	–	–







# Problems in securing Animals Health

## Laws and regulations

- No regulation to stop movement of diseased animals

## Finance

- No compensation for farmers to slaughter diseased animals
- No enough funding for diagnostic services

## Laboratory

- Few certificated laboratories for diagnosis
- Vets are not qualified for diagnostics skills



# Kyrgyz Scientific Research Institute of Veterinary Medicine

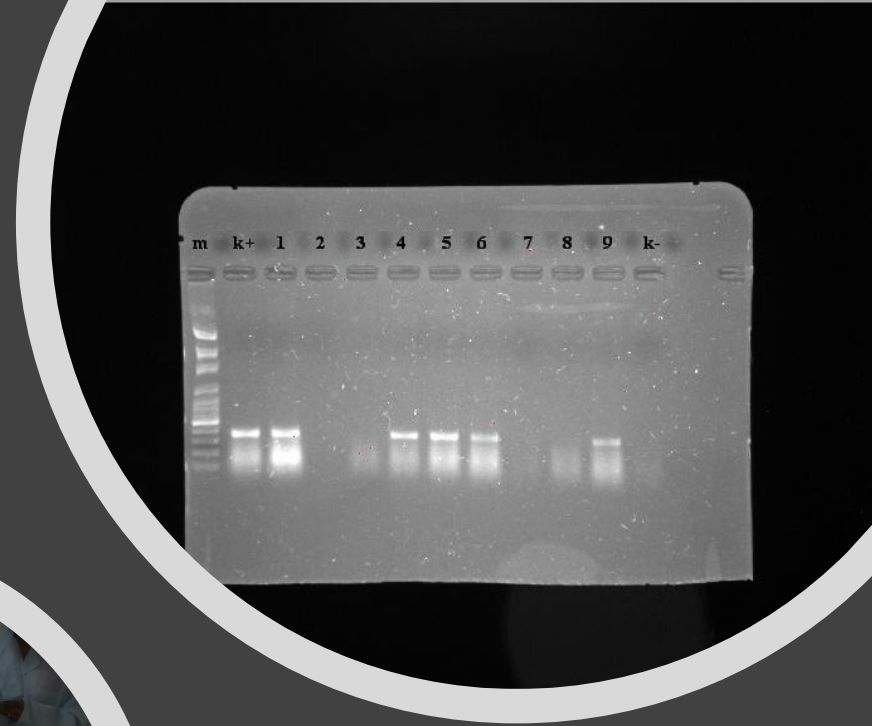
- One of the oldest scientific centers for veterinary medicine
- Research Laboratories on
  - Epidemic infectious diseases (FMD, respiratory diseases in cattle etc.)
  - Brucellosis
  - Parasitology
  - Domestic animals (canine parvovirus, canine distemper virus, feline panleukopenia etc.)
  - Virology (cattle, small ruminants, poultry)
  - Bees





# My work in Kyrgyzstan

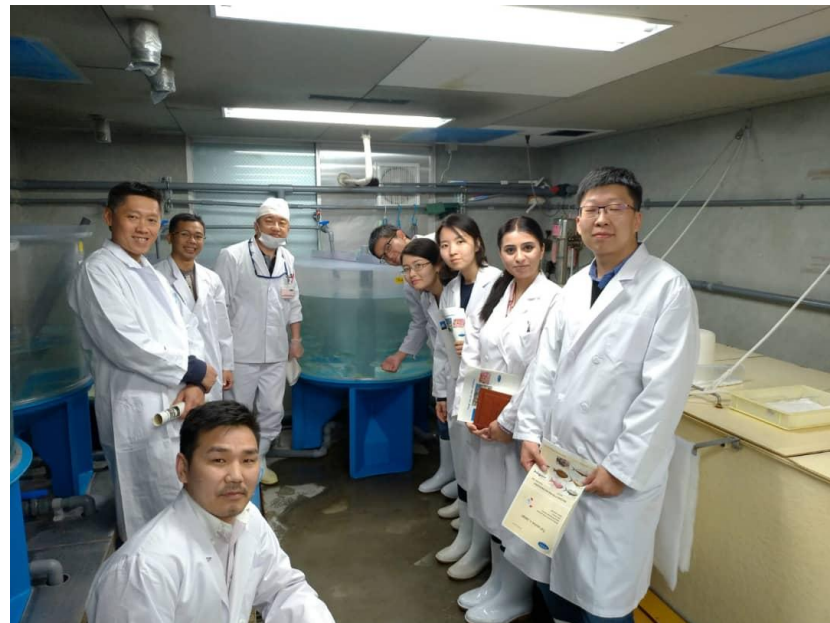
- Monitoring of infectious diseases
- Development and improvement of the specific prevention and treatment of infectious diseases
- Serological and molecular characterization of pathogens to design domestic vaccines and diagnostic products



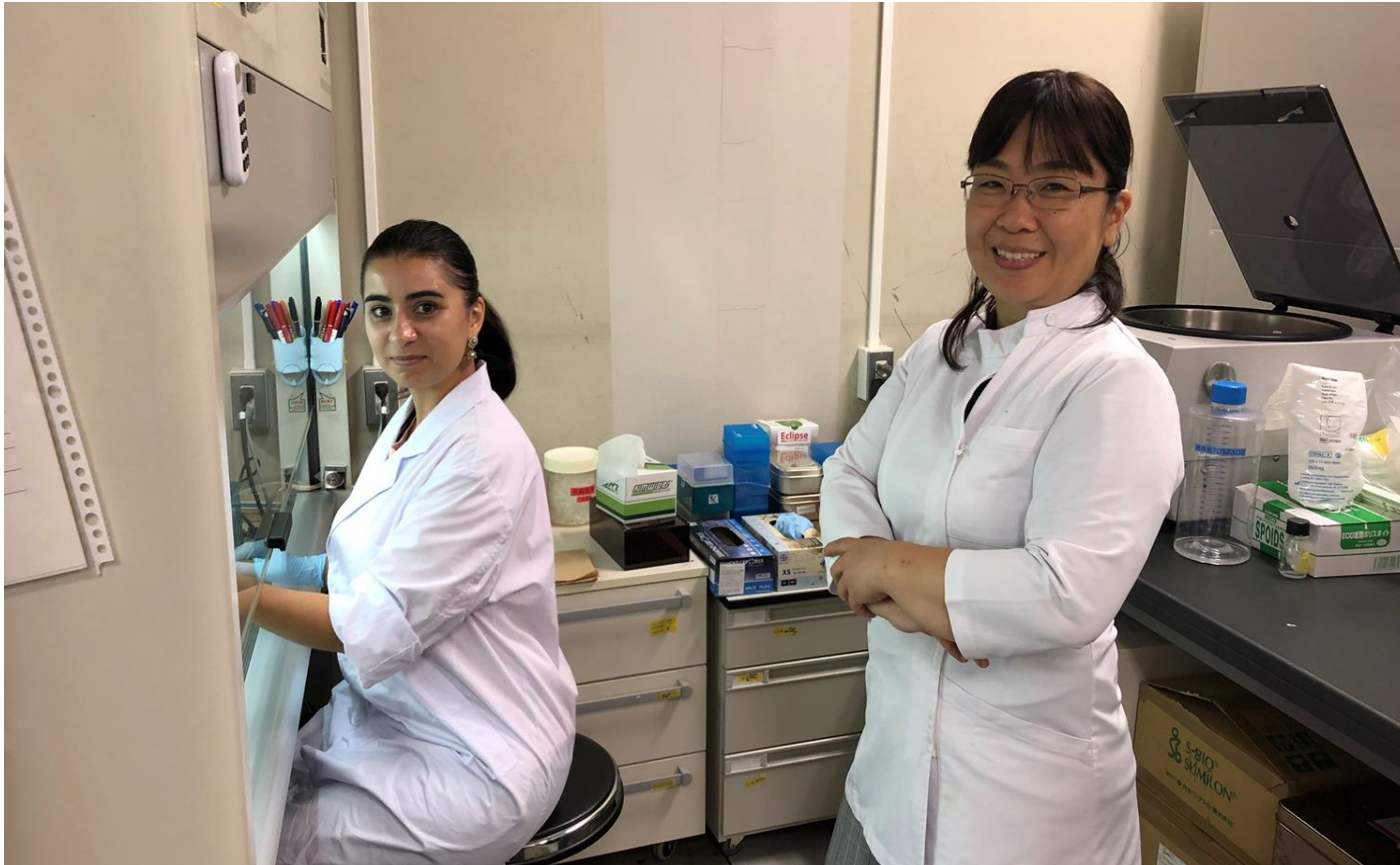




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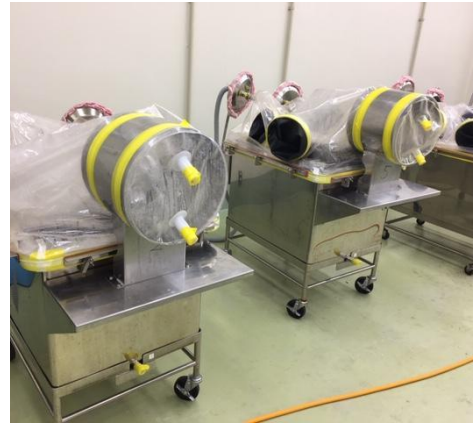
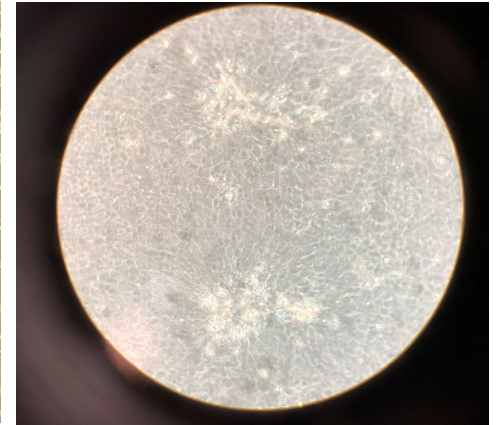
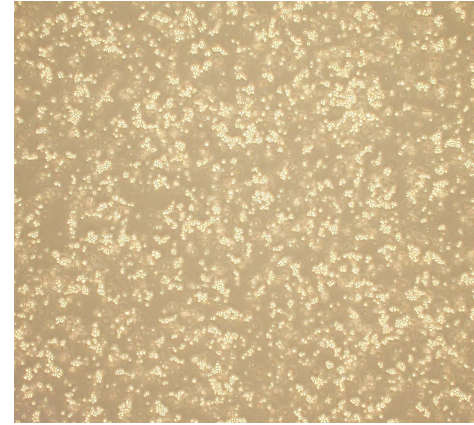
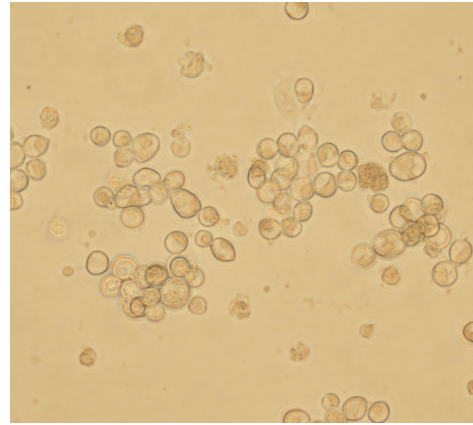
My work in Tsukuba  
“Diagnosis of viral diseases in livestock  
animals”

1. Practicing the basic policies and protocols for bio-safety and bio-security at NIAH
2. Learning basics of virology, immunology and molecular epidemiology
3. Acquiring virology skills
4. Acquiring molecular skills
5. Working on preparing scientific presentation and drafting scientific paper



# Acquiring new knowledge

- Learned basic techniques of virology
  - ✓ cell culture
  - ✓ virus propagation and titration
  - ✓ virus neutralization tests
    - Classical swine fever virus,
    - Foot and mouth disease virus in Kodaira
    - Pseudorabies virus
    - Bovine viral diarrhea virus in Tsukuba
- Helped animal experiments using gnotobiotic piglets in NIAH





# Molecular characterization of Rabbit Hemorrhagic Disease

## Rabbit Hemorrhagic Disease

- highly infectious and often fatal disease of rabbits
- caused by Rabbit Hemorrhagic Disease virus
- high morbidity and mortality (70-90 %)
- Nervous and respiratory signs

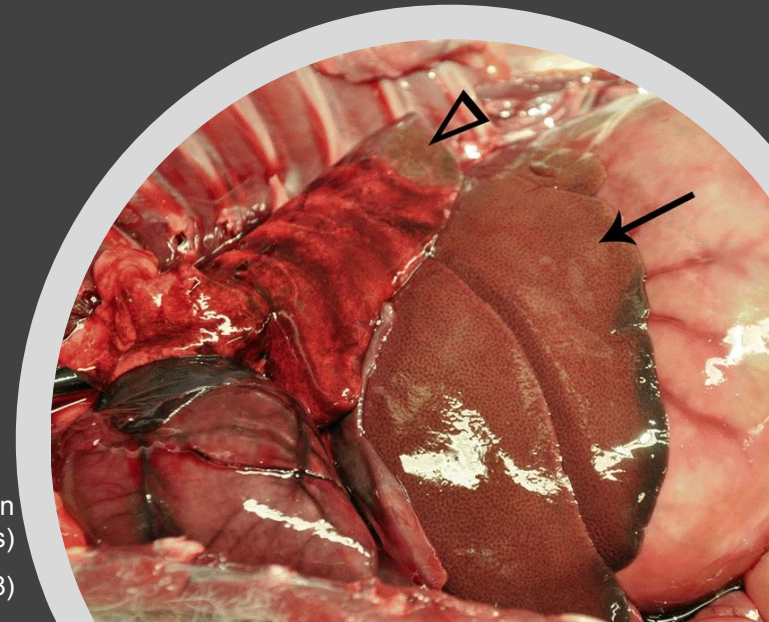
Emergence of highly pathogenic strains since 2010 in Europe and Australia

Two new suspected cases in 2019 in Japan (no outbreak since 2002)

- Need to characterize the virus to understand whether they are from the past domestic outbreaks in 2002 or introduction of emergent strains from other countries

I have collected data for a molecular epidemiological study

And searched literatures to draft scientific reports



Overcoming species barriers: an outbreak of *Lagovirus europaeus* GI.2/RHDV2 in an isolated population of mountain hares (*Lepus timidus*)

BMC Veterinary Research volume 14, Article number: 367 (2018)





Thank you Japan Veterinary Medical Association  
and  
National Institute of Animal Health for this opportunity!











**ご清聴ありがとうございました**  
**Thank you for your attention!**