

ПРЕЗЕНТАЦИЯ

PRESENTATION

International
conference on Food
Safety Risk Analysis
and Antimicrobial
Resistance

Moscow, Russian
Federation, 17- 18
12/2019

Международная
конференция по
вопросам анализа
риска безопасности
пищевой
продукции и
устойчивости к
противомикробны
м препаратам

Москва, Российская
Федерация, 17 -18
12/2019



Achievements on reducing prevalence rate of Antimicrobial Resistance in the Kyrgyz Republic

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General situation in the Kyrgyz Republic

At the outpatient level there is a high level of use of antimicrobial drugs from the group of third-generation cephalosporins - cefatoxime and ceftriaxone, causes concerns. This practice leads to the fact that in hospitals, for the initial treatment of infections, patients are usually immediately prescribed antimicrobial drugs from the reserve group. By the consumption of antimicrobial drugs at PHC level at the hospital level, the Kyrgyz Republic is in the top five among the countries of the European Union.

Along with this, as shown by the analysis of antimicrobial drugs prescription, in some hospitals in 73% of cases, antimicrobial drugs are prescribed irrationally (in terms of choice of antimicrobial drugs, dosage, frequency and method of administration), and the main cause is unjustified (unreasonable) prescribing - 48.6%.

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Experience of the Kyrgyz Republic on AMR

- The Resolution of the Government of the Kyrgyz Republic dated 04.22.15, No. 232 "On Amendments and Additions to the Decree of the Government of the Kyrgyz Republic dated 05.01.11, No. 2 *"On approval of the procedure for writing prescriptions for medicines and on their dispensing in the Kyrgyz Republic"*.
- This Resolution approves new prescription forms.
- The Resolution of the Government of the Kyrgyz Republic dated August 5, 2013 No. 444 approved the Technical Regulation *"On Safety of Veterinary Medicines"*. Chapter 3 (Conformity assessment) of the said regulation sets forth the procedure for state registration.
- The Resolution of the Government of the Kyrgyz Republic dated May 22, 2014 No. 268 approved the Technical Regulation *"On safety of feed and feed additives"*.

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Experience of the Kyrgyz Republic on AMR

- OIE/WHO/FAO Subregional Meeting on Implementation of National AMR Action Plans for Central Asian Countries (June 2017)
- Development and implementation of measures to create the conditions for the rational use of antimicrobial drugs in all areas (health, veterinary medicine, the agricultural sector)
- Formation of a system for monitoring the resistance of microorganisms by optimizing the activity of the microbiological laboratory service
- Laboratory assessment based on ATLASS was performed

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Experience of the Kyrgyz Republic on AMR

- An interdepartmental working group has been created (MoH KR, SIVPS under the Government of KR, MAFI&A of the KR)
- A national program to reduce the spread of AMR (in the process of signing) was developed
- **Principal Responsible Agencies:**
 - Ministry of Health of the Kyrgyz Republic, Ministry of Agriculture, Food Industry and Land Reclamation of the Kyrgyz Republic.
 - State Inspectorate for Veterinary and Phytosanitary Safety under the Government of the Kyrgyz Republic.

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OBJECTIVES OF THE PLAN:

- Raising awareness of the main stakeholding departments, organizations, society as a whole about the risks associated with the resistance of microorganisms to antibiotics for humans, food, animals, plants and the environment
- Development of integrated systems for the surveillance and monitoring of food circulation regarding the presence/absence of antibiotics, assessment and strengthening of the capacity of national laboratories to collect and exchange information on the detection of antibiotics in food raw materials and food products
- Promoting the development of good practices in the public health and agricultural sectors to reduce the use of antibiotics, preparing the rationale and implementing multisectoral collaboration in target countries

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Informative events the framework of the World Antibiotic Rational Use Week



«Здоровье (ЖКХ)» - На сегодняшний день возрастает проблема, создающая угрозу здоровью населения — устойчивость к антибиотикам. Об этом на пресс-конференции в Бишкеке 10 ноября заявил заместитель министра здравоохранения Тимур Петров.

По его словам, направленные усилия властей действительно приводят к



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Informative events within the framework of the World Antibiotic Rational Use Week



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Project work :

- A report on legislation, including recommendations to strengthen national legislation on AMR, was provided to national partners. Based on these recommendations, the Kyrgyz government has expressed interest in receiving additional support from FAO for revising feed legislation.
- FAO international experts assessed the capacity of veterinary laboratories and the surveillance of the veterinary service for AMR using the ATLASS assessment tool. ATLASS Mission Report with recommendations was presented to national partners.
- An interagency coordinating committee has been set up for the use of antimicrobials and antimicrobial resistance (AMU/AMR), composed of representatives from the Ministry of Agriculture, the Ministry of Health and the State Veterinary Inspectorate. Regular meetings and consultations are held with national partners on the use of antimicrobials.
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Project work:

- The State Veterinary Inspectorate has established an epidemiological structure (unit for epidemiological survey of pharmacies) to monitor AMR in the food and agricultural sectors, designed to control the use and sale of drugs in the veterinary sector.
- Lectures are held at universities and colleges to promote the responsible use of antibiotics in humans and animals to inhibit the development of antibiotic resistance. Press conferences and round tables are held in the media with the participation of representatives from the Ministry of Health, State Veterinary Inspectorate, Ministry of Agriculture, WHO and FAO.
- Consultations were held with the participation of stakeholders in all areas of the republic aimed at raising awareness of SCP. Together with WHO and national partners, a National Action Plan (NAP) was developed to contain antimicrobial resistance, under discussion by interested parties, and before the end of the year, SVI, MH, and MOA will be signed. Traveling photo exhibition at the Ministries of the Kyrgyz Republic / Kyrgyz National Agrarian University / Bishkek College of Medicine during World Awareness Week 2018.
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Coordination of activities aimed at restraining resilience to antimicrobials

- Ensure effective inter-agency and intersectoral coordination by the Working Group on AMR, which has official status. Coordinating data exchange between sectors.
- Participation in the prevention of smuggling and illicit sale and distribution of antimicrobials in all sectors.
- Supporting existing and developing potential areas and projects of international cooperation within the framework of the Eurasian Economic Union, BRICS, the Commonwealth of Independent States, WHO, the United Nations and other international partners to prevent the spread of antimicrobial resistance.

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Laboratory Service in the Republic

- Testing laboratories of the Ministry of Health of the Kyrgyz Republic operate in the republic in 50 regional Centers of state sanitary and epidemiological surveillance, of which 14 testing laboratories are accredited for compliance with the international standard ISO/IEC 17025;
- 6 testing laboratories (4-in the north, 2- in the south) are included in the Unified Register of conformity assessment bodies and testing laboratories of the Customs Union.
- There are 19 testing laboratories operating under the State Veterinary and Phytosanitary Safety Inspectorate, 2 of them are accredited for compliance with the international standard ISO/IEC 17025

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Determination of residual antibiotics in animal foods

Prolonged use of antimicrobial products of animal origin in food can cause adverse health effects, contribute to the emergence of antibiotic resistance and the development of resistant forms of microbes.

Most often, antimicrobials enter food products from raw materials of animal origin. Antimicrobial agents may be present in livestock and poultry raw materials, as well as in products of their processing:

- a) tetracycline group - in milk, dairy products, eggs, meat, meat products, offal, honey;
- b) streptomycin - in milk, dairy products, eggs;
- c) penicillin - in milk, dairy products;
- d) zincbacitracin - in meat, meat products, offal;
- e) chloramphenicol - in meat, meat products, milk, dairy products, eggs, honey.

The presence of streptomycin, penicillin, and other antimicrobial agents in milk may be due to the use of these drugs for treatment of animals, including mastitis in cows, with long-acting oil-based drugs.

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The most dangerous and common contaminants

- Microorganism toxins
- Toxic elements (heavy metals)
- Antibiotics
- Pesticides
- Nitrates, nitrites, nitrosoamines
- Dioxins and Dioxin-Like Compounds
- Polycyclic Aromatic Hydrocarbons
- Nutritional supplements

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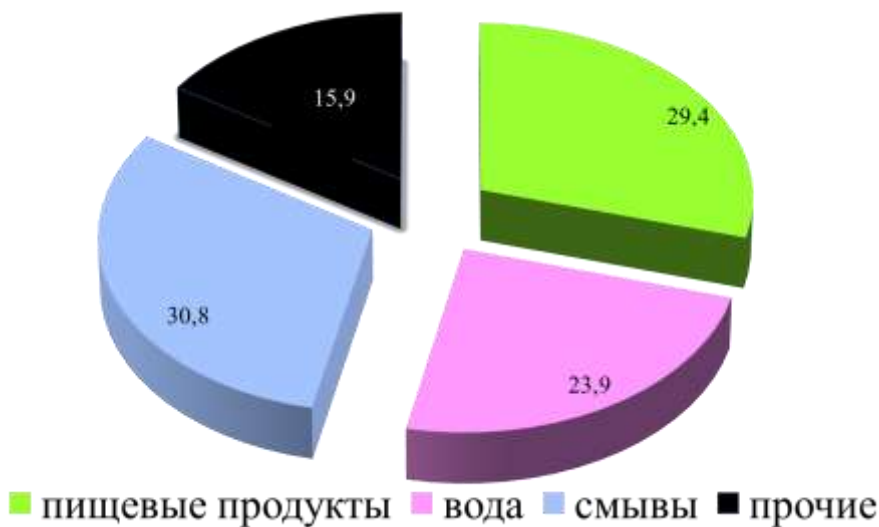
**Indicators of contamination of food samples with
residual amounts of antibiotics
(for the period 2008-2013) ***

Matrix	Antibiotic									
	Tetracycline		Streptomycin		Zincbactriatracin		Penicillin		Levomicetin	
	Quantity	«+» result	Quantity	«+» result	Quantity	«+» result	Quantity	«+» result	Quantity	«+» result
Raw milk	589	15	589	14	-	-	589	25	589	3
Dairy products	151	3	151	4	-	-	151	-	151	-
Meat products	288	22	-	-	288	11	-	-	288	-
Beef (meat)	64	6	-	-	64	2	-	-	64	-
Poultry (meat)	49	6	-	-	49	1	-	-	49	-
Eggs	22	1	22	-	-	1	-	-	22	-
Honey	4	-	4	-	-	-	-	-	4	-

The number of regulated antibiotics in food

- TP TC 021/2011 ~ 6
- TP TC 034/2013 ~ 51
- TP EAЭC 040/2016 ~ 22
- Regulation EC 2377/90 and CAC/MRL 2 (Codex Alimentarius) ~ 66

Laboratory tests structure (2018,%)



What has been done within the framework of the project :

- In 2018, test systems were received for determining the residual amounts of antibiotics in food products : tetracycline, streptomycin, chloramphenicol, bacitracin.
- Samples were delivered from the northern DP&SES (Karakol, Naryn, Talas, Chui, Bishkek). 376 ELISA tests were performed:

Names of samples	tetracycline	streptomycin	chloramphenicol	bacitracin
Milk, dairy products	35	35	35	35
Meat, meat products	35	35	35	35
Honey	24	24	24	24
TOTAL:	94	94	94	94

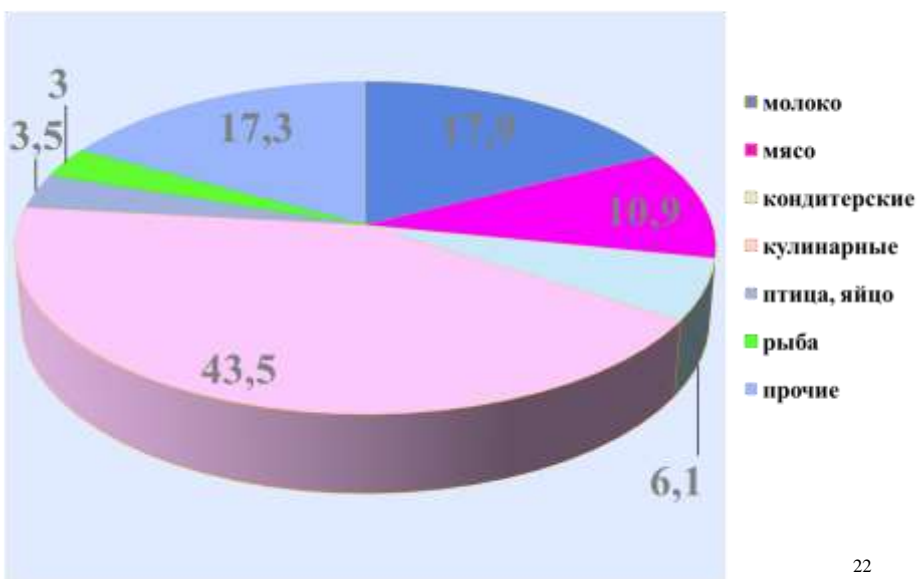
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What has been done as part of the project :

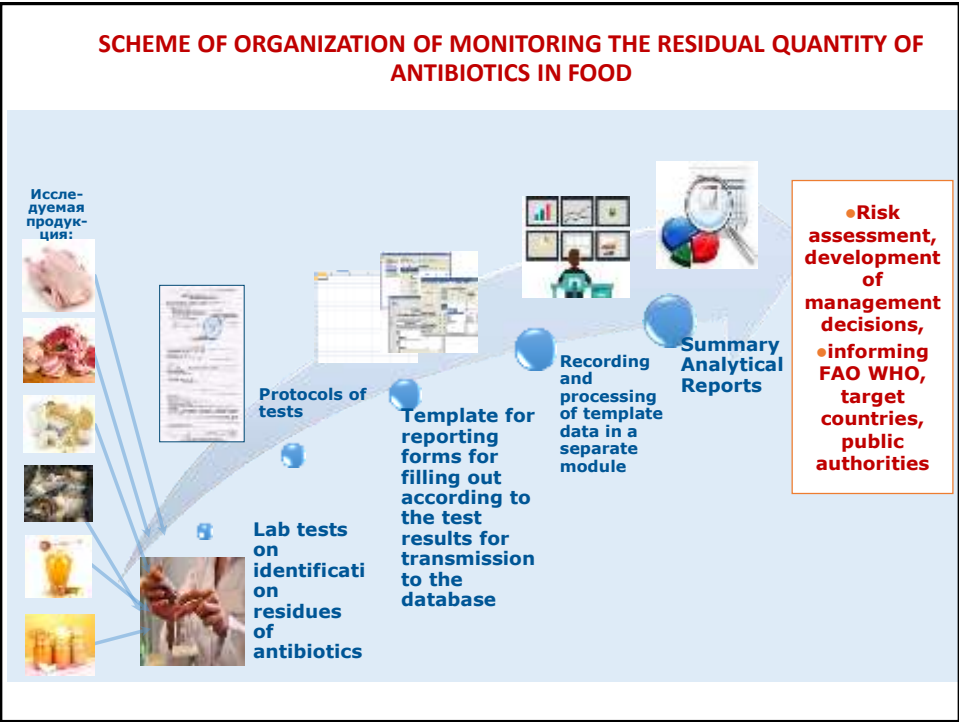
- A total of 66 cultures from the Enterobacteriales family were isolated, including 6 cultures of Salmonella in foodborne toxic infections (food products). In all cases, ESBL was not detected.
- 6 ESBL cultures, 4 MRSA cultures, were isolated from clinical materials of 1 cow.
- A software product for a single database of information on antibiotic resistance and monitoring of food products has been installed in the DPS & SSES;
- For 2018-19, the collected material / isolated strains from food products and clinical material (165) were sent for further identification to the reference laboratory of the Moscow Federal University of Health and Medicine.

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The structure of the tested food samples (%)



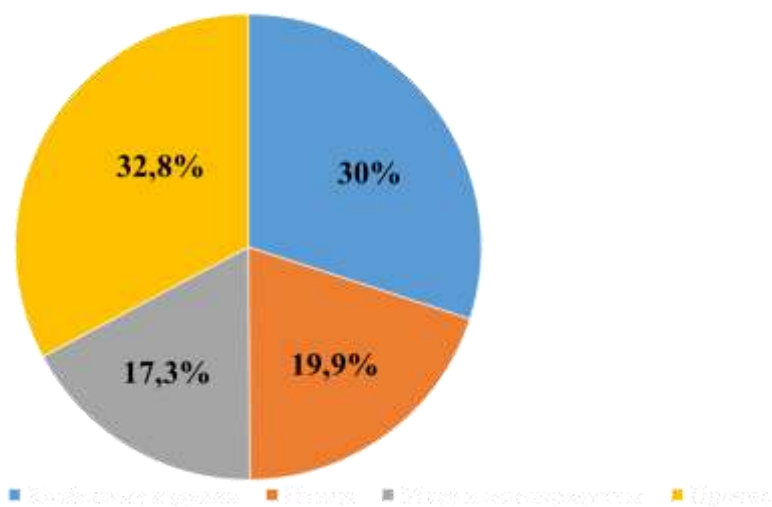
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The number of tested samples for antibiotics

Country	2018 – 2019.
The Russian Federation (reference bases of the Reference Center)	4090
Partner countries (Armenia, Belarus, Kazakhstan, Kyrgyzstan, Tajikistan)	6289
Total	10379

The structure of food and food raw materials in which antibiotics were detected



The tested antimicrobials in food raw materials and food products

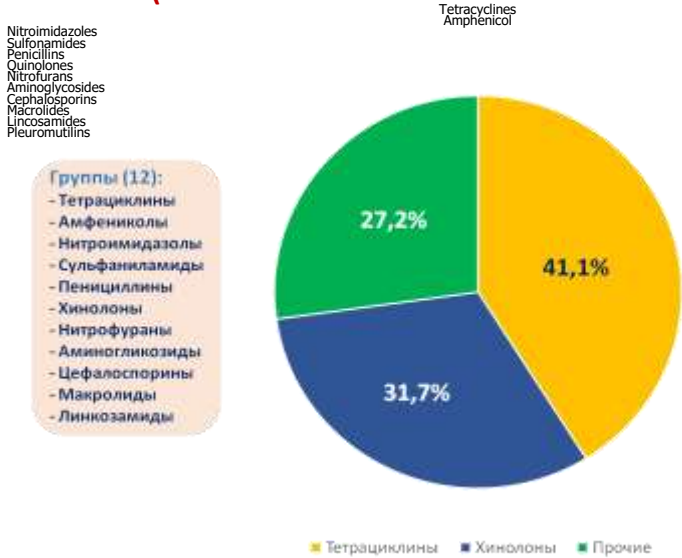
2018 – 8 groups (46 medicines)

- Tetracyclines
- Amphenicol
- Nitroimidazoles
- Sulfonamides
- Penicillins
- Quinolones
- Nitrofurans
- Aminoglycosides

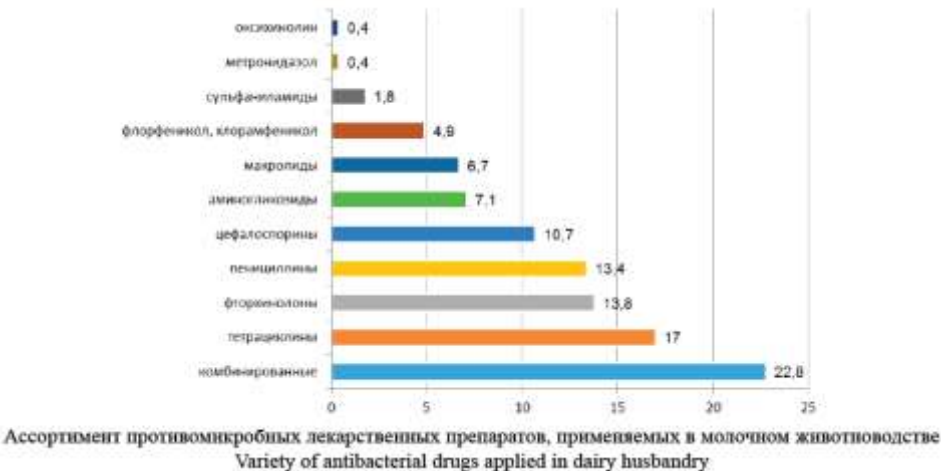
2019 – 12 groups (95 medicines)

- Tetracyclines
- Amphenicol
- Nitroimidazoles
- Sulfonamides
- Penicillins
- Quinolones
- Nitrofurans
- Aminoglycosides
- Cephalosporins
- Macrolides
- Lincosamides
- Pleuromutilins

The most frequently detected antibiotics from the studied 95 items (12 groups) in пс and пп (% of the total number of contaminated samples)



Antibiotics used in animal husbandry



● Boyko T. V., Gerunova L. K. Analysis of the assortment of chemotherapeutic agents used in dairy farming in Russia

MILK

Isolation of residual antibiotics

- ❖ tetracycline (38.4%),
- ❖ norfloxacin (23.1%), enrofloxacin (15.4%) (2 generation fluoroquinolones),
- ❖ sulfamethazine (7.7%),
- ❖ chloramphenicol (7.7%),
- ❖ oxytetracycline (7.7%)

Identification of residual antibiotics

Poultry	Meat	Meat products
<ol style="list-style-type: none"> 1. doxycycline (62.9%), 2. enrofloxacin (fluoroquinolones of the 2nd generation) (34.3%), 3. bacitracin (2.8%) 	<ol style="list-style-type: none"> 1. oxytetracycline (27.6%), 2. ofloxacin (27.6%), 3. doxycycline (13.8%), 4. bacitracin (8.6%), 5. enrofloxacin (6.9%), 6. sulfadiazine (6.9%), 7. chlortetracycline (5.2%), 8. tetracycline (1.7%), 9. trimethoprim (1.7%) 	<ol style="list-style-type: none"> 1. enrofloxacin (30.1%), 2. oxytetracycline (23.3%), 3. doxycycline (23.3%), 4. benzylpenicillin (16.7%), 5. norfloxacin (3.3%), 6. sulfamethazine (3.3%)

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Number of tests conducted to determine residual amounts of antibiotics by partner countries

Country	Number of tests presented in partner country reports	Test results
1	128	residual amounts of antibiotics not detected
2	144	
3	1945	46 tests with exceedences of ДУ (2,4%)
4	28504	58 tests with exceedences of ДУ (0,2 %)
5	Data have not been presented	
TOTAL	30721	104 (0,3%)

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Qualification Checks - 2018

- Sample - milk powder, laevomycetin
- Results
- Quality detection - 94%
- quantification - 86%

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**THANK YOU FOR YOUR
ATTENTION**

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