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ADOP 2023

Third International Conference on
Agriculture Digitalization and Organic Production

ADOP 2023

Conference Programme and Abstracts

June 5–7, 2023
St. Petersburg
Russia

СПб ФИЦ РАН

Springer

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Conference Programme

Monday, June 5, 2023	
09:00-10:00	**On-line Registration**
10:00-10:15	**Opening Ceremony (room 401)** https://us06web.zoom.us/j/87926743169?pwd=Y1RWWGtua1JtWEgyZEZob3ZUNlp4UT09 **Chair: Andrey Ronzhin**
10:15-12:15	**Plenary Session: (room 401)** https://us06web.zoom.us/j/87926743169?pwd=Y1RWWGtua1JtWEgyZEZob3ZUNlp4UT09 **Chair: Andrey Ronzhin**
	Keynote lecture 1: *Alexander Kostyaev.* Socio-Economic Problems of Digital Transformation of Rural Areas
	Keynote lecture 2: *Andrey Ivanov and Igor Savin.* Digital Technologies for Optimizing the use of the Resource Potential of Russian Lands in Agriculture
	Keynote lecture 3: *Sergey Pulnikov.* From Consumer to Investors – Digital Cooperation for the Mobilizational Economy of Russia
	Keynote lecture 4: *Elena Semenova.* Problems of Marketing of Organic Agricultural Products
12:15-12:30	**On-line Joint Photography of Conference Participants**
12:30-14:00	**Lunch break**
14:00-16:00	**Oral Session 1: Strategic and Regional Factors of Organic Production (room 401)** https://us06web.zoom.us/j/87926743169?pwd=Y1RWWGtua1JtWEgyZEZob3ZUNlp4UT09 **Chair: Galina Nikonova**
	Valentina Kundius and Noov Bayarsukh. Organic Agriculture as a Strategic Factor of a New Quality of Economic Growth
	Natalya Nikonova. Global Trends in the Production and Consumption of Organic Products
	Natalya Zaruk, Yuliya Romantseva, Maria Kagirova, Muzaffar Aramov, and Shukhrat Zhumaev. Analysis of the State and Location of Organic Crop Production in Australia
	Aleksey Nikonov. Improving the Competitive Strategies of Organic Agricultural Producers
	Galina Nikonova, Svetlana Timoshenko, and Habas Bekulov. About Staffing the Production of Organic Products in Russia
	Aleksandr Nesmyslenov. Methodological Approach to the Assessment of the Development Opportunities of Organic Plant Production – Regional Aspect
14:00-16:00	**Oral Session 2: Interdisciplinary Aspects of Organic Agriculture (room 406)** https://us06web.zoom.us/j/87926743169?pwd=Y1RWWGtua1JtWEgyZEZob3ZUNlp4UT09 **Chair: Evgenia Rakhimova**
	Magomed Chabaev, Zhenis Ramazanov, Roman Nekrasov, and Evgenia Tuaeva. Improving the Quality of Haylage as Part of the Strategy of Organic Production of Livestock Products
	Yan Li and Viktar Lemiasheuski. Review of Publications on the Study of Poultry Manure Problems in Environmental Pollution and Its Reuse
	Astghik Pepoyan, Vardan Tsaturyan, Vardges Manukyan, Ivan Egorov, and Larisa Ilina. Novel Probiotic Lactiplantibacillus Plantarum Str. ZPZ as a Possible Candidate for "One Health" Probiotic
	Georgiy Laptev, Valentina Filippova, Larisa Ilina, Elena Yildirim, Darya Turina, Elena Gorfunkel, Andrey Dubrovin, Veronika Melikidi, Kseniya Kalitkina, Irina Kluchnikova, Ekaterina Ponomareva, Dmitriy Gromov, and Jie Zhu. Influence of Glyphosate Herbicide on the Functional State of the Poultry Intestine Microbiome
	Jan Puhalsky, Svyatoslav Loskutov, Anton Savelyev, Jacob Shiffon, Gleb Postnikov, Polina Kaushan, and Mikhail Vinogradov. Prospects for the Use of

	Additives in the Form of Fly Ash and Coke Breeze in the Creation of Soil Mixtures for Growing Plants
	Ludmila Bakina, Marina Chugunova, Alexander Gerasimov, and Yulia Polyak. Efficiency Evaluation of the Rehabilitation of Oil-contaminated Agricultural Soddy-podzolic Soils
16:00-16:30	**Coffee break**
16:30-18:00	**Oral Session 3: Approaches to the Production of Organic Agricultural Products (room 401)** https://us06web.zoom.us/j/87926743169?pwd=Y1RWWGtua1JtWEgyZEZob3ZUNlp4UT09 **Chair: Vladimir Surovtsev**
	Georgiy Laptev, Darya Turina, Elena Yildirim, Larisa Ilina, Elena Gorfunkel, Valentina Filippova, Andrey Dubrovin, Veronika Melikidi, Natalya Novikova, Kseniya Kalitkina, Vitaliy Molotkov, Ekaterina Ponomareva, Dmitriy Gromov, and Michael Romanov. Analysis of Changes in Broiler Microbiome Biodiversity Parameters Due to Intake of Glyphosate and Probiotic Bacillus Sp. Gl-8 Using Next Generation Sequencing
	Konstantin Ostrenko, Natalia Nevkrytaya, Anastasia Ovcharova, Ivan Kutyin, and Kirill Koltsov. Effect of Essential Oils of Coriander and Fennel on the Nonspecific Resistance of Dairy Calves
	Nadezhda Bogolyubova, Roman Nekrasov, Aloyna Zelenchenkova, Roman Rykov, Nikita Kolesnik, Natalia Volkova, Anastasia Vetokh, and Julia Bogolyubova. Metabolic Processes Indicators in Chickens of Different Productivity Directions and Their Relationship with the Composition of Muscle Tissue
	Ivan Perov, Kiro Petrovski, and Esmaeil Ebrahimie. Differences in Milk Production Curves on Ten Dairy Farms with Automated and Conventional Milking System in South-East Australia
	Mehak Rai Sethi, Vandana Singh. Sowing the Seeds of Change: a Study of Technology and Plant Breeding in Indian Agriculture from Stakeholder Perspectives
16:30-18:00	**Oral Session 4: Opportunities, Limitations and Digital Aspects of Organic Production (room 406)** https://us06web.zoom.us/j/87926743169?pwd=Y1RWWGtua1JtWEgyZEZob3ZUNlp4UT09 **Chair: Abusupyan Dibirov**
	Khapsat Dibirova. Opportunities and Constraints for the Development of Organic Production in Small-scale Farms in the North-West of Russia
	Petr Akmarov, Olga Abramova, Olga Knyazeva and Ekaterina Alypova. Development of the Labor Potential of Agricultural Production on the Basis of Improving the Digital Competencies of the Rural Population
	Lyubov Vinnichek and Nadezhda Smelik. Research of Regional Shifts in the Provision of Information Technologies
	Georgiy Laptev, Elena Yildirim, Larisa Ilina, Ekaterina Ponomareva, Kseniya Kalitkina, Darya Turina, Valentina Filippova, Andrey Dubrovin, Khairullamin Bashir, Tatyana Smetannikova, Ivan Malakhov, Natalya Novikova, and Michael Romanov. Effect of a Probiotic Strain Administration in Different Feeding Phases on α- and β-diversity and Gene Expression of the Rumen Microbiome in Lactating Cows
	Sophya Popletaeva, Denis Erokhin, and Vitaly Dzhavakhiya. Comparison of the Protective Activity of Elicitor Proteins MF2 and MF3 Applied Individually or in Combination Against Tobacco Mosaic Virus on Tobacco Leaves
18:00-20:00	**Social event**

Oral Session 3: Approaches to the Production of Organic Agricultural Products



Georgiy Laptev, Darya Turina, Elena Yildirim, Larisa Ilina, Kseniya Kalitkina, BIOTROF+ LLC., Pushkin, St Petersburg, Russia.
Elena Gorfunkel, Valentina Filippova, Andrey Dubrovin, Veronika Melikidi, Natalya Novikova, Vitaliy Molotkov, Ekaterina Ponomareva, BIOTROF LLC, Pushkin, St Petersburg, Russia.
Dmitriy Gromov, St. Petersburg State Agrarian University, Pushkin, St. Petersburg, Russia.
Michael Romanov, School of Biosciences, University of Kent, Canterbury, UK.
Lecture Title: Analysis of Changes in Broiler Microbiome Biodiversity Parameters Due to Intake of Glyphosate and Probiotic Bacillus Sp. GI-8 Using Next Generation Sequencing.
Abstract: In recent years, there have been more data that the nonselective herbicide glyphosate (GLY) can negatively impact gut bacterial communities. The aim of our study was to investigate the composition of broiler caecal microbiome under chronic exposure to GLY and the introduction of a probiotic microorganism strain into the diet. 120 broilers were divided into three groups: Group 1 of control birds fed the basic diet (BD); Group 2 of experimental birds fed BD supplemented with GLY; and Group 3 of experimental birds fed BD supplemented with GLY and a probiotic strain of the microorganism Bacillus sp. GL-8. For analysis we used the next generation sequencing (NGS) technique. Under Due to GLY administration, there was a trend of lowering the biodiversity of normal microflora representatives, along with the intestinal colonization by undesirable forms of microorganisms. In particular, when adding GLY (Group 2), we observed a decreased number of Tepidimicrobium representatives (0.001±0.00006%) that ferment indigestible polysaccharides, while in Group 1 their content was greater (0.3±0.02%; $P \leq 0.05$). In Group 3 with probitic there was a lower number of Firmicutes (by 16.7%) and a rise in the number of Bacteroidetes (by 19.1%) as compared to Group 2 ($P \leq 0.05$).



Konstantin Ostrenko, Anastasia Ovcharova, Ivan Kutyin, Kirill Koltsov, All-Russian Research Institute of Physiology, Biochemistry and Nutrition of Animals – Branch of the L.K. Ernst Federal Research Center for Animal Husbandry, VNIIFBiP, Borovsk, Russia.
Natalia Nevkrytaya, FSBSI "Research Institute of Agriculture of Crimea", Simferopol, Republic of Crimea, Russia.
Lecture Title: Effect of Essential Oils of Coriander and Fennel on the Nonspecific Resistance of Dairy Calves.
Abstract: A wide range of essential oils contains biologically active compounds that can potentially act as multifunctional feed additives for animals. The aim of the study was to establish the effect of coriander and fennel essential oils on the non-specific resistance of calves and growth rates. The study was conducted on 3 groups of 21-day-old calves with 10 heads each. The animals of the control group received the basic diet (BD), the first experimental group BD + fennel essential oil (1 ml), the second experimental group BD + coriander essential oil (1 ml). The indicators of nonspecific resistance were studied: phagocytic number (PN) and phagocytic index (PI). PI in fennel is 95.6% higher (25.63:13.1) compared to the control, and in coriander – by 90.3% (24.93:13.1). PN in fennel is 114.4% higher (4.63:2.16), in coriander – by 205% (6.59:2.16). Under equal conditions of maintenance, we see that the immune response in calves of the experimental groups treated with coriander and fennel is significantly higher than in calves of the control group. Additives in the form of essential oils help to strengthen the nonspecific protection of the body.