International scientific and practical conference "Ensuring sustainable development in the context of agriculture, green energy, ecology and earth science" (ESDCA 2021)

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Abstract. Within the framework of the presented material, the results of the conducted International scientific and practical conference "Ensuring sustainable development in the context of agriculture, green energy, ecology and earth science" (ESDCA 2021).

We are pleased to present a collection of materials to IOP Publishing International scientific and practical conference "Ensuring sustainable development in the context of agriculture, green energy, ecology and earth science" (ESDCA 2021), which took place on January 25, 2021 in Smolensk State Agricultural Academy (Smolensk, Russian Federation) and was dedicated to agricultural development, environmental protection and energy (Due to restrictive measures on the territory of the Russian Federation in connection with COVID-19, the meeting took place virtual).

The conference was held on the Microsoft Teams platform, which allowed all participants to present their materials from anywhere in the world.

The conference was present scientific research aimed at solving a set of problems in the field of sustainable development, namely:

- Development of scientific and practical potential in order to formulate proposals for the introduction of science-intensive technologies in agriculture;
- Popularization of fundamental and applied research in the field of agriculture, green energy, ecology and nature management, mining and soil cultivation technologies;
- Formation of recommendations aimed at improving computer models, information technology, engineering, innovative and digital technologies in agriculture, environmental protection and green energy.

The topics of the conference were as follows:

- Scientific support for innovative development of agriculture;
- Intelligent, digital and automated technologies in agriculture;
- Modern scientific achievements - the practice of production and processing of crop products;
• Resource-saving technologies, rational nature management and innovative technologies in the agro-industrial complex;
• Automation and digitalization in the agro-industrial complex;
• Biotechnical systems and technologies in agriculture;
• Feeding farm animals;
• Machines and equipment for selection and seed production;
• Mathematical modelling of applied problems of mechanics in the agro-industrial complex;
• Environmental protection in agro-industrial production;
• Tractor and agricultural engineering;
• Organization of agro-industrial production and agriculture;
• Oil and gas, environmental, chemical and energy engineering;
• Renewable and alternative energy sources. Green energy;
• Mechanization and electrification of agriculture;
• Environmental protection, nature management and ecological safety;
• Production management in the context of the transition to sustainable development;
• Organization of efficient and environmentally friendly production;
• Biodiversity and ways of its conservation;
• Natural-climatic and anthropogenic factors in the evolution of natural ecosystems;
• Environmental management and environmental protection, mining and soil cultivation technology;
• Extracted resources: coal, gas, oil, peat and other minerals;
• Systems analysis, physical and mathematical modeling, computer and information technologies in the context of sustainable development.

Representatives of scientific and research, government and commercial organizations, representatives of almost all agricultural universities in Russia, as well as scientists attended the conference from the middle and far abroad. Among the conference participants were representatives of thirteen states, namely: the Russian Federation, the Republic of Kazakhstan, the Republic of Uzbekistan, Ukraine, the Kyrgyz Republic, the Republic of Abkhazia, the Republic of Tajikistan, the Republic of Slovenia, the Republic of Poland, the Republic of Burundi, the Socialist Republic of Vietnam, the Arab Republic of Egypt and the Islamic Republic Iran.

During the plenary session, the following reports were made:

• Vorotnikov Igor Leonidovich - Doctor of Economics, Candidate of Technical Sciences, Professor, Vice-Rector for Scientific and Innovative Work of the Saratov State Agrarian University named after N.I. Vavilova, Chairman of the Council of Vice-Rectors for Science of Universities of the Ministry of Agriculture of Russia, Saratov, Russian Federation with the topic of the report: "Results of scientific research of agricultural universities in ensuring sustainable development of agriculture in Russia";
• Romanova Iraida Nikolaevna - Doctor of Agricultural Sciences, Professor, Honored Worker of the Higher School of the Russian Federation, Professor of the Department of Agronomy, Land Management and Ecology of the Smolensk State Agricultural Academy, Smolensk, Russian Federation with the topic of the report: "Morphotechnological analysis of the source material of new potato varieties based on in vitro";
• Shakerkhan Kapan Oralgazyuly - teacher of the educational department "Physics and Mathematics Sciences and Informatics", Faculty of Natural Sciences and Mathematics, State University named after Shakarim, Semey, East Kazakhstan region, Kazakhstan; 2nd year doctoral student of the Kazakh Humanitarian and Law Innovation University, Semey city, Republic of Kazakhstan with the topic of the report: "Development of an industrial-scale bioreactor in the context of a global pandemic".
The conference was held on January 25, 2021, within which two sections and several subsections worked, which allowed more than 300 conference participants to take part and discuss reports.

The first section was devoted to the development of agriculture and agro-industrial production reports were heard on the following topics: scientific support of innovative development of agriculture; intelligent, digital and automated technologies in agriculture; modern scientific achievements - the practice of production and processing of crop products; resource-saving technologies, rational nature management and innovative technologies in the agro-industrial complex; automation and digitalization in the agro-industrial complex; biotechnical systems and technologies in agriculture; feeding farm animals; machines and equipment for selection and seed production; mathematical modeling of applied problems of mechanics in the agro-industrial complex; environmental protection in agro-industrial production; tractor and agricultural engineering; organization of agro-industrial production and agriculture.

The second section was devoted to issues of green energy, ecology and earth sciences in which reports were presented on the following topics: oil and gas, environmental, chemical and energy engineering; renewable and alternative energy sources, green energy; mechanization and electrification of agriculture; environmental protection, nature management and ecological safety; production management in the context of the transition to sustainable development; organization of efficient and environmentally friendly production; biodiversity and ways of its conservation; natural-climatic and anthropogenic factors in the evolution of natural ecosystems; rational use of natural resources and environmental protection, mining and soil cultivation technology; extracted resources: coal, gas, oil, peat and other minerals; system analysis, physical and mathematical modeling, computer and information technologies in the context of sustainable development.

Photos of the conference ESDCA2021.
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РЕЗУЛЬТАТЫ РАБОТЫ

NDVI

(Normalized Difference Vegetation Index)

КОМПЬЮТЕРНЫЕ МОДЕЛИ ОПРЕДЕЛЕНИЯ НЕКОТОРЫХ ФАКТОРОВ ИЗМЕНЕНИЯ НАУЧНОЙ БИОЛОГИИ С ПРИМЕНЕНИЕМ ИНДЕКСА NDVI

2009

2019
The conference was held virtually in winter, since in spring, summer and autumn, the participants are engaged in agriculture in the field and Earth.

The participants and guests of the conference appreciated the high level of the report, the scientific and practical application of the proposed approaches and methods, as well as the need to form scientific groups for joint international research on topical problems of the development of agriculture, green energy, ecology and earth science.

Acknowledgments

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References

[1] Official site OOO "RID" Retrieved from: http://ridlaw.ru
[2] R V Lutoshkin et al 2020 IOP Conf. Ser.: Mater. Sci. Eng. 976 011001
[3] 2020 IOP Conf. Ser.: Mater. Sci. Eng. 837 011001