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CHANGES IN ECOLOGICAL AND BIOLOGICAL PROPERTIES OF SOILS OF THE SOUTH OF RUSSIA AT GLEYISATION

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Kandashova Karina Andreevna – Post-Graduate Student, Department of Ecology and Natural Management, Ivanovsky Academy of Biology and Biotechnology of the Southern Federal University, Stachki Ave, 194/1, Rostov-on-Don, 344090, Russia, e-mail: biolog@sfedu.ru

Kazeev Kamil Shagidullovich – Doctor of Geographical Science, Professor, Department of Ecology and Natural Management, Ivanovsky Academy of Biology and Biotechnology of the Southern Federal University, Stachki Ave, 194/1, Rostov-on-Don, 344090, Russia, e-mail: kamil_kazeev@mail.ru

Kolesnikov Sergei Il'ich – Doctor of Agricultural Science, Professor, Head of Ecology and Natural Management Department, Ivanovsky Academy of Biology and Biotechnology of the Southern Federal University, Stachki Ave, 194/1, Rostov-on-Don, 344090, Russia, e-mail: kolesnikov@sfedu.ru

Results of laboratory modeling of gleyisation and its effect on the ecological and biological properties of soils with flooding water regime and periodically flooding water regime are presented in this article. Gleyisation is a complex biochemical process that occurs under oxygen reduction conditions. Anaerobic microorganisms, the presence of organic substances, and the constant or prolonged waterlogging of individual horizons or the entire soil profile promote gleyisation. Model experiments revealed that gleyisation increases the total number of bacteria and changes the activity of enzymes and phytotoxicity.

Keywords: gleyisation, model experiment, flooding water regime, periodically flooding water regime, ecological and biological properties of soils.

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Pollution Influence by Heavy Metals and Oil on Phytotoxicity of Black Sea Coast Soils of the Caucasus **ВЛИЯНИЕ ЗАГРЯЗНЕНИЯ ТЯЖЕЛЫМИ МЕТАЛЛАМИ И НЕФТЬЮ НА ФИТОТОКСИЧНОСТЬ ПОЧВ ЧЕРНОМОРСКОГО ПОБЕРЕЖЬЯ КАВКАЗА***

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Kuzina Anna Andreevna – Post-Graduate Student, Ecology and Natural Management Department, Ivanovsky Academy of Biology and Biotechnology of the Southern Federal University, Stachki Ave, 194/1, Rostov-on-Don, 344090, Russia, e-mail: biolog@sfedu.ru

Kolesnikov Sergei Il'ich – Doctor of Agricultural Science, Professor, Head of Ecology and Natural Management Department, Ivanovsky Academy of Biology and Biotechnology of the Southern Federal University, Stachki Ave, 194/1, Rostov-on-Don, 344090, Russia, e-mail: kolesnikov@sfedu.ru

Kazeev Kamil Shagidullovich – Doctor of Geographical Science, Professor, Ecology and Natural Management Department, Ivanovsky Academy of Biology and Biotechnology of the Southern Federal University, Stachki Ave, 194/1, Rostov-on-Don, 344090, Russia, e-mail: kamil_kazeev@mail.ru

Akimenko Yuliya Viktorovna – Candidate of Biological Science, Assistant, Ecology and Natural Management Department, Ivanovsky Academy of Biology and Biotechnology of the Southern Federal University, Stachki Ave, 194/1, Rostov-on-Don, 344090, Russia, e-mail: biolog@sfedu.ru

As a result of model researches it is established that pollution of Cr, Cu, Ni, Pb and oil of Black Sea Coast soils of the Caucasus leads to essential decrease in indicators of germination and initial growth of a garden radish. On extent of negative impact heavy metals form the following row: $Cr > Cu \geq Ni > Pb$.

Keywords: phytotoxicity, pollution, heavy metals, chrome, copper, nickel, lead, oil.

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RESULTS OF THE STUDY OF PHENOLOGICAL FORMS QUERCUS ROBUR L. USING ISSR MARKERS

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Chokheli Vasiliy Aleksandrovich – Post-Graduate Student, Junior Researcher, Department of Genetics, Faculty of the Biological Science, Botanical Garden of the Ivanovsky Academy of Biology and Biotechnology of the Southern Federal University, Botanicheskii Spusk, 7, Rostov-on-Don, 344041, Russia, e-mail: vachokheli@sfedu.ru

Kozlovskiy Boris Leonidovich – Candidate of Biological Science, Researcher, Botanical Garden of the Ivanovsky Academy of Biology and Biotechnology of the Southern Federal University, Botanicheskii Spusk, 7, Rostov-on-Don, 344041, Russia, e-mail: ecostyle2@yandex.ru

Sereda Mikhail Mikhailovich – Candidate of Biological Science, Associate Professor, Department of Botany, Ivanovsky Academy of Biology and Biotechnology of the Southern Federal University, Botanicheskii Spusk, 7, Rostov-on-Don, 344041, Russia, e-mail: eredam@yandex.ru

Varduni Tatiana Viktorovna – Doctor of Pedagogical Science, Associate Professor, Professor, Department of Genetics, Faculty of the Biological Science, Director of Botanical Garden of the Ivanovsky Academy of Biology and Biotechnology of the Southern Federal University, Botanicheskii Spusk, 7, Rostov-on-Don, 344041, Russia, e-mail: varduny@yandex.ru

Conducted genetic identification of the forms of Quercus robur L. from artificial populations of the Botanical garden of Southern Federal University with the help of ISSR markers. The objects of study served as phenological forms: Q. r. var. praecox Czern. and Q. r. var. tardiflora Czern. Scoring was primer with sequence (GA)₈YC. Also, the high polymorphism in the sample group Q. robur, selected from artificial populations of the Botanical garden of SFU. It is revealed that the method does not allow to clearly separate phenological forms of Q. robur. However, ISSR markers can be used for genetic certification of unique and collectible specimens of species of the genus Quercus, and their subsequent identification.

Keywords: *Quercus robur L., phenological forms, genetic certification, ISSR method, ontogenesis, dendrogramm.*

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