



No. 7/ 2023
Feb - Apr

Newsletter



Outline:

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PROJECTS

Proposals

Project title: FRUITDIV: Preserving and Exploiting the Untapped potential of Fruit tree Wild Diversity for Sustainable Agriculture

Competition: HORIZON-CL6-2023-BIODIV-01– Crop wild relatives for sustainable agriculture

Project manager: Anamaria Roman

The coordinating institution: INSTITUT NATIONAL DE RECHERCHE POUR L'AGRICULTURE, L'ALIMENTATION ET L'ENVIRONNEMENT (INRAE), Franta

Role of Institute of Biological Research Cluj-Napoca: Partner

Without co-financing.

New

Innovative technological project - Call 2022 (Call code: POC/1033/1/3/ PTI)

Development of an innovative product based on increasing the therapeutic potential of some extracts obtained within CROMATEC PLUS SRL, implementation period 2023.

CSI Dr. Marcel Ciobanu – Institute of Biological Research, Cluj Napoca, signed a research contract with the Frata Municipality in the amount of 20.000 lei. The subject of the contract is: Fundamentals study for the establishment of a reserve of variegated tulip (*Fritillaria meaelegris* L.) in Berchiesu (Cluj county).

PUBLISHED ARTICLES

1. *Artemisia abrotanum* and *Symphytum officinale* Polyphenolic Compounds-Rich Extracts with Potential Application in Diabetes Management

by Elena Neagu, Gabriela Paun, Camelia Albu, Sandra Ana-Maria Victoria Eremia and Gabriel Lucian Radu
Metabolites 2023, 13(3), 354; <https://doi.org/10.3390/metabo13030354>

2. Dysbiotic Gut Microbiota Modulation by Aronia Fruits Extract Administration

by Emanuel Vamanu, Florentina Gatea, Ionela Avram, Gabriel Lucian Radu and Sandeep Kumar Singh
Life 2023, 13(1), 32; <https://doi.org/10.3390/life13010032>

3. Different Extraction Approaches for the Analysis of Melatonin from Cabernet Sauvignon and Feteasca Neagra Wines Using a Validated HPLC-FL Method

by Sandra A. V. Eremia, Camelia Albu, Gabriel L. Radu and Marian Ion
 ISSN 14203049; DOI 10.3390/molecules28062768

4. Chelu M., Musuc A.M., Aricov L., Ozon E.A., Iosageanu A., Stefan L.M., Prelipcean A-M., Popa M., Calderon Moreno J.M. 2023. Antibacterial Aloe vera based biocompatible hydrogel for use in dermatological applications. *International Journal of Molecular Sciences*, 24(4): 3893 (FI: 6.208)

5. Darie-Nita R.N., Irimia A., Doroftei F., Stefan L.M., Iwanczuk A., Trusz A. 2023. Bioactive and physico-chemical assessment of innovative poly(lactic acid)-based biocomposites containing sage, coconut oil, and modified nanoclay. *International Journal of Molecular Sciences*, 24(4): 3646 (FI: 6.208)
6. Popa M., Anastasescu M., Stefan L.M., Prelipcean A.-M., Calderon Moreno J.M. 2023. Antibacterial activity and cell viability of biomimetic magnesian calcite coatings on biodegradable Mg. *Journal of Functional Biomaterials*, 14(2): 98 (FI: 4.901)
7. Negreanu-Pirjol B.S., Negreanu-Pirjol T., Popoviciu D.R., Artem V., Ranca A., Craciunescu O., Prelipcean A.M., Motelica L., Vasile M. 2023. Preliminary data regarding bioactive compounds and total antioxidant capacity of some fluid extracts of *Lonicera caerulea* L. berries. *UPB Scientific Bulletin Series B*, 85(1), 101-116.
8. Mihai E., Negreanu-Pirjol B.S., Craciunescu O., Ciucan T., Iosageanu A., Seciu-Grama, A.-M., Prelipcean A.-M., Utoiu E., Coroiu V., Ghenea A.-M., Negreanu-Pirjol T. In Vitro Hypoglycemic Potential, Antioxidant and Prebiotic Activity after Simulated Digestion of Combined Blueberry Pomace and Chia Seed Extracts. *Processes*, 2023, 11, 1025 (FI: 3.352).
9. Stefan L.M., Isbert W., Gómez-Díaz E., Mironov S.V., Doña J., McCoy K.D., González-Solís J. 2023. Diversity and structure of feather mite communities on seabirds from the north-east Atlantic and Mediterranean Sea. *Scientific Reports*, 13: 4793 (FI: 4.996).
10. Deaconu M., Prelipcean A.M., Brezoiu A.M., Mitran R.A., Isopencu G., Matei C., Berger, D. 2023. Novel Collagen-Polyphenols-Loaded Silica Composites for Topical Application. *Pharmaceutics*, 15(2), 312 (FI: 6.525).
11. Negreanu-Pirjol B.S., Oprea O.C., Negreanu-Pirjol T., Roncea F.N., Prelipcean A.M., Craciunescu O., Iosageanu A., Artem V., Ranca A., Motelica L., Lepadatu A.C., Cosma M., Popoviciu D.R., 2023. Health benefits of antioxidant bioactive compounds in the fruits and leaves of *Lonicera caerulea* L. and *Aronia melanocarpa* (Michx.) Elliot. *Antioxidants*, 12, 951. (IF=7,675, Q1)
12. Szatmari P.M., Hurdu B.-I., 2022, Low altitude glacial relicts in the Romanian flora, *Contribuții Botanice, Cluj-Napoca*, 57: 19-51. (doi: 10.24193/Contrib.Bot.57.2)
13. Șuteu D., Băcila I., Stoica I.A., Balazs Z. R., Pușcaș M., Coldea Gh., 2023, Phylogeographic pattern of the high-alpine plant species *Eritrichium nanum* (Boraginaceae) within the Carpathians, *Notulae Botanicae Horti Agrobotanici Cluj-Napoca*, Volume 51, Issue 1, Article number 12971, DOI:10.15835/nbha5111297
14. Stoica, A.D.; Sevastre, B.; Suci, M.; Pârvu, A.E.; Pârvu, M.; Toma, V.A.; Roman, I.; Dobre, C. Chemoprotective Effect of *Plantago sempervirens* Crantz Extract on Ovarian Structure and Folliculogenesis. *Appl. Sci.* 2023, 13, 3134. <https://doi.org/10.3390/app13053134>
15. Mihai Lupu, Camelia Alexandra Coadă Diana-Valentina Tudor, Ioana Baldea, Adrian Florea, Vlad-Alexandru Toma, Ana Lupsor, Remus Moldovan, Nicoleta Decea, Gabriela Adriana Filip. Iron chelation alleviates multiple pathophysiological pathways in a rat model of cardiac pressure overload. *Free Radical Biology and Medicine* DOI: <https://doi.org/10.1016/j.freeradbiomed.2023.02.018>
16. Halmagyi, A., Coste, A., Deliu, C., Băcilă, I. (2023) High frequency direct organogenesis in five Romanian tomato (*Lycopersicon esculentum* Mill.) cultivars. *Horticulturae* 9(3): 411.
17. Colniță, A.; Toma, V.-A.; Brezeștean, I.A.; Tahir, M.A.; Dina, N.E. A Review on Integrated ZnO-Based SERS Biosensors and Their Potential in Detecting Biomarkers of Neurodegenerative Diseases. *Biosensors* 2023, 13, 499. <https://doi.org/10.3390/bios13050499>

CONFERENCES

Ion Petre participated in the period March 13-17 in the 20th International Conference on Unconventional Computation and Natural Computation (UCNC), that took place in Jacksonville, Florida, USA. He was an invited tutorial speaker and gave a plenary talk on "Reaction systems". The UCNC conference is a well-established forum where scientists with different backgrounds meet and present their latest research results on novel forms of computation, human-designed computation inspired by nature, and the computational aspects of processes taking place in nature.

WORKSHOPS

"ARSINOE", February 13-14, Istanbul

Between February 13-14, 2023, the workshop of the Black Sea case study (CS6) of the project "Building a low-carbon, climate resilient future: Research and innovation in support of the European Green Deal" acronym ARSINOE took place in Istanbul. The event was hosted by the BSEC (Black Sea Economic Cooperation) General Secretariat.

The purpose of the event was to present progress reports and achieve synergies with the general objective and scientific agenda of the project for the partners from Bulgaria, Greece, Romania, Turkey. In addition, the H2020 Bridge project was presented and the synergies between the 2 projects were discussed. On behalf of INCDS, Dr. Maria Paraschiv and Dr. Manuela Sidoroff participated to the event.



"Cybernetic security, cryptanalysis with quantum methods and non-conventional models of computability", Smart Diaspora, April 10-13, Timisoara

Presentations:

Andrei Paun, University of Bucharest and National Research-Development Institute for Biological Sciences Bucharest and University of Helsinki, "SNP systems"

Eugen Czeiger, National Research-Development Institute for Biological Sciences Bucharest and University of Helsinki, "Digitalization of the medical record and clinical research supported by computational techniques"

Octavian Pacioglu, National Research-Development Institute for Biological Sciences Bucharest, "Challenges in subterranean biodiversity security: new conceptual models for the epigeal-hypogean continuum"

RESEARCHER'S CORNER

Dr. Roman Ioana and Dr. Toma Vlad participated on 24.03.2023 in a webinar on Danube Labs' latest Call for Proposals in which they received information on how to apply to this call and methods of obtaining funding.



10 April 2023 - Open Doors Day at ICB Cluj within the framework of the Green Week program

Following the collaboration agreement recently signed between Institute of Biological Research Cluj-Napoca, branch of INCDSB Bucharest, and "Avram Iancu" Gymnasium School from Beliș (CJ) with the aim to develop educational activities with and for the secondary school students regarding environmental pollution, climate change and nature conservation, on April 10 2023, the schoolkids, accompanied by five teaching staff, participated in the Open Doors Day at the institute's headquarters. These activities are part of the National Strategy on Education for the Environment and Climate Change, being carried out within the Green Week Program of the school.



The 32 students who participated in the interactive activities coordinated by ICB Cluj researchers were presented issues related to:

(1) Air pollution resulting from the vegetation and waste burning, as well as the effect of climate change and land changes on atmospheric and ground temperature



(2) The role of respiration in plants and trees in ensuring the quality of air and also the quality of human life



(3) Changing misperceptions and phobias about some animals



(4) The role of in vitro cultures and seed banks for saving endangered species



(5) The role of algae in the generation of atmospheric oxygen, as well as their diversity in aquatic ecosystems



During the activities, the practical aspects were highlighted related to the awareness of the climate change effect on the environment and human life, as well as the role of biodiversity or human interaction with the environment.

Not less than 15 employees of the institute (Ana Coste, Maria Nicoară, Alexandra Mortu, Anamaria Roman, Adela Halmagyi, Ioana Roman, Dana Șuteu, Gabriela Tanțău, Bogdan Drugă, Ursu Tudor, Marcel Ciobanu, Adrian Ruicănescu, Dănuț Andreica, Paul Sztamari, Hurdu Bogdan-luliu) were involved in the organization of this event that lasted for 5 hours, of which 7 of them participated directly in the educational activities with the students: Ana Coste, Maria Nicoară, Alexandra Mortu, Anamaria Roman, Dana Șuteu, Bogdan Drugă, Ursu Tudor.

Antarctica in Schools, a presentation about ROICE expeditions organized by INCDSB between 2015 and 2020

Between February and April, the ROICE expedition members Dr. Iris Maria Tusa and Dr. Corina Itcus, gave presentations about the means of being a researcher at the South Pole in King Georg Island, West Antarctica.

During the presentations, the vision and mission of the ROICE expeditions were presented (www.roice.en), as well as personal testimonials from these expeditions, short movies, and images, trying to give a glimpse to the students into the Antarctic life of the researchers that work there. These presentations were held in: "Tudor Vianu" National College, "Grigore Moisil" National Collage and secondary school Mircea Santimbreanu.

