

Personal information

First name/ Surname: **Pavlo Ardanov**

Address: 11-A Petra Pancha Str., apt.23, Kyiv – 04201, Ukraine

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E-mail: pavlo.ardanov@gmail.com

Nationality: Ukrainian

Date of birth: 12.11.1981

Work experience

Dates: **08.2010 – present**

Occupation or position held: **Co-founder and Head of the NGO «Permaculture in Ukraine»**

Main activities and responsibilities

Main organizer, translator (English – Russian, Ukrainian) and trainer of the first full Permaculture Design Courses in Ukraine (2011, 2012, 2013, 2014, 2016, 2017, 2018,), Permaculture Teachers Training Course (2014), and Permaculture Design Livelihood Course (2016). Translator of the first permaculture book in Ukrainian (Aranya 'Permaculture Design: a step-by-step guide, 2016; Plants for a Future 'Edible Trees', 2018; Bill Mollison "Introduction to Permaculture"). Team-building, web-design, event and organization management, networking with national and international organizations and business sector, fundraising, editing and translation of the course handouts and conference proceedings. Writing articles, and presenting Ukrainian permaculture movement (*e.g.* on the European (2010, 2012, 2014, 2016) and International (2015, 2017) Permaculture Convergences. Delegate from Ukraine in the European Permaculture Network (former European Permaculture Council), since 2013, delegate from Europe in the International Permaculture Convergence Council, since 2014, and board member of the Permaculture International Research Network, since 2018. Organization committee member of the Ukrainian Permaculture Research and Practice Conferences and Convergences (14–15.05.2016, 21–22.01.2017, 24–25.02.2018, and 26–27.01.2019 Ukraine); International Permaculture Conference and Convergence (8–16.09.2016, United Kingdom, and 25.11.2017–02.12.2017, India); research and practice international conferences 'Permaculture for Farmers' (11–13.07.2017, Hungary), 'Permaculture and Ecologically Friendly Agriculture (24.02.2018, Ukraine), 'Permaculture for Academia (30.09–0.10.2018, Ukraine), and "Urban Permaculture" (24–25.01.2019, Ukraine). Project leader in the program 'Permaculture for Farms' (farm visits and international conference), 'Permaculture for Academia' and 'LAND + WWOOF + GEN = learning and investigating sustainability' (network of sustainability learning and demionseration centers and the international conference) supported by the International Visegrad Fund in 2017, 2018, and 2019, respectively.

Medical and humanitarian support of injured protesters, IDPs and victims of the armed conflict in the Eastern Ukraine with the projects Coordination Centre of the Kyiv City Hospital №17 and international project Permaculture for Peace: fundraising, reporting, education.

Name and address of employer: **NGO 'Permaculture in Ukraine'**, 84 Holiivsky av, appt. 71, Kyiv 03040, Ukraine

Type of business or sector: NGO

Dates: **09.2007 – 08.2013**

Occupation or position held: **Doctoral research at the at the University of Oulu, Finland and position in Finnish Doctoral Program in Plant Science (FDPPS)**

Main activities and responsibilities:

Study and research on plant-microbe interactions as a part of an international collaborative project. Participation in panel discussions with experts. Writing reports and conducting presentations for the board, national and international meetings and conferences. Teaching (laboratory courses Genetic Transformation of Plants and Plant Tissue Culture) and supervision of university students. Organization committee member of Kaamos symposium (Oulu, Finland, 8.-9 December 2008) and CRYOPLANET - COST Action 871: Cryopreservation of Crop Species in Europe (Oulu, Finland, 20-23 February 2008). Fundraising,

publication and reviewing the research and review articles for the international peer-reviewed journals (PLoS ONE, Tree Physiology, Plant and Soil, Biological Control, Biopolymers and Cell, Journal of Applied Microbiology, and African Journal of Biotechnology).

Name and address of employer: Graduate School Office, P.O. Box 56 (Viikinkaari 5D), 00014 University of Helsinki, Finland

Type of business or sector: Doctoral program funded by the Academy of Finland

Education and training

Academic

Dates: **09.2007 – 08.2013**

Title of qualification awarded: **PhD in plant physiology** (Research topic: 'Priming capacities of endophytic *Methylobacterium* sp. on potato (*Solanum tuberosum* L.)' under the supervision of Prof. Hely Häggman, Doc. Anna Maria Pirttilä (University of Oulu, Finland) and Dr. Natalia Kozyrovska (Institute of Molecular Biology & Genetics of NASU, Ukraine).

Principal subjects: plant physiology, molecular biology, environmental microbiology, biological control.

Name and type of organisation providing education and training: University of Oulu (University). Pentti Kaiteran katu 1, PL 8000, 90014, Oulu, Finland

Dates: **09.2005 – 07.2007**

Educator / training: **MSc in Biology** (Master thesis: 'The role of endophytic bacteria in development of induced systemic resistance in plants' under the supervision of Dr. Natalia Kozyrovska. Grade – 5/5).

Principal subject: Potato growth-promoting bacteria.

Name and type of organisation providing education and training: National Taras Shevchenko University, Kyiv (University) / Institute of Molecular Biology & Genetics of NASU (Research institute). 64, Volodymyrs'ka St., 01601 Kyiv / 150, Zabolotnogo Str., Kyiv – 143

Dates: **09.2001 – 07.2005**

Title of qualification awarded: **BSc in Biology** (Bachelor thesis 'Fusion gene construction of variable fragments antibodies with cellulosebinding domain and production single chain recombinant antibodies in phage display system' under the supervision of Acad. Vitaly Kordium. Grade-5/5).

Principal subjects: Biology, biochemistry, biotechnology, molecular biology, pedagogy.

Name and type of organisation providing education and training: National Taras Shevchenko University, Kyiv (University) / Institute of Molecular Biology & Genetics of NASU (Research institute). 64, Volodymyrs'ka St., 01601 Kyiv / 150, Zabolotnogo Str., Kyiv – 143.

Non-academic

Dates: **08.2018**

Educator / training: **Water Management in Permaculture** (trainer – Valentyna Movchan (Ukraine))

Name and address of the institution: NGO 'Permaculture in Ukraine' (NGO), 11-a Petra Pancha str., appt. 23, Kyiv 04201, Ukraine

Dates: **05.2016**

Educator / training: **Permaculture Design Livelihood Course** (trainer – Jennifer Lauruol (UK))

Name and address of the institution: NGO 'Permaculture in Ukraine' (NGO), 11-a Petra Pancha str., appt. 23, Kyiv 04201, Ukraine

Dates: **06.2015**

Education / training: **Active Citizens** (trainers – Gay Alliance)

Name and address of the institution: British Council, 4/12 Hryhoriya Skovorody Street Kyiv 04070, Ukraine (international organization)

Dates: **02.2013**

Educator / training: **Permaculture Teachers Training Course** (trainer – George Sobol (UK))

Name and address of the institution: NGO 'Permaculture in Ukraine' (NGO), 11-a Petra Pancha str., appt. 23, Kyiv 04201, Ukraine

Dates: 07.2011

Educator / training: **Certification Permaculture Design Course** (trainers – George Sobol (UK), Joe Atkinson (UK), Cathrine Dolleris (Danmark))

Name and address of the institution: NGO 'Permaculture in Ukraine' (NGO), 11-a Petra Pancha str., appt. 23, Kyiv 04201, Ukraine.

Research technique and skills

Molecular biology methods: DNA/RNA extraction, purification and sequencing (including microbial DNA extraction and enrichment procedure from plant tissues), restriction, ligation, genetic transformation of plants (agrobacterium-mediated and biolistic transformation) and microorganisms, protein expression in *E. coli* cells, PCR, RT-PCR, Real-Time PCR, T-RFLP, phage display.

Plant physiology methods, including pathogenicity assay.

Biochemical methods: protein and DNA electrophoresis, measuring ascorbate-glutathione cycle enzymes activity, HPLC.

Microbiological and microscopy techniques, including confocal laser scanning microscopy.

Immunological methods: immune agglutination and precipitation.

Statistical methods: ANOVA, Student's t-test, PCA, Additive Main Effects and Multiplicative Interaction Model, correlation analysis.

Language skills

Mother tongue(s): **Ukrainian, Russian**

Other language(s): **English (fluent), French (intermediate), Finnish (basic)**

Publications

Kazakova I, Ardanov P (ed.) **Urban Permaculture – conference proceedings**, Open International University of Human Development 'Ukraine', Kyiv, Ukraine, 24–25 January 2019.

Horynová A, Spakova Z, Szilágyi A, Ardanov P (ed.) **Permaculture for Academia – conference proceedings**, Open International University of Human Development 'Ukraine', Kyiv, Ukraine 29-30 September 2018.

Ardanov P (2018). **Management of crop pollination services** - as a part of massive open online courses 'Citizen science: from soil to sky', 'Living soils, growing food' and publication by the GROW observatory project Regenerative practices in agriculture. <https://growobservatory.org/>

Movchan V. and Ardanov P., 2018. **Problems of formation of ecocentric comprehension of modern human**. Science Review, 2(9), 58 – 61.

Ardanov P (ed.) **Permaculture for Farmers – conference proceedings**, Ecological Institute for Sustainable Development, Gömörszölös, Hungary, 11–13 July 2017.

Ardanov P, Lyastchenko S, Karppinen K, Häggman H, Kozyrovska N, Pirttilä AM (2016) **Effects of *Methylobacterium* sp. on emergence, yield, and disease prevalence in three cultivars of potato (*Solanum tuberosum* L.) were associated with the shift in endophytic microbial community**. Plant and Soil 405 (1), 299 – 310.

Pohjanen J, Koskimäki JJ, Sutela S, Ardanov P, Suorsa M, Niemi K, Sarjala T, Häggman H & Pirttilä AM (2014) **Interaction with ectomycorrhizal fungi and endophytic *Methylobacterium* affects nutrient uptake and growth of pine seedlings in vitro**. Tree Physiology 34 (9), 993 – 1005.

Podolich O, Ardanov P, Zaets I, Pirttilä AM & Kozyrovska N (2014) **Reviving of the endophytic bacterial community as a putative mechanism of plant resistance**. Plant and Soil 1 – 11.

Ardanov P 27.12.2013 **Permaculture in Ukraine – one of the platforms of civil society**. GURT Resource Centre <http://gurt.org.ua/interviews/20479/>

Ardanov P 2013 **Permaculture for husbandman**. Handbook for Ukrainian husbandman.

Ardanov P, Sessitsch A, Häggman H, Kozyrovska N & Pirttilä AM (2012) **Methylobacterium-induced endophyte community changes correspond with protection of plants against pathogen attack**. PLoS ONE 7(10): e46802.

Ardanov P, Ovcharenko L, Zaets I, Kozyrovska N & Pirttilä AM (2010) **Endophytic bacteria enhancing growth and disease resistance of potato (*Solanum tuberosum* L)**. Biological Control 56 (1): 43 – 49.

Ardanov P, Lyastchenko S, Podolich O, Ryazantsev V, Zaets I & Kozyrovska N. (2010). **Use of endophytic bacteria for adaptation of in vitro-grown potato plants to ex vitro conditions and protection of planting material from phytopathogens**. Science and innovation, 6(6): 51 – 55.

Podolich O, Lytvynenko T, Voznyuk T, Kovalchuk M , Danylchenko O, Lashevskiy V, Ardanov P, Lyastchenko S & Kozyrovska N (2007). **Endophytic bacteria from potato in vitro activated by exogenic nonpathogenic bacteria**. Biopolymers and Cell, 23(1): 21 – 27.

Awards

The project proposals 795822 and 842934 ‘Designing functional crop guilds and open source databases for resilient ecosystems’ submitted under the Horizon 2020’s Marie Skłodowska-Curie actions was scored as a high-quality project proposal (05.03.2018, 19.03.2019).

Participation in international conferences

Permaculture for Academia “Planning further collaboration: specialized short university courses for farmers with the internship at the permaculture education and demonstration centers”, , Open International University of Human Development ‘Ukraine’, Kyiv, Ukraine 29–30 September 2018.

XII International Permaculture Conference and Convergence ‘**Permaculture farming in Central and Eastern Europe**’, Polam farm, India, 27 November – 2 December 2018.

Permaculture for Farms ‘**Permaculture for Farms: planning future collaboration in Central and Eastern Europe**’, Gömörzölös, Hungary, 11–13 July 2017.

International Permaculture Conference and Convergence ‘**Permaculture in conflict zones**’, London and Essex, 8–16 September 2016.

European Permaculture Convergences ‘**Permaculture in Ukraine**’ Nethen, Belgium, 17 – 19 August 2010; Batak, Bulgaria, 25 – 29 July 2014; Escherode, Germany, 1–5 August 2012.

Sustainability Summit, Shcholkino, Ukraine, 13–16 September 2013.

Endophytes for Plant Protection: The State of the Art ‘**Interaction between the endophytic *Methylobacterium*, host plant and its microbiome with respect to the plant fitness**’, Berlin, Germany 25–29 May 2013.

Endophytes: from Discovery to Application, COST Working Group 1 – 4 Meeting ‘**Impact of *Methylobacterium* inoculation on potato (*Solanum tuberosum* L.) productivity and disease resistance is modulated by the interaction with the resident endophyte community and environmental conditions**’, Fondazione Edmund Mach, Italy, 14–16 November 2012.

6th SPSS (Scandinavian Plant Physiology Society) PhD Student Conference ‘**A microbial army is activated by endophyte to protect plant from pathogens**’, Espoo, Finland 2–5 September 2010.

12th International Conference on Plant Pathogenic Bacteria ‘**Endophytic *Methylobacterium* influences potato and pine disease resistance in cultivar- and treatment-specific manner by inducing changes in plant resident microbiota**’, Saint-Denis, Ile de la Réunion, France, 7–11 June 2010.

The 1st International Kilpisjärvi meeting on Arctic Plant and Soil Microbial Ecology ‘**Plant endophytic *Methylobacteria*: interactions with the plant and microbial community**’, Kilpisjärvi, Finland, 4–7 July 2010.

XIV International Congress on Molecular Plant-Microbe Interactions ‘**Priming capacities of potato endophytic bacteria**’, Quebec, Canada, 19–23 July 2009.

3rd Congress of European Microbiologists – FEMS 2009 ‘**The role of potato endophytic bacteria in plants priming**’ 28 June – 2 July 2009.

Bio Meets Nano and IT ‘**The impact of potato endophytic bacteria on plant defense and development**’ 1–3 December 2008

Conference for young scientist, PhD students and students on molecular biology and genetics, dedicated to 120th anniversary of M I Vavilov ‘**The role of endophytic bacteria isolated from potato in induced systemic resistance**’ Kyïv, Ukraine, 20–22 September 2007

International Scientific Conference on Microbial Biotechnologies ‘**Labelling of the biocontrol bacteria with bioluminescent marker**’, Odessa, Ukraine, 11–15 September 2006.

Grants and scholarships awarded

09.2019–05.2020 Fulbright Visiting Scholar Program

09.2019–05.2020 International Visegrad Fund

06–12.2018 International Visegrad Fund

03–09.2017 International Visegrad Fund

01–05.2012 PhD scholarship from the Faculty of Science, University of Oulu

07.2011 Gaia Trust

09.2007–12.2011 Finnish Graduate School in Plant Biology (FGSPB), doctoral student position

04.2009–12.2010 Academy of Finland

06.12.2009 University of Oulu Research Mobility Grant

03–04.2009 University of Oulu, travel grant

01–06.2009 Oulun läänin talousseuran maataloussäätiö (research foundation)

06–12.2008 Tauno Tönning Research Foundation

01–06.2008 Niemi Foundation

10.2007–06.2008 CIMO Research Scholarship

10–12.2007 FEMS Research Scholarship

Scientific and society memberships

Member of Ukrainian Biochemistry Society (of Federation of European Biochemical Societies (FEBS)) since 2003, member of Ukrainian Microbiology Society (of European Microbiological Societies (FEMS)) since 2007, member of the International Society for Molecular Plant-Microbe Interactions (IS-MPMI) since 2009, position at the Finnish Graduate school in Plant Biology (FGSPB) 2008 - 2012, member of the European Plant Science Organisation (EPSO) since 2009, member of Scandinavian Plant Physiology Society (SPPS) since 2009, member of Society of Experimental Biology since 2010, Society of Experimental Biology since 2009, European Permaculture Teachers Partnership (2012 – 2014), European Permaculture Network (representative from Ukraine since 2014), International Permaculture Convergence Council (representative from Europe since 2015), Visegrad Permaculture Partnership (representative from Ukraine since 2016), Permaculture International Research Network (board member since 2018)

Computer skills and competences

Competent user of MS Office and Open Office; systems: Windows, Linux; programmes: graphical (GIMP, Adobe Illustrator, Paint), web design (Joomla, Wordpress, Kompozer, FileZilla), statistical analysis (R, SPSS, Perl, Python, Mathmodel).