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FASCINATION OF PLANTS DAY (FOPD) – REALITY AND TRADITION IN BULGARIA

MIROSLAVA K. ZHIPONOVA¹, KAMELIYA S. YOTOVSKA² &
ANELIA V. IANTCHEVA^{3*}

¹*Department of Plant Physiology, Faculty of Biology, Sofia University “St. Kliment Ohridski”, 8 Dragan Tsankov Blvd., BG-1164 Sofia, Bulgaria*

²*Department of Biology Education, Faculty of Biology, Sofia University “St. Kliment Ohridski”, 8 Dragan Tsankov Blvd., BG-1164 Sofia, Bulgaria*

³*Agrobiointstitute, Agricultural Academy, 8 Dragan Tsankov Blvd., BG-1164 Sofia, Bulgaria*

Abstract. The present report aimed at providing information about the Fascination of Plants Day (FoPD) which is an initiative for popularization of plant science. FoPD was launched by the European Plant Science Organisation /EPSO/ to facilitate the understanding of plant science and to improve its impact and visibility. The FoPD initiative was set worldwide in 2012 for first time, as Bulgaria joined in 2015 and since then participates with events that bring plant science to the non-scientific public. The Agrobiointstitute of the Agricultural Academy as a coordinator for Bulgaria took the challenge to introduce FoPD among the academic society. In response, the scientific faculties of Sofia University, Shumen University, Agricultural University and other plant research institutions embraced the opportunity to reveal the charm of plants. Here is given an overview of the generally mastered strategies as we put accent on the activities undertaken in the Faculty of Biology of Sofia University where faculty members and students united with the Agrobiointstitute. Our mission is on one hand to convince more Bulgarian researchers to participate in the coming FoPDs, and on the other hand to attract more schoolteachers to bring pupils and future scientists to the organized events, as well as interested citizens, professionals, decision-makers and media.

Keywords: Agrobiointstitute, Bulgaria, European Plant Science Organisation /EPSO/, Faculty of Biology, public, schools, Sofia University

**corresponding author:* A. V. Iantcheva, Agrobiointstitute, 8 Dragan Tsankov Blvd., BG-1164 Sofia, Bulgaria; aneliaiantcheva@abi.bg

INTRODUCTION

WILLIAMS (2011) points out important accents why the study of plant biology has never been more important or more exciting. Briefly, plants and humans share a common ancestor that lived ca. 3 billion years ago, they share a common DNA language and a mostly similar cell structure. During the evolution plants incorporated a single-celled photosynthetic bacterium into their cells, which enabled them to carry out photosynthesis, i.e. the ability to convert the sunlight energy into chemical energy. Thanks to photosynthesis, all the food that animals eat comes directly or indirectly from plants. Notably, as a by-product of photosynthesis, plants produce the oxygen that we and other beings need to live. Furthermore, a complex set of biochemical pathways has evolved in plants, which produce a wide variety of interesting and novel chemical compounds. Many of these compounds function to deter pathogens or herbivores, and some are medicinally useful to us. Genetic tools are enabling plant scientists to understand plants with ever-increasing levels of sophistication. This knowledge is making it possible to develop plants that are more efficient providers of the food, medicines, fibers, and raw materials upon which our human population is wholly dependent.

The European Plant Science Organisation /EPSO/ is an independent academic organisation currently representing 69 institutional members bringing together more than 200 research institutes, departments and universities from 31 countries in Europe and beyond (EPSO 2020A). EPSO's mission is to improve the impact and visibility of plant science in Europe (**Fig. 1**). Among EPSO's top priorities is to facilitate the understanding of plant science (EPSO 2020A).

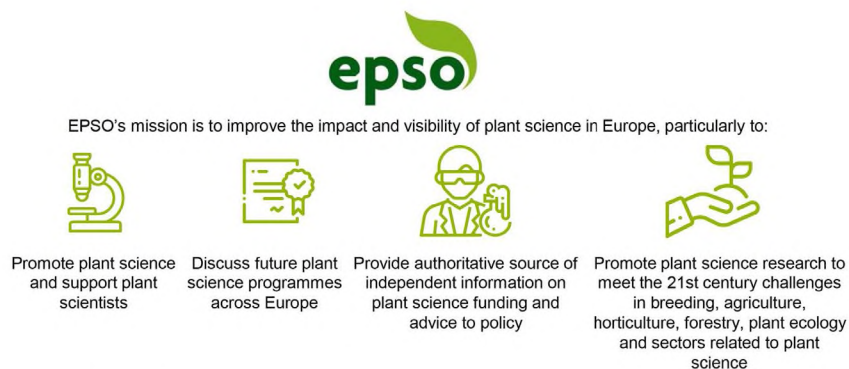


Fig. 1. Schematic representation of EPSO's mission (after <https://epsoweb.org/about-epsoweb/>).

Fascination of Plants Day (FoPD) was initiated and supported by EPSO with the clear aim to promote the fascination and importance of plants and plant science worldwide (FoPD 2020; **Fig. 2**). The goal of FoPD, declared there, is to involve as many people as possible around the globe who are fascinated by

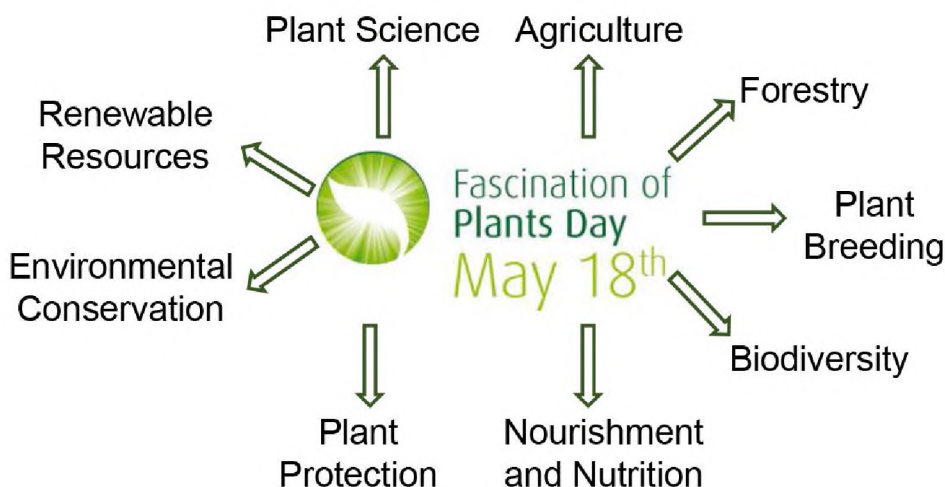


Fig. 2. FoPD promotes the importance of plant science (adapted from FoPD PR Toolbox Posters: <https://plantday18may.org/wp-content/uploads/2019/01/Poster-1.pdf>).

plants, recognize the importance of plant science and assess its role for agriculture, food and feed production, as well as for horticulture, forestry, and all of the non-food products /paper, timber, energy, chemicals, pharmaceuticals/, and realise the importance of plants for sustainable environment. For first time FoPD was celebrated in 18th May 2012 (EPSO 2020A; FoPD 2020) and since than the initiative became bi-annual: throughout the whole month of May in 2013, 2015, 2017, 2019 with thousands of events across the world (EPSO 2020B; **Table 1, Fig. 3**).

Everybody is welcome to join the FoPD initiative - from schools to horticulture and anyone who feels interested in plants (FoPD 2020). Also invited are the media, scientists, farmers, politicians and industrialists to discuss the latest state-of-the-art research and breakthroughs in the plant science and explore the potential applications plant science can offer.

Plant science institutions, universities, schools, botanical gardens and museums, together with farmers and industry, have opened their doors during the FoPD in 2012, 2013, 2015, 2017 and 2019. Variety of interactive plant related events were held across the globe (see summaries as *Success Stories* in links in **Table 1**).

RESULTS AND DISCUSSIONS

The FoPD organizers recommend for each country to make public the translation of the “Why study plants” presentation of WILLIAMS (2011), and for Bulgaria in particular, a Bulgarian version was created (FoPD 2015).

In 2015 in Bulgaria, the national representative of EPSO Prof. ROSSITZA

Table 1. FoPD statistics (<https://plantday18may.org/statistics/>).

FoPD	Events uploaded	Participating institutions	Participating countries	Links:
1 st 2012		560	39	https://blog.rsb.org.uk/fascination-of-plants-day-18th-may-2012/
2 nd 2013	1032	689	54	FoPD-2013-success-story: https://plant-day2015bg.files.wordpress.com/2020/04/suppl.-information-fopd-2013-success-stories.pdf
3 rd 2015	965	589	56	FoPD-2015-success-story: https://plant-day2015bg.files.wordpress.com/2020/04/suppl.-information-fopd-2015-success-stories.pdf
4 th 2017	1019	n.a.	52	FoPD-2017-success-story: https://plant-day2015bg.files.wordpress.com/2020/04/suppl.-information-fopd-2017-success-stories.pdf
5 th 2019	865	n.a.	52	FoPD-2019-success-story: https://plant-day2015bg.files.wordpress.com/2020/04/suppl.-information-fopd-2019-success-stories.pdf Statistics Facebook

BATCHVAROVA (Agrobiointitute of the Agricultural Academy /AA/) opened the first FoPD ceremony. The national coordinator Dr. ANELIA IANTCHEVA (Agrobiointitute, AA) promoted the initiative and its further maintenance in 2017 and 2019 (**Table 2**). The events in each country could be uploaded by the national coordinator on the official page of the Fasciantion of Plants Day (FoPD 2020c), where the respective information and program, as well as final report assigned as *Success story*, could be seen worldwide. Each institution is invited to circulate the news on its own webpage and media of choice. In Sofia, the Department of Methodology of Biology Education in the Faculty of Biology assisted in informing and inviting different schools, and in the last FoPD-2019 edition schoolchildren were invited to take active part in demonstrating the fascination of science together with their Biology teacher and faculty supervisors (**Table 2**).

Altogether, researchers, university professors and students invented charming presentations, demonstrations and gatherings related to interesting facts and properties of plants and their importance for people and environment. To attract more young people, some organizers conducted successfully various contests for drawing, photography, writing, scientific lottery, and the Agrobiointitute even created picturesque art corners for kids.

The Agrobiointitute in union with Sofia University via the Faculty of Biology



Fig. 3. Participating countries in FoPD-2019: Argentina, Australia, Austria, Belgium, Bolivia, Bosnia, Brazil, Bulgaria, Canada, Chile, China, Croatia, Czech Republic, Ethiopia, Finland, France, Germany, Greece, Hungary, Iceland, India, Ireland, Italy, Japan, Latvia, Lebanon, Lithuania, Mexico, Mozambique, Nepal, Netherlands, New Zealand, Nigeria, Norway, Pakistan, Philippines, Poland, Portugal, Romania, Russia, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, UK, Ukraine, Uruguay, USA, Zambia. Note that in previous years other countries took part, too: Algeria, Angola, Cameroon, Cyprus, Denmark, Estonia, Guinea-Bissau, Guyana, Israel, Paraguay, Saudi Arabia, South Africa, South Korea, Tanzania, Thailand, Turkey (adapted from FoPD-2019-success-stories: <https://plantday2015bg.files.wordpress.com/2020/04/suppl.-information-fopd-2019-success-stories.pdf>).

played significant role in spreading knowledge about plant fascination and plant science at FoPD in Sofia. The teams of researchers and students explored various ways to bring out why plants are interesting to study (**Tables 2, 3; Fig. 4**). It was organized a visit to the Herbarium of the Sofia University (registered as SO in Index Herbariorum, ASENOV ET AL. 2012) where are stored specimens from the Bulgarian and foreign flora (op. cit.). Very spectacular demonstrations were performed by the faculty Students Club for Education and Development with Ecological Center (with abbreviation SKOREC, transliterated from Bulgarian language) where its members showed compilation of live plants and animals, as well as home-made souvenirs. The young visitors could learn how to do soil planting, while the Institute of Ornamental and Medicinal Plants set flower expositions for the adults who could take home various plants in pots. Some of the plants were planted outdoor as a memory from the event. Everyone could enjoy the works of the contestants, covering a broad age limit, by attending the Facebook webpage or as exhibition and wall-projection in the faculty lobby. The most active participants received certificates as a proof for the efforts made. In addition, the Agrobiointstitute researchers transferred their fascination about plants by awarding the winners from the competitions with lab-



Fig. 4. Captured moments from FoPDs in Faculty of Biology.

made luxury ikebana with in vitro ornamental plants.

Other AA institutions in Sofia and the Institute for Plant Genetic Resources in Sadovo had also participated with round tables and open days (**Table 2**). The Faculty of Natural Science of Shumen University and the Agricultural University in Plovdiv took seriously the FoPD as opportunity for organization of various gatherings for celebrating plant fascination. The university members showed contagious enthusiasm in promoting local research on fascinating Bulgarian plant species, medicinal plants, bio-products, grain and bread production, etc. Again, the events were intended for pupils and students where the young explorers demonstrated own knowledge about practical aspects of plant science and were involved in degustation of culinary exposition.

Writing about the FoPD, we have to recall especially on its education focus with

Table 2. FoPD events in Bulgarian scientific institutions.

FoPD	Bulgarian institutions (main organizers)	Type of activities	Location
3 rd 2015	Agrobiointitute, AA (ANELIA IANTCHEVA, PhD)	Presentations and practical demonstrations Scientific lottery Contests on the topics “The Fascination of Plants”, “The Fascination of Protected Bulgarian Plant Species”, “The Flora and Us” (photography and drawing) Awarding of certificates and prizes	Faculty of Biology Sofia
	Faculty of Biology, Sofia University (MIROSLAVA ZHIPONOVA, PhD; KAMELIYA YOTOVSKA, PhD; Dean MARIELA ODIAKOVA)	Presentations and practical demonstrations Visit of Herbarium of SU Flower planting in the courtyard of the faculty	
	Joint Genomic Center (ATANAS ATANASSOV, Acad. Prof.)	Movie projection about the plants during the four seasons	
	Institute of Ornamental Plants, Negovan (NADEJDA ZAPRYANOVA, PhD ROSEN SOKOLOV, PhD)	Exposition of flowers	
	Faculty of Natural Science, Shumen University (DIMCHO ZAHARIEV, PhD)	Presentation series about <i>The fascination of plants in Bulgaria</i>	Faculty of Natural Science Shumen
	Institute for Plant Genetic Resources, AA	Open day for visiting the botanical garden	AA Sadovo
	Institute of Agricultural Economics, AA Institute of Cryobiology and Food Technology, AA Institute of Animal Science, AA	Round table about <i>The agricultural science in favor to the practice</i>	AA Sofia
	Institute of Soil Science, Agrotechnology and Plant Protection, AA	International conference about <i>Soil and agrotechnology in a changing world</i>	AA Sofia
4 th 2017	Agrobiointitute, AA (ANELIA IANTCHEVA, PhD)	Presentations Plant Art corner for kids Planting seeds and plants in soil Contests on topic <i>Protected and endangered Bulgarian plant species</i> (photography, drawing, presentation, video, essay) Awarding of certificates and prizes	Faculty of Biology Sofia
	Faculty of Biology, Sofia University (MIROSLAVA ZHIPONOVA, PhD; KAMELIYA YOTOVSKA, PhD; Dean STOYAN SHISHKOV)	Presentations and practical demonstrations Visit of Herbarium of SU	

FoPD	Bulgarian institutions (main organizers)	Type of activities	Location
	Institute of Ornamental Plants, Negovan (NADEJDA ZAPRYANOVA, PhD)	Exposition of flowers	
	NATURAL+ Ltd.	Kombucha drink testing and discussion	
	School company "Alpha" from Secondary School "Kozma Trichkov" - Vratsa	Environmental technologies	
	Faculty of Natural Science of Shumen University (DIMCHO ZAHARIEV, PhD)	Program dedicated to the medicinal plants	Faculty of Natural Science Shumen
	Agricultural University, Plovdiv (SVETLA YANCHEVA, PhD)	Bio-exhibition	Agri-cultural University, Plovdiv
5 th 2019	Agrobioinstitute, AA (ANELIA IANTCHEVA, PhD)	Presentations Plant Art corner for kids Planting seeds and plants in soil Contests on topic <i>Plants as a food for animals and humans</i> (photography, drawing, presentation, video, essay) Awarding of certificates and prizes	Faculty of Biology Sofia
	Faculty of Biology, Sofia University (MIROSLAVA ZHIPONOVA, PhD; KAMELIYA YOTOVSKA, PhD; Dean STOYAN SHISHKOV)	Presentations and practical demonstrations	
	American College of Sofia (GANKA DINEVA, PhD)	The Biotechnology Club	
	Institute of Ornamental Plants, Negovan (NADEJDA ZAPRYANOVA, PhD)	Exposition of flowers	
	Faculty of Natural Science of Shumen University (DIMCHO ZAHARIEV, PhD)	Program <i>No one is bigger than bread</i>	Faculty of Natural Science Shumen
	Agricultural University, Plovdiv (SVETLA YANCHEVA, PhD)	Gathering organized by the Student Council	Agri-cultural University, Plovdiv
	Institute of Plant Physiology and Genetics (IPPG), Bulgarian Academy of Sciences (BAS) (VALYA VASSILEVA, PhD)	Confocal microscopy for studying NudC proteins in roots	IPPG, BAS

Table 3. FoPD events in the Faculty of Biology of Sofia University. Numerous activities were organized by faculty teams including the Departments of Plant Physiology, Methodology of Biology Education, Biochemistry, Biophysics and Radiobiology, Botany, General and Applied Hydrobiology, Virology, Biotechnology, General and Industrial Microbiology, as well as Bachelor (also Erasmus), Master and PhD students. The Agrobioinstitute', as well as other partners' topics are included.

FoPD	Participants from Faculty of Biology				Topics of presentations and practical demonstrations
	BSc	MSc	PhD	Departments	
3 rd 2015	26	7	4	18 members	"FLORA OF TASMANIA" – the exotic plant biodiversity on the island. (Assist. Prof. Lyuben Zagortchev, Prof. Mariela Odjakova) "SALT-TOLERANT PLANTS. FROM THE FIELD TO THE LABORATORY AND BACK" – molecular approaches to improve the plants sustainability. (Assist. Prof. Lyuben Zagortchev, Prof. Mariela Odjakova) "ORCHIDS" – types of orchids, their cultivation and characteristics. (Hristina Samardzhieva) "THE FORESTS – THE LUNGS OF THE EARTH" – importance of maintaining the forests that provide the oxygen for breathing. (Thomas Damjanov, Sergey Kavlak) "PLANT-PREDATORS" – interesting facts about carnivorous plants. (Martin Ninov) "AVOCADO IN POT" – interesting facts about the avocado and its cultivation. (Desislava Mantovska) "CRYOPRESERVATION IN PLANTS" – a method of freezing plants for their long-term preservation. (Assist. Prof. Daniela Dragolova, Prof. Veneta Kapchina-Toteva) "PLANT PATHOGENS – RISING THREAT FOR BIOLOGICAL DIVERSITY" – information about the causes of disease in plants. (Agrobioinstitute: Assist. Prof. Aneta Lyubenova, Assoc. Prof. Slavtcho Slavov, Prof. Rossitza Batchvarova) "MOLECULAR MARKERS FOR INCREASING THE EFFICIENCY OF SELECTION OF ECONOMICALLY IMPORTANT CROPS" – discussion of the contemporary approaches for improving plant species that are important for mankind. (Agrobioinstitute: Assoc. Prof. Nikolai Christov, Dr. Stefan Tsonev, Dr. Lyubov Hristova, Assoc. Prof. Elena Todorovska) "FROM THE CELL TO THE WHOLE PLANT" – explanation about the unique ability of plants to regenerate. (Agrobioinstitute: Miglena Revalska, Assoc. Prof. Anelia Iantcheva) "ROOT CULTURES" – applications of root cultures from medicinal plants. (Nia Petrova, Assist. Prof. Zhenya Yordanova) "THE MAGIC OF THE BULGARIAN HERBS" – role of the Bulgarian herbs for health and demonstration of representatives in a tube. (Assist. Prof. Milena Dimitrova)

FoPD	Participants from Faculty of Biology			Topics of presentations and practical demonstrations
	BSc	MSc	PhD	
				“HABERLEA AND THE SECRET OF THE ETERNAL LEAF” – how one endemic plant can reveal the secrets of resurrection – presentation and demonstration. (Agrobioinstitute: Assist. Prof. Daniela Moyankova, Petko Mladenov, Prof. Dimitar Djilianov) “ROLE OF THE PLANTS FOR THE WATER WORLD” – discussion about the importance of plants for the life in the water, as well as the business aspects of the work with aquatic plants. (Vasilena Angelova, Eleonora Fikovska, Stefani Pyrvanova, Dr. Marieta Stanachkova, Assoc. Prof. Galerida Raykova, Prof. Yana Topalova) “THE WATER MOVEMENT IN THE PLANT CELLS” – observation under microscope of plasmolysis in epidermis of red onion. (Assist. Prof. Daniela Dragolova) “THE ROLE OF STOMATA IN PLANTS” – observation of stomata cells under microscope. (Assist. Prof. Miroslava Zhiponova) “WHAT IS PHOTOSYNTHESIS?” – experiment about the properties of the plant pigments. (Trifon Sotirov, Martin Maznilev, Milena Milekova) “THE FASCINATION OF MICROALGAE” – demonstration of pigments isolated from algae. (Assoc. Prof. Ganka Chaneva) “THE VOICE OF PLANTS” – application of biophysical approach for “hearing” the plants. (Stela Dimitrova, Petar Markov, Assist. Prof. Kolyo Dankov, Momchil Paunov, Prof. Vasilii Goltsev) “DID YOU KNOW THAT THE PLANTS HAVE HORMONES?” – introduction into the classes of plant hormones that mediate signals of how plants should grow and develop appropriately. (Assist. Prof. Miroslava Zhiponova); “ABSCISIC ACID” (Ivalena Ilieva, Miroslava Ivanova); “AUXINS AND CYTOKININS” (Boryana Ivanova, Hyuliya Tatarly, Ana Vylkova, Borislava Stanoykova, Mirela Georgieva, Yoana Kirilova, Carmen Yordanova, Dimitir Dimitrov, Runyana Ganeva); “GIBBERELIC ACID” (Joe Velchev, Alexander Kavazov); “ETHYLENE” (Zornitsa Kirilova, Bojidara Pavlova, Prof. Evgeni Ananiev) “FLOWER IN THE TUBE” – propagation of plants in test tubes. (Maria Rogova, Anelia Raycheva, Katya Ivanova) VISIT OF THE SOFIA UNIVERSITY HERBARIUM. (Assoc. Prof. Asen Asenov, Prof. Maya Stoyneva) ORNAMENTAL PLANTS EXHIBITION (Negovan: Assoc. Prof. Nadejda Zapryanova, Assist. Prof. Rosen Sokolov)

					PLANTING OF ROSES, GOJI BERRIES AND FLOWERS IN THE FACULTY BACKYARD TO MEMORIZE THE FIRST FOPD. (Assist. Prof. Dilyana Nikolova, Assist. Prof. Yana Evstatieva, Assist. Prof. Anita Tosheva, Prof. Veneta Kapchina-Toteva; Agrobiointstitute; Assist. Prof. Nabil Mosa Abumhadi) LOTTERY (Assoc. Prof. Anelia Iantcheva, Prof. Rossitza Batchvarova) DRAWING CONTEST (Agrobiointstitute; Assist. Prof. Kameliya Yotovska) PHOTOGRAPHY CONTEST (Silvana Angelova, Dayana Angelova, Bojidara Pavlova, Ivalena Ilieva, Desislava Mantovska) MOVIE PROJECTION (Assoc. Prof. Dolya Pavlova, Acad. Prof. Atanas Atanasov, Assist. Prof. Ilian Badjakov)
4 th 2017	25 + 2 Erasmus	5	3	13 members	“ORGANIC FERTILIZERS - DO IT YOURSELF” – benefits of bio compost. (Gabriela Tsoynska) “FOR PLANTS AND FOR WATER – WHY ARE PLANTS “SWEATING”?” – explaining what is transpiration. (Violeta Kostova, Iliyana Stoyanova, Assoc. Prof. Kameliya Yotovska, Assoc. Prof. Asya Asenova) “CARNIVOROUS PLANT” – facts that make them fascinating. (Dayana Paskova, Zhasmina Redzhepova) “ABOUT THE MEDICINAL PLANTS” – tradition and science. (Natalie Atanasova, Evgenia Mihaylova) “THE MEDICINAL MARIJUANA” – pros and cons. (Teodora Uzunova, Desislava Kircheva) “THE BENEFIT OF PLANT BIOTECHNOLOGY” – in vitro micropropagation of valuable plant species. (Ivalena Ilieva, Marina Alexeeva, Assoc. Prof. Zhenya Yordanova, Prof. Veneta Kapchina-Toteva) “REASONS FOR STUDYING THE PLANTAIN (GENUS <i>PLANTAGO</i>)” – approaches to explore unknown aspects about this genus. (Ani Kercheva, Dariana Vyllova) “MOLECULAR STUDIES ON HOPS (<i>HUMULUS LUPULUS</i>)” – the secret molecules that make the plant a cure. (Dimitar Iliev) “KALANCHOE - A HOME PHARMACY” – use of the plant with health purpose. (Alexandra Nissimova, Joe Velchev) “ESSENTIAL OILS” - biosynthesis, accumulation and excretion in aromatic plants; extraction of essential oils. (Zvezdelina Petrova and Irina Petrova) “KOMBUCHA OR THE ROAD TRIP OF <i>CAMELLIA SINENSIS</i> TEA” (NATURAL+ Ltd.) “VAMPIRE PLANTS. BIOLOGY OF PARASITIC PLANTS OF THE GENUS <i>CUSCUTA</i>” – how the Cuscuta acts. (Assist. Prof. Denitsa Teofanova, Assoc. Prof. Anita Tosheva, Assoc. Prof. Lyuben Zagorchev)

FoPD	Participants from Faculty of Biology			Topics of presentations and practical demonstrations
	BSc	MSc	PhD	Departments
				“PLANTS IN FAVOR OF FIGHTING VIRUSES” (Dr. Anton Hinkov, Venelin Tsvetkov, Assoc. Prof. Stoyan Shishkov) “PLANT IMMUNITY” – the plants have chemical defence. (Branislav Dimić, Tuba Öztürk, Dilyan Minev) “THE RESPONSE OF ORDINARY BEECH TO BEETLE INVASION” – tree against insect. (Vasil Chavgov, Assoc. Prof. Ganka Chaneva) “CONFRONTATION OF ABSICISIC AGAINST GIBBERELIC ACID” – keeping the balance of plant growth. (Maria Tomeva, Viktor Rashev) “THE CURIOUS ACTION OF THE AUXIN” – the plant hormone mediates important signals. (Silvia Ganeva, Iva Dimitrova) “THE VOICE OF PLANTS” – biophysicists can hear it! (Bojidara Pavlova, Stella Dimitrova, Momchil Paunov, Prof. Vasilij Goltsev) “AGRICULTURAL CRATES WITH SPECIAL COATING FOR CONTINUOUS FRESHNESS OF AREAS AND VEGETABLES FOR PEOPLE WITH SMALL FARMS AND GARDENS” (School company "Alpha" "Kozma Trichkov"- Vratsa) “PLANT MORPHOLOGY” – demonstration (Agrobiointstitute: Functional Genetics Legumes Group) “INFORMATION CENTER IN PLANT BIOTECHNOLOGIES” – presentation (Agrobiointstitute Abiotic Stress Group) SCIENTIFIC POSTER SESSION – “Plant abiotic stress”, Project “Evaluation and monitoring of the effect of genetically modified plants on agro-ecosystems”, “Beautiful but dangerous: the invasive species of genus Phytophthora”, “Production of valuable products from microalgae”, “Functional genetics-cereals”, “The Bulgarian tomatoes Pako-Orange could substitute the carrots from the children pure! Tell to Mom!”, “Plant genetic resources”, “Plant molecular genetics”, “Project STARBIOS–expansion of the responsible biosciences”, “Viruses – the invisible plant enemy”, “Plant biology in legumes” (Agrobiointstitute: Assist. Prof. Mariana Radkova, Prof. Dimitar Djilianov, Assoc. Prof. Daniela Moyankova, Assoc. Prof. Petya Stoykova, Prof. Ivanka Kamenova, Assoc. Prof. Anelia Iantcheva, Assist. Prof. Miglena Revalska) TOMATO PLANTING (Agrobiointstitute) ART CORNER FOR KIDS - applications, drawings, cards (Agrobiointstitute, Assis. Prof. Liliya Georgieva)

5 th 2019	3 & 6 school pupils	3	2	11 members + 2 guests	ORNAMENTAL PLANTS EXHIBITION (Negovan: Assoc. Prof. Nadejda Zapryanova) DRAWING CONTEST (Agrobioinstitute: Assist. Prof. Kameliya Yotovska) VISIT OF THE SOFIA UNIVERSITY HERBARIUM. (Assoc. Prof. Asen Asenov, Prof. Maya Stoyneva) STUDENT'S CLUB SKOREC – live plants and animals, home-made souvenirs. (Dimitar Dimitrov, Kiril Vylkanov, Adaim Palov, Plamen Petrov, Siyka Lakova, Assoc. Prof. Atanas Grozdanov) “PLANTS - OBJECT TO ARTISTIC INSPIRATION” - artist guest Savina Mantovska “APPLYING A JELLYFISH PROTEIN FOR EXPERIMENTS” – the molecule that emits light to see it (The “Biotechnology Club of the American College-Sofia: Dr. Ganka Dineva, Mariya Cholakova, Boris Beev, Eva-Mariya Tsanova, Yasen Nikolov, Alexandra Velkova; Assoc. Prof. Iliyana Ilieva) “LIGHT RECIPE TO IMPROVE PLANT GROWTH” – light intensity needs to be adjusted for each plant. (American College-Sofia: Yvette Dimitrova, Ivo Yordanov; Assoc. Prof. Miroslava Zhiponova) “THE GLUTEN-FREE DIET - MYTH OR SCIENCE” – interesting facts about the food we eat. (Alexandra Atanasova, Kristiyana Georgieva, Assoc. Prof. Denitsa Teofanova, Assoc. Prof. Lyuben Zagorchev) “PLANTS LIKE FISH - WHAT ARE THE AQUACULTURES?” – the neighborhood of pea and golden fishes. (Alexander Tomov, Vasil Chavgov, Assist. Prof. Detelina Petrova, Assoc. Prof. Ganka Chaneva) “HOW TO EXPLORE MEDICINAL PLANTS?” - in vitro growth of valuable plant species. (Assist. Desislava Mantovska, Assist. Prof. Mariya Rogova) “DID YOU KNOW THAT PLANTS HAVE HORMONES?” - introduction into plant hormones that mediate signals of how plants should grow and develop appropriately. (Assoc. Prof. Miroslava Zhiponova) “IDEA FOR ECOLOGICAL FLORICULTURE” – come and get it! (Anelya Raycheva, Assist. Prof. Marieta Hristozkova) “WHAT DO THE ANIMALS EAT” – demonstration of forage and seed samples. (Agrobioinstitute: Assoc. Prof. Anelia Iantcheva) ART CORNER FOR KIDS - applications, drawings, cards (Agrobioinstitute: Assist. Prof. Liliya Georgieva) ORNAMENTAL PLANTS EXHIBITION (Negovan: Assoc. Prof. Nadejda Zapryanova) STUDENT'S CLUB SKOREC - live plants and animals, home-made souvenirs. (Vassilin Anatkov, Dariana Atanasova, Assoc. Prof. Atanas Grozdanov)
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important for teaching and learning. The competences that young people form at school affect their ability to continue their education and integrate successfully in society (JERRIM ET AL. 2020). It is considered that activities involving interactions between students and professionals are useful for efficient competency achievement (ROMANOVTSOVA 2016; UALIYEVA ET AL. 2016). During this process occur a changing the focus of the training to mastering key competences and developing problem-solving abilities such as: integrated cross-curricular interaction; practical orientation of the training; result orientation; implementation of innovative approaches and practices in the teaching and learning process. In the focus of the FoPD's scope is the integration of young people and improving their motivation for professional orientation. Respectively, in Bulgaria during the organized FoPDs, three groups of youngsters could be distinguished – under school age, school age, and students. The first group of kids seemed to be enthusiastic about the engagement in any kind of activity. The pupils were interested in the demonstrations and mostly of these activities where they could participate, and they were readily initiating discussions demonstrating personal knowledge and interest. The group of the students were put in the role of teachers and it was observed their evolution in hours – from unsecure presenters to well erudite supervisors in the field of science that showed eagerness for better performance. In this way, mainly the students but also the school children started to develop certain science literacy that is ability for conscious and responsible engagement in questions of the natural sciences, for use of technology, for application of theoretical knowledge to practice, for explaining natural processes and phenomena, and for making reasoned conclusions about the natural sciences as part of the knowledge for the world (CRESWELL ET AL. 2015).

From the teachers' point of view, the modern environment offers a wealth of information flow and the teacher has the privilege, but also the responsibility to choose those educational activities that will motivate students to participate actively, provoke their thinking and help him achieve the intended results. One of the biggest challenges for the modern teacher is to inspire his students to realize the meaning of skill acquisition.

Extra-curricular activities are particularly useful for this purpose, including visiting universities and laboratories and getting acquainted with the work of scientists. The scientists can show both students and the teacher a different perspective, "recharge" them and be more relevant to the situation. Therefore, FoPD could be considered as such opportunity.

CONCLUSION

As a part of scientific community and researchers involved in plant science we realize that the international FoPD aims to bring plant researchers closer to the society and to increase awareness for plants, and innovation activities of plant science, with a view to improve the public recognition of plants, creating a model for understanding

of their impact on citizen's daily life, and encouraging society and especially young people to assess role of plants in sustainability of environment (**Fig. 5**).

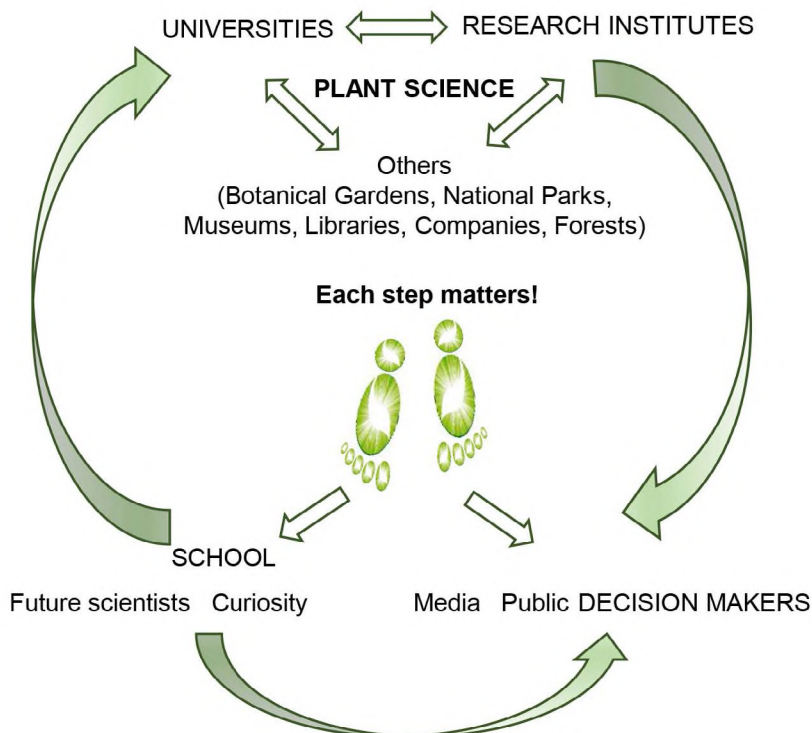


Fig. 5. Impact of FoPD on citizen society.

Regarding future perspectives, we have to note that easier electronic access to the organized events would allow attendance from distance and will make the benefits from FoPD available to a broader public (ASENOVA ET AL. 2017). We hope that the present report will motivate more Bulgarian organizations and individuals to join in the future FoPDs and other similar events making science popular.

CONFLICT OF INTERESTS

The authors declare that there is no conflict of interests regarding the publication of this article.

AUTHOR CONTRIBUTIONS

A. V. IANTCHEVA, M. K. ZHIPONOVA and K. S. YOTOVSKA contributed to the design, discussion and writing of the manuscript.

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LINKS TO THE INFORMATION IN THE PAPER:

Online links in the text, last accessed on April 2020, at:

EPSO sites: <https://epsoweb.org/>, <https://epsoweb.org/about-epsoweb.org/events/fopd-events/>

FoPD sites: <https://plantday18may.org/>, <https://plantday18may.org/about-us/>

FoPD PR TOOLBOX POSTERS (<https://plantday18may.org/pr-toolbox/>): <https://plantday18may.org/wp-content/uploads/2019/01/Poster-1.pdf>).

FoPD-2012 INDORMATION: <https://blog.rsb.org.uk/fascination-of-plants-day-18th-may-2012/>

FoPD-2013-SUCCESS-STORIES: <https://plantday2015bg.files.wordpress.com/2020/04/suppl.-information-fopd-2013-success-stories.pdf>

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FoPD-2019-SUCCESS-STORIES: <https://plantday2015bg.files.wordpress.com/2020/04/suppl.-information-fopd-2019-success-stories.pdf>

FoPD-2019 FACEBOOK: <https://www.facebook.com/pg/Fascination-of-Plants-Day-419094251484268/posts/>

FoPD STATISTICS: <https://plantday18may.org/statistics/>

THE PLANT CELL (ONLINE): <http://www.plantcell.org/site/teachingtools/teaching.xhtml>

WHY STUDY PLANTS? presentation in Bulgarian: <https://plantday2015bg.files.wordpress.com/2020/04/suppl.-information-why-study-plants-bg.pdf>

FoPD-2015 IN BULGARIA: <https://www.slideshare.net/plato347bc/fascination-of-plants-day2015bulgaria>

FoPD-2015 IN FACULTY OF BIOLOGY, Plantday2015bg: <https://plantday2015bg.wordpress.com/>

FoPD-2017 IN FACULTY OF BIOLOGY: https://www.uni-sofia.bg/index.php/bul-novini/novini_i_sbitiya/chetv_rti_den_na_ocharovanieto_na_rastenyata_2017

FoPD-2017 IN SHUMEN UNIVERSITY: <http://shu.bg/новини-фокус/2017/международен-ден-на-очарованието-на-растенията>

FoPD-2017 IN AGRICULTURAL UNIVERSITY, PLOVDIV: <http://u4avplovdiv.com/годи-бери-жълт-мак-и-английска-роза-в>

FoPD-2019 IN BULGARIA: <https://plantday18may.org/category/europe/bulgaria/>

FoPD-2019 IN BULGARIA, FACEBOOK: <https://www.facebook.com/FascinationOf->

PlantsDay2019/

FoPD-2019 IN FACULTY OF BIOLOGY: https://www.uni-sofia.bg/index.php/bul/universitet_t/fakulteti/biologicheski_fakultet2/arhiv/arhiv_2019/den_na_ocharovanieto_na_rastenyata

FoPD-2019 IN SHUMEN UNIVERSITY: <http://shu.bg/новини-фокус/новини-2019/международен-ден-на-очарованието-на-растенията> FoPD-2019 in Shumen University: <https://bnr.bg/shumen/post/101119678>

FoPD-2019 IN INSTITUTE OF PLANT PHYSIOLOGY AND GENETICS (IPPG), BULGARIAN ACADEMY OF SCIENCES (BAS): <https://nova.bg/mynews/view/2019/05/17/89567/очарованието-на-растенията>

FoPD-2019 IN IPPG, BAS: <https://www.youtube.com/watch?v=VlgFt6-0wtc&-feature=youtu.be>

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