University of Agronomic Science and Veterinary Medicine Bucharest

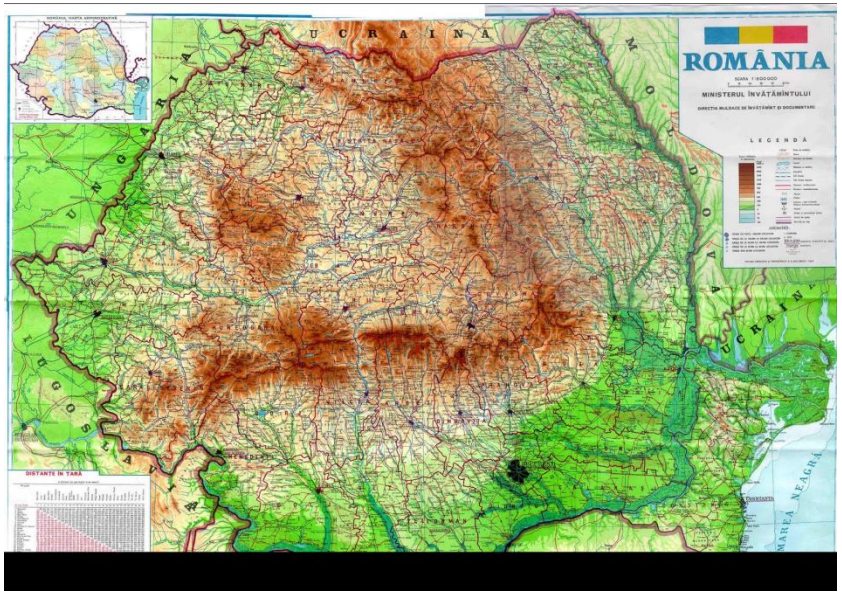
Research activity at Research Center for Studies of Food and Agricultural Products Quality

Prof. Ph.D. Liliana BĂDULESCU

The University of Agronomic Sciences and Veterinary Medicine in Bucharest (UASVMB) is one of the oldest education institutions in Romania.

- in 1852 - "The Agricultural Institute in Pantelimon"

- in 1855 - "The School for Veterinary Education"



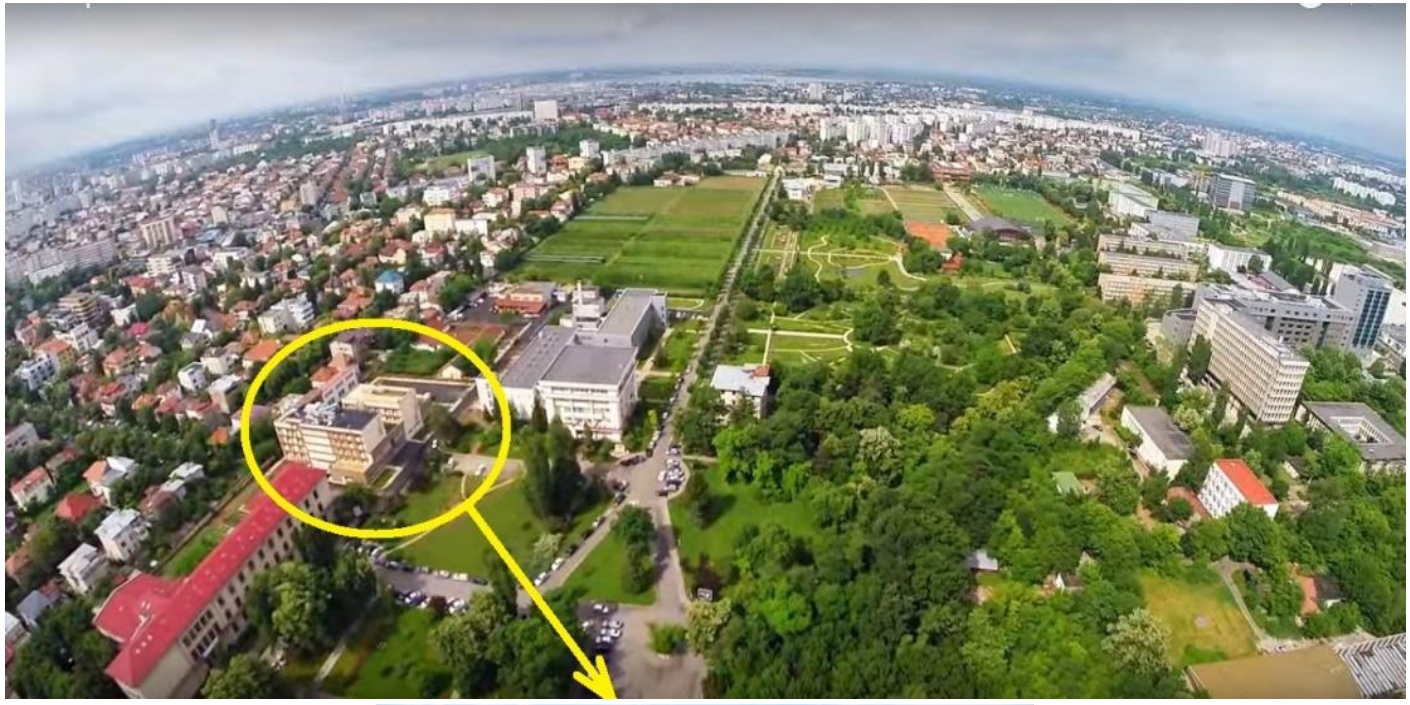
Nowadays, the ***UASVMB*** is a modern education institution with all the forms of higher education, ranging from BSc, to MSc and PhD studies

University of Agronomic Sciences and Veterinary Medicine of Bucharest, ROMANIA

USAMV BUCURESTI

CENTRUL DE CERCETARE PENTRU STUDIUL CALITATII PRODUSELOR AGROALIMENTARE

University of Agronomic Sciences and Veterinary Medicine of Bucharest, ROMANIA



Research Center for Studies of Food Quality and Agricultural Products

UNIUNEA EUROPEANĂ

GUVERNUL ROMÂNIEI

Instrumente Structurale
2007 - 2013

SECTORAL OPERATIONAL PROGRAMME "INCREASE OF ECONOMIC COMPETITIVENESS"

EU co-financed program by European Regional Development Fund
"Investing in your future!"

Infrastructure Development of a Research Centre for the Quality Study of Food Products - HORTINVEST

Beneficiary: University of Agronomic Science and Veterinary Medicine Bucharest

Project POSCCE ID_931, SMIS-NSRF code 14051.
Duration: 2010-2016
Value: ≈ 10.000.000 €, of which 88.43% from the ERDF and 11.57% from the national budget

RESEARCH CENTER FOR STUDIES OF FOOD QUALITY AND AGRICULTURAL PRODUCTS

WHO WE ARE?

The newest and most modern research infrastructure of University of Agronomical Sciences and Veterinary Medicine of Bucharest

WHAT WE HAVE ACHIEVED?

A **modern state-of-the-art research center for R&D activities**, equipped at the highest European standards, designed with facilities that ensure a multidisciplinary approach for all of the food related topics of study and also *reduce the risk of environmental pollution.*

OTHER FACILITIES

A fully automated **research greenhouse-block**, with multiple self-control functions and accommodate the latest equipment,

More than 200 equipments, out of which 8 with more than 100,000 euros:
https://erris.gov.ro/RESEARCH-CENTER-FOR-STUDIES--1

RESEARCH CENTER FOR STUDIES OF FOOD QUALITY AND AGRICULTURAL PRODUCTS

LABORATORIES:

1.Laboratory of integrated fruit growing
2. Laboratory of molecular virology
3. Laboratory of plant multiplication
4. Laboratory of diagnosis and plant protection
5. Laboratory of post-harvest technologies
6. Laboratory of agrochemistry
7. Laboratory of management, IT and econometry
8. Laboratory of sensorial analysis
9. Laboratory of physico-chemical analysis
10. Laboratory of microscopy and plant anatomy
11. Laboratory of plant physiology
12. Laboratory of molecular plant biology
13. Laboratory of molecular plant physiology

RESEARCH GREENHOUSE

RESEARCH LABORATORIES:

1. Laboratory of integrated fruit growing

Activities driven by the Priority Research Line **II**, as follows:

- The study of the tree as a complex productive system;
- The study of the integrate fruit growing plantation as an enduring ecosystem;
- The research of **new varieties** and mother plants suitable for low environmental impact fruit growing;
- The research of *the optimization culture technologies in integrated fruit growing plantations*;
- The study of the relationships between plant and environment through a climate change point of view.

RESEARCH LABORATORIES:

2. Laboratory of molecular virology

Activities driven by the Priority Research Line **II** and **III**, as follows:

- The extraction of ADN, ARN genetic material, sequencing activities;
- The assisted selection using molecular markers;
- Hibridations, amplification of genetic material, detection of a variety of plant viruses.

This laboratory propose the following immediate research topic: the mass selection of plum and apricot tree using molecular markers, specific environmental monitoring and protection.

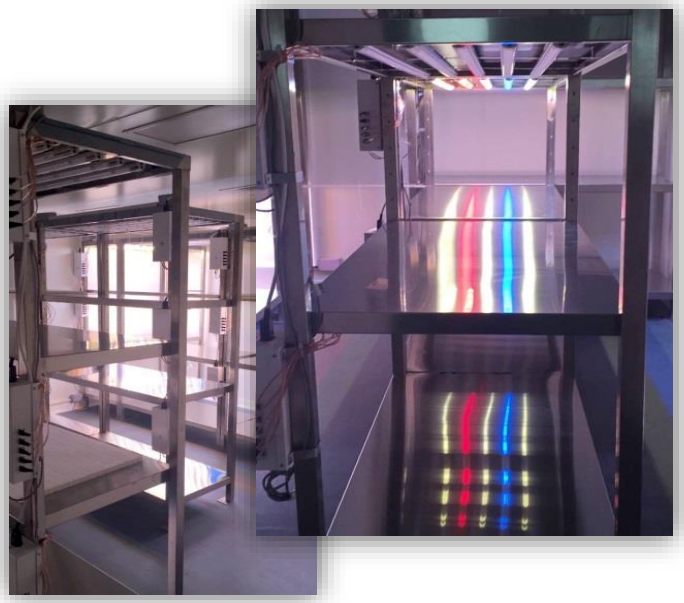
RESEARCH LABORATORIES:

3. Laboratory of plant multiplication

<u>This laboratory propose the following immediate research topic</u>: the creation and implementation of new biotechnological techniques in plant propagation; the biodiversity conservation of the horticultural plant species; the valorization of the wild flora species, having a great decorative value, by theirs utilization as cultivated plants.

Activities driven by the Priority Research Line **IV**, as follows:

- The study of the main methods of plants propagation,
- The reduction of growth time for young plants,
- The production of planting material that is free of viruses and pests.



RESEARCH LABORATORIES:

4. Laboratory of diagnosis and plant protection

<u>This laboratory aims as immediate research themes</u>: the food safety both for the population and livestock; ***reducing the negative influence of plant protection measures***, the preservation of biodiversity in agro ecosystems by reducing the negative influence of plant protection measures, ***the development of new technologies for crop protection, according to the EU regulations.***

Activities driven by the Priority Research Line **I**, as follows:

- The diagnosis of diseases and pests of the horticultural crops:
- The analyze of the samples (cultivated plants or food products) and theirs load with pathogens and pests.

RESEARCH LABORATORIES:

5. Laboratory of post-harvest technologies

<u>This laboratory proposed the following immediate research topic</u>: post-harvest non-polluting technologies to improve the storage capacity of food products; the analyze of food products quality through non-destructive techniques.

Activities driven by the Priority Research Line **II**, as follows:

- The testing of storage capacity in different storage condition;
- The identifications of biological control techniques for specific storage pathogens;
- The testing of post-harvest treatments in order to improve the storage capacity.



RESEARCH LABORATORIES:

6. Laboratory of agrochemistry

The development of new methods for analyzing the compounds of biological interest from soil, plants and food products.

Activities driven by the Priority Research Line **I**, as follows:

- Agrochemical analysis of plant, soil, substrate and fertilizers.
- Physico-chemical analyzes based on ion-chromatography (determination of anions, cations and organic acids) and UV-VIS spectrophotometry;

RESEARCH LABORATORIES:

7. Laboratory of management, IT and econometry

This laboratory is dedicated to the **collection, storage and structuring the research information data and its processing** in order to better valorize the research results. In this laboratory we elaborate **mathematical models** in order to assess and document the decision making.

Proposed activities

- The development of structural models associated with bio-ecosystems of vineyards and orchards;
- The decision-making patterns based on the analyze of existing information from databases or the information obtained from the research carried out in stationary or expeditionary methods based on remote sensing;
- The mathematical formalization of bio-economic processes and the risks of environmental and anthropogenic factors.

RESEARCH LABORATORIES:

8. Laboratory of sensorial analysis

<u>This laboratory proposed the following immediate research themes:</u> new products development by evaluating the new products through sensory analysis methodology; the evaluation and comparison of new food processing technologies by sensory; the evaluation of food quality; activities to prevent the fraud in the food industry.

Activities driven by the Priority Research Line **I**, as follows:

- Sensory analysis of wine and food through computerized data collection and processing using advanced specialized software;
- Physico-chemical analysis of wines and the discrimination of wine groups using a flash GC with 2 chromatographic columns and FID detectors working on the principle of an electronic nose;
- Organization of the wine testing competitions, or other food products competitions.

RESEARCH LABORATORIES:

9. Laboratory of physico-chemical analysis

This laboratory propose the next research themes: traceability of some components (minerals, pesticide residues, toxins etc.) during the production chain (soil-plant-crops-finite product); the biodiversity - sustainable valorization and preservation.

Activities driven by the Priority Research Line **III**, as follows:

- Physical and chemical analysis based on gas chromatographic methods coupled with FID and MS detectors (to perform pesticides residues determination, volatiles components, amino acids, carbohydrates etc.); FT-IR spectrometry and liquid chromatography (vitamin C determination, carbohydrates etc.), ICP-MS spectrometry (mineral elements determination) for food products;
- The development of new analytical methods for the compounds of biological interest.

RESEARCH LABORATORIES:

10. Laboratory of microscopy and plant anatomy

This laboratory proposed the following immediate research topic: research regarding the biodiversity of wild flora species, in order to valorize them; morpho-structural plants characteristics in the biotic and abiotic stress conditions.

Activities driven by the Priority Research Line **IV**, as follows:

- Specific plant morphology and anatomy activities;
- Optical, electronic and fluorescence microscopy activities.

RESEARCH LABORATORIES:

11. Laboratory of plant physiology

<u>This laboratory proposed the following immediate research topic</u>: the study of biotic and abiotic stress for cultivated plants and wild species; the biodiversity and the cultural technologies effects on the yield and productivity.

Activities driven by the Priority Research Line **I**, as follows:

- Specific determination of the physiological processes rate (photosynthesis, transpiration, respiration) *in vivo* and in laboratory, the osmotic potential determination, membrane permeability, the determination of the concentration of some biochemical parameters.

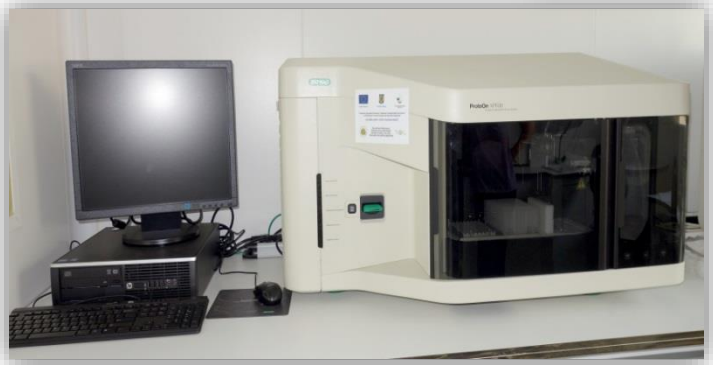
RESEARCH LABORATORIES:

12. Laboratory of molecular plant biology

The proposed immediately research themes are: the GMO impact on food products and health; GMO coexistence with genetically unmodified species; gene and gene products flux in the ecosystem and food chain; analysis of the food products which possibly contain GMO.

Activities driven by the Priority Research Line **II**, as follows:

- DNA extraction;
- DNA quantification;
- Detection and quantification of genetically modified organisms;
- GMOs analysis by electrophoresis and imagistic;
- The development of new GMO analysis methods;
- special genomic and proteomic analysis.



RESEARCH LABORATORIES:

13. Laboratory of molecular plant physiology

The proposed immediately research subjects are: the structure-functions relations at the gene-protein-metabolite; the study on the product quality based on QTL technique and possibility to select variants with an economical valuable quality.

Activities driven by the Priority Research Line **I**, as follows:

- special genomic analysis, proteomics and metabolomics to study the functions and interactions at the molecular level in plants.

Research Greenhouse

Considered an unique concept in Romania due to the structure of 19 integrated minigreenhouses, having each individual programming possibilities and the monitoring of the internal and external environmental factors, as well as its high automation, this glass greenhouse is vital for the research in the fields of vegetable growing, floriculture, fruit growing.

✓ 8 compartments of 160 m², 10 research rooms of 64 m² and one of 36 m².

✓ Total area = 3218,19 m².

Research Greenhouse

- The climatic conditions in each of the research greenhouse compartments can be programmed based on information received from weather stations belonging to each compartment and also from the main weather station form outside the greenhouse, thus achieving exceptional conditions for the study of mineral nutrition, the influence of environmental abiotic factors on the growth processes and plant development.
- The monitoring system provides an impressive amount of data collected in real time, which allows easy analysis and interpretation of the results.
- Each research rooms provides facilities for specific research using a variety of systems: plant culture systems (fixed tables, mobile tables and in soil), irrigation (through flooding or drip irrigation) and drainage, heating, shielding, ventilation, supplemental lighting lamps assimilation 400 / 600w, etc.

PRIORITY RESEARCH LINES set by the infrastructure funding project

I. Correlations between *the effects of biotic and abiotic stress on the horticultural species* and *the crop productivity technologies*, with implications on the quality of plant products.

Within this research line, the effect of environmental factors (biotic or abiotic) on the quality of food products (fresh, processed or during storage) is morphologically, physiologically, phytopathological, sensory and technological analysed.

This multidisciplinary approach will bring a valuable contribution to elucidate the factors involved in *plant-pathogen and plant-environmental factors interactions* and the physiological, morphological and anatomical changes that leads to high plant and animal productions and quality.

It monitors both the quality of plant products during the growth and development period and the storage period, *following the traceability of useful or residual components (minerals, pesticide residues, toxins, etc.) throughout the production chain (soil-plant- vegetal product-end product).*

PRIORITY RESEARCH LINES set by the infrastructure funding project

A major objective of the theme will be the study of the means *to optimize the production technologies in integrated orchards based on the plant-environmental factors relationships, in the light of climate change*. The development of mathematical models underlying the substantiation of the decisions taken by the farm management based on knowledge and research results is another leading objective.

II. The tree studying as *a complex production system* and the examination of integrated orchards as sustainable ecosystems.

Within this research line, *the creation of new fruit tree varieties and rootstocks suited to fruit production with reduced environmental impact*, by classical methods or by molecular markers-assisted selection is envisaged. The development of the plant viruses' detection methods will allow a rigorous and proper plant selection with productive potential in an early stage of development, raising the productivity of production technologies.

PRIORITY RESEARCH LINES set by the infrastructure funding project

III. The study of the plant products quality based on the *relationship structure-features at a gene-protein-metabolites level*, for the selection of variants with special economic value.

The role of plant metabolites and their biosynthetic pathways is a priority for the international scientific community, on which the reference research centers that are already working on, have remarkable results. *Mechanisms of the genes functioning and their control possibilities* ultimately lead ***to enhance*** levels of biochemical composition, leading at high quality of plant products, guaranteeing food safety limits to humans, animals and the environment.

Using established techniques - genomic, proteomic, metabolomic and nutragenomic - ensure adequate scientific basis for selection of plant or animal species variants of special economic value.

PRIORITY RESEARCH LINES set by the infrastructure funding project

IV. Biodiversity – enhancing conservation and sustainable use of natural resources

Within this research line, *complex multidisciplinary research regarding the spontaneous species biodiversity and the capitalization of the species having productive, ornamental or economic potential* followed by their cultivation is envisaged. The coexistence of genetically modified organisms species with the cultivated plants or wild flora will be studied, achieving the flow analysis of genes or of their products in the ecosystem and the food chain (including the analysis of food products likely to contain GMOs).

The *morphological, anatomical, physiological, phytosanitary and technological research* are oriented to preserve the biodiversity within the ecosystems ***by reducing the negative impact of the applied plant protection measures.*** Updating the databases about the structure and the biochemical composition of the spontaneous flora and fauna, the development of ecoclimatic and pedological databases (containing spatial georeferenced information through GIS systems combined with data from remote sensing satellite), as well as entomological and phytopathological databases will contribute to *the integrated management of biodiversity,* aiming either at its preservation or its sustainable utilization.

Projects and partenerships
2015- 2021

✓International projects:

ClimaGreen (2021-2023) Program "EEA & Norway Grants" with Norway; Budget 1.216.401 €

Energy-efficient climate control of a greenhouse for increased productivity

https://uefiscdi.gov.ro/eea-norway-grants

- Project manager Ph.D. Ovidiu Jerca

Hort4EUGreen (2020-2023) Program ERASMUS+ *Enhancing practical skills of horticulture specialists to better address the demands of the European Green Deal* with Romania (coordinator), Bulgaria, Hungary and Turkey. Budget 185446 €

https://ec.europa.eu/programmes/erasmus-plus/projects/eplus-project-details/#project/2020-1-RO01-KA203-080398

- Project manager Ph.D. Roxana Ciceoi

Projects and partenerships
2015- 2021

✓International projects:

SusOrgPlus (2018-2021) Program "ERANET – CoreOrganic+" with Germany (coordinator), Romania, Italy, Sweden and Norway; Budget 110.000 €

Development of natural food additives/colourants, sustainable process technologies and a code of practice to increase sustainability and consumer

- Project partner manager Prof. Ph.D. Liliana Badulescu

SusOrganic (2015-2018) Program "ERANET – CoreOrganic+" with Germany (coordinator), Romania, Italy, Sweden and Norway. Budget 100.000 €

Development of quality standards and optimised processing methods for organic produce

- Project partner manager Prof. Ph.D. Liliana Badulescu

- **EUFRUIT** (2016-2019) Program "HORIZON 2020" with 20 research institutions, coordinator University of Aarhus Denmark 28.000 €

- Project partner manager Prof. Ph.D. Florin Stanica

Projects and partenerships
2015 - 2021

✓International projects:

- **HaloSYS (2018-2021) - *Integrated system of bioremediation – biorefinering using halophyte species* - Program "ERANET FACCE SURPLUS" with France, Poland and Romania (coordinator) 115.000 €** http://www.usamv.ro/index.php/ro/721-hallosys
  - Project Partner manager Ph.D. Carmen Constantin

- **ProtectLife** (2017-2020) ***Prevention of Water Contamination from Point Sources with Plant Protection Products by Improving Extension Specialists' Vocational Competences*** - Program ERASMUS with Turkey (coordinator), Romania, Poland and Hungary 11.730 € http://protectlifeproject.net/en/main-page/
  - Project Partner manager Ph.D. Roxana Ciceoi

- **EARLDETECT** (2018-2021) Program EUPHRESCO with Austria (coordinator), Romania, Holland, Russia, Poland. RO contribution 5000 € https://www.euphresco.net/projects/
  - Project partner manager Ph.D. Roxana Ciceoi

Projects and partenerships
2015 - 2021

✓**International projects that used Research Center Infrastructure:**

- **MILDSUSFRUIT** (2020-2023) Program "CORE ORGANIC" Innovative Mild Processing Tailored to Ensure Sustainable and High Quality Organic Fruit Products https://susfood-db-era.net/main/MILDSUSFRUIT
  - Project Partner USAMV Prof. Ph.D. Mona Popa

- **ENHANCE** (2016-2018) Program "HORIZON 2020" with 20 research institutions, *Building an Excellency Network for Heightening Agricultural ecoNomic researCh and Education in Romania*, coordinator USAMV of Bucharest 1.097.020 €
  http://enhance-project.ro/ Project manager Prof. Ph.D. Gina Fintineru

Projects and partenerships
2015-present

✓**National projects:**

➢**SusMAPWaste - *Sustainable use of medicinal and aromatic herbs for the production of value-added products* (2016-2021) financed by ERDF (European Funds), total budget 9.250.426 lei, from ERDF 7.275.344,40 lei**

- *Project coordinator Ph.D. Milen Georgiev, Assoc. Prof. Ph.D. Alina Orţan*



http://www.usamv.ro/index.php/ro/1024-susmapwaste

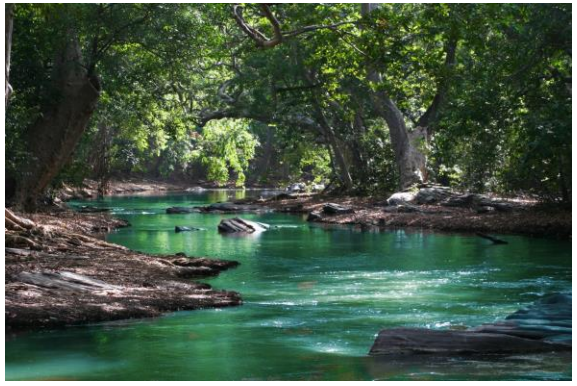
https://susmapwaste.ro/

Projects and partenerships
2015-present

✓**National projects:**

- ***Improving the quality of life by developing new technologies based on effective nanoparticles in water and soil decontamination*** **(2018-2021) financed by UEFISCDI Programme "PARTENERIATE"** http://icvdta.proiectecercetaredezvoltare.ro/index.php/ro/about-the-project/prezentare-proiect

  - *Project institution coordinator Prof. Ph.D. Gabriel Predoi*
  - *Project P3 partner coordinator Ph.D. Carmen Cîmpeanu*



Projects and partenerships
2015-present

✓**National projects:**

ECOTEHNOPOM - ***Increasing the institutional capacity of research - development - innovation in the field of ecological fruit growing*** **(2018-2021) financed by UEFISCDI Programme "PARTENERIATE",** http://ecotehnopomp4.usamv.ro/

- Project institution coordinator Assoc. Prof. Ph.D. Adrian Asănică

- Project P4 partner coordinator Ph.D. Andreea Stan

- **SIMPLANT** - ***Integrated system of ecological management of phytosanitary risks through complex methods of sustainable management of agroecosystems*** **(2018-2021) financed by UEFISCDI Programme "PARTENERIATE",** http://sedmagro.ro/proiect-1-simplant/
- **TEHMIBIOS** - ***Technology for biological soil treatment with microbial bioinoculants*** **(2018-2021) financed by UEFISCDI Programme "PARTENERIATE"** http://sedmagro.ro/proiect2-tehmibios/

- Project institution coordinator Assoc. Prof. Ph.D. Beatrice Iacomi

- Project partner coordinator Ph.D. Roxana Ciceoi

Projects and partenerships
2015-present

✓**National projects:**

- **PLASMA SEED - *Innovative technology for the treatment of non-thermal plasma seeds* (2016-2018) financed by UEFISCDI Programme "PED",**
  - *Project coordinator Assoc. Prof. Ph.D. Mihai Gîdea*

- **Engineered vegetal waste-derived biochar for agronomic and environmental benefits (BIOCHAR) (2020-2022) financed by UEFISCDI Programme "PED",**
  - *Project responsible Ph.D. Violeta Ion*

Projects and partenerships
2015-present

✓**National institutional development projects:**

MINISTERUL EDUCAȚIEI

- **CNFIS-FDI 2021 Development of the institutional capacity for research-innovation within USAMV Bucharest, by increasing the scientific performances in the context of the integration of the European Green Deal.** CNFIS-FDI-2021-0430. Coordinator USAMV Bucharest. Value: 460,000 lei, 2021
- **CNFIS-FDI 2020 Supporting research excellence and enhancing the results of scientific research within USAMV Bucharest.** CNFIS-FDI-2020-0561. Coordinator USAMV Bucharest. Value: 460,000 lei, 2020.
- **CNFIS-FDI 2019 Supporting research excellence and increasing scientific performance within USAMV Bucharest** CNFIS-FDI-2019-0492. Coordinator USAMV Bucharest. Value: 468,000 lei, 2019.
- **CNFIS-FDI 2018 Supporting research excellence and increasing the scientific performance of USAMV Bucharest in the fields of Bioeconomy, Health and Food Security.** CNFIS-FDI-2018-0194. Coordinator USAMV Bucharest. Value: 361,164 lei, 2018.

- Projects coordinator Prof. Ph.D. Gina Fintineru

Projects and partenerships
2015-present

✓**National projects:**

INNOBERRY - *INNOvations in BERRY crops* (2015-2017) financed by UEFISCDI Programme "Young Team" budget 549.700 lei
http://innoberry.usamv.ro/

- *Project coordinator Prof. Ph.D. Adrian Asănică*

BIOXVACCINI - *Natural phenolic systems for dietary lipid protection obtained from shrubs of the genus Vaccinium and their bioaccessibility during the gastrointestinal digestion*, financed by UEFISCDI Programme "PostDoc" budget 250.000 lei (55.555 euro), (02.05.2018 – 30.05.2021)
http://www.usamv.ro/index.php/ro/697-bioxvaccini

- *Project manager Ph.D. Oana Bujor-Nenita*

Projects and partenerships
2015-present

✓**National projects financed by the Ministry of Agriculture and Rural Development:**

- **ADER 1.4.4 Identification, evaluation, testing, development and validation the methods for analysis of nutrients and contaminants from inputs used in organic agriculture (2018-2022) financed by MADR Program "Sectoral Plan", 1.300.000 lei**
  http://www.usamv.ro/index.php/ro/849-ader-1-4-4
  - *Project coordinator Assoc.Prof. Ph.D. Roxana Madjar*

- **ADER 7.2.6. Researches on genetic variation of some vegetable and fruit species, analyzed by NGS, in order to genotype them and to obtain a database of genetic variations specific to native species (2018-2022) financed by MADR Program "Sectoral Plan", 1.500.000 lei**
  http://www.usamv.ro/index.php/ro/850-ader-7-2-6
  - *Project coordinator . Ph.D. Amalia Udriste*

Projects and partenerships
2015-2021

✓**Partnerships with companies:**

Innovation Checks financed by by UEFISCDI Programme "Cecuri de inovare":

1) **Beneficiary Cosrat Impex SRL** - ***Testing and improvement of a low cost and highly efficient Sustainable Vertical Horticulture System - 2017***

- Project manager Ph.D. Ovidiu Jerca

2) **Beneficiary SC Natura SRL** - ***The recycling of vineyard wastes through biotechnology of edible mushroom growth to get food products and organic agricultural fertilizers - 2017***

- Project manager Prof. Ph.D. Răzvan Teodorescu

Projects and partenerships
2015-present

✓**Partnerships with companies:**

Projects financed by Privat Companies and Universities:

1) DonauSaat 2017 - *Project coordinator Ph.D. Ovidiu Jerca*

2) Carpathia 2017 - *Project coordinator Ph.D. Carmen Manole*

3) DonauSAATEN 2018 - *Project coordinator Prof. Ph.D. Mihaela Georgescu*

4) University of Bacău 2018 - 2019 ***Determination of pharmaceutical products and pesticides from water samples by HPLC method*** **-** *Project coordinator Ph.D. Oana Bujor-Neniţa*

5) ICCF 2016 - *Project coordinator Ph.D. Amalia Udrişte*

Projects and partenerships
2015-present

✓**Mobility projects:**

Financed by UEFISCDI Programme "Human Resources":

1) INRA Avignon, France *Project responsible Ph.D. Oana Bujor-Neniţa*

2) INRA Avignon, France *Project responsiblePh.D. Andreea Stan*

3) University of Agriculture Uppsala, Sweden - *Project responsible Ph.D. Ion Certan*

4) University of Tuscia, Italy - *Project responsible Ph.D. Aurora Dobrin*

5) Plant Breeding and Acclimatization Institute – National Research Institute (IHAR), Laboratory of GMO Control , Poland - *Project responsible Ph.D. Amalia Udrişte*

6) Center for Biodiversity Genomics, University of Guelph, Canada- *Project responsible Ph.D. Roxana Ciceoi*

✓ **ERASMUS projects:**

1) Polytechnic University of Valencia, Spain - *Ph.D. Student Mihaela Zugravu (3 months).*

Ph.D. Thesis related to organic horticulture 2015 -2021

1. Researches regarding the cultivation of edible rose in organic system (2018) – *Ph.D. Ana Butcaru*

2. Identification, monitoring and protection of useful avifauna in horticultural ecosystems (2018) - *Ph.D. Mihai Cosmin*

3. Research on the behavior of some apple trees varieties in an ecological orchard during conversion from conventional system - *Ph. D. student Andreea Bujdei*

4. Pest control through agrohomeopathy in fruit species - *Ph. D. student Ileana Rindasu*

5. Researches on the behavior of some hybrid kiwi genotypes (Actinidia sp.) under the conditions of the Bucharest area - *Ph.D. student Lavinia Iliescu*

6. Research on the behavior of some genotypes of Chinese jujube (Ziziphus jujuba) under the conditions of the Bucharest area - *Ph.D. student Diana Dicianu*

7. Research on fig (*Ficus carica* L.) populations in Romania and Iraq and their multiplication by conventional and *in vitro* methods (2018) – *Ph.D. Holia Ahmad*

Ph.D. Thesis related to Horticulture, Agronomy and Biotechnology 2015 -2021

1. Research on translocation and accumulation of heavy metals from the soil to some crops – *Ph.D. student Andrei Mot*

2. Research on the behavior of halophytic species on saline soils / substrates - *Ph.D. student Mugurasi Constantin*

3. Research on enzymatic parameters for monitoring organic soils quality - *Ph. D. student Mihaela Micuti (Zugravu)*

4. Research on the influence of pre- and post-harvest technologies on the quality of organic fruit and diseases incidence during storage - *Ph. D. student Andrei Petre*

5. Evaluation of the bell peppers germplasm for identification of valuable genotypes - *Ph.D. student Elena Barcanu-Tudor*

6. Research on production of synthetic seeds in horticultural plants using somatic embryos and other types of explants obtained *in vitro* - *Ph.D. student Shallal Hadi Hoobi Shallal*

7. Research on the influence of variety and technological measures on the growth and fruiting of blueberries in the Karditsa-Greece area – *Ph.D. Kotrotsiu Ioannis*

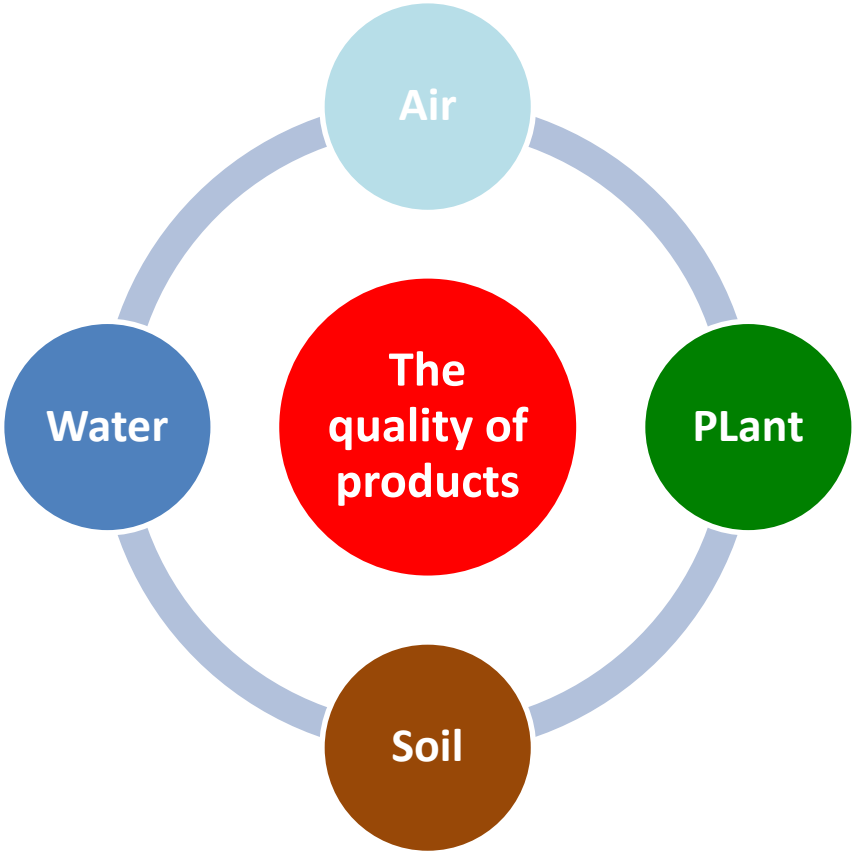
Partenerships
2015-2021

- ✓ **EUFRIN – European Fruit Research Institutes Network**
- ✓ **BOKU Austria**
- ✓ **SINTEF Norway**
- ✓ **INRA France**
- ✓ **University of Kasel Germany**
- ✓ **Hebei Agricultural University, Shanghai Jiao Tong University**
- ✓ **Académie des Sciences Agricoles RPChinese**
- ✓ **Kyungpook University - South Korea**

and, many, many others...

Research services

- pH, TDS
- Minerals analysis
- Contaminants (nitrates, heavy metals, pesticides residues, etc.)



- Phenotypical analysis
- Physiological analysis
- Biochemical analysis
- Molecular analysis

- Pedological analysis
- Minerals and nutrients analysis
- Contaminants (salinity, heavy metals, pesticides residues, etc.)

THE UNIQUENESS TO OUR RESEARCH CENTER
in the area of Romanian agricultural research

- The multidisciplinary approach of the research themes,
- The laboratories endowment with specific, high-tech equipment, instruments, software and other facilities, that ensure the implementation of the proposed themes at European standards,
- The distinctive features of the research greenhouse,
- The development of new research directions in the Romanian agricultural scientific research – the functional analysis inside the Laboratory of molecular plant Physiology,

...create the basis of the integration into the European research area...

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Thank you for your atention!

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