

IN MEMORIAM

ASSOCIATE PROFESSOR DR. ANA ROȘU – A SCIENTIFIC PERSONALITY IN THE FIELD OF PLANT BIOTECHNOLOGY (1943–2024)

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A remarkable personality of scientific research in plant biotechnology, Associate Professor Dr. Ana Roșu was representative for the young researchers and students that she guided throughout her professional career, the starting point of a sinuous road, strewn with obstacles and achievements.

The news of her passing in August of this year has saddened all the collaborators and former students of the Faculty of Biotechnologies, UASVM Bucharest who met and appreciated her as a teacher and mentor. Associate Professor Ana Roșu had a kind and smiling presence, who encouraged you to approach research studies with boldness and perseverance. She noted that the author of a scientific paper written or presented in public sessions is the best authority on the subject and there is no one better qualified to cover the topic.



I met her in 1996, when I was researcher at the Institute of Plant Protection, Bucharest, thanks to Professor Cristian Pomohaci, UASVM, with whom I was working on an oral presentation at the annual symposium of the Horticulture Faculty. In the same year, Associate Professor Dr. Ana Roșu proposed me a collaboration with Dr. Aurelia Brezeanu, coordinator of the Cytobiology and Plant Genetics Department, Institute of Biology, Bucharest, and in addition, she recommended me for admission as a PhD student to Doctoral School from Romanian Academy. Since that moment, the cooperation with Associate Professor Ana Roșu expanded by participation in several research projects.

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Associate Professor Ana Roșu was born in Buzău area, completing all stages of education, middle school and then high school, finalized with the baccalaureate diploma and between 1960–1965 she attended the Faculty of Biology, University of Bucharest. After graduating she worked as a biologist, then as a biology teacher, and later, as a scientific researcher at the Institute of Biological Sciences, Bucharest (1979–1989), where he carried out studies with great impact in the field of plant biotechnology: plant cell differentiation and morphogenesis of species with economic interest: grapevine, oak, willow, poplar, aubergine, garlic, cucumber, watermelon; technology of isolation, fusion and culture of protoplasts; optical and electron microscopy; plants developed technologies for clonal multiplication on a commercial scale and for regeneration of soma-clonal variants.

She carried out her doctoral studies under the guidance of the late Prof. Dr. Ion Anghel, between 1983–1987, elaborating the PhD thesis entitled *Studies on in vitro morphogenesis in plant eukaryotic species with different degrees of ploidy* in the Department of Microorganism Genetics, Faculty of Biology, University of Bucharest. The session for the public defense of the doctoral thesis held on October 24, 1987, after which she obtained the title of PhD in Biology. In 1981, she attended an introductory course in plant cell and tissue culture techniques (2 weeks) at the John Innes Institute, Norwich, UK, which marked the beginning of this type of research in Romania, being a pioneer in this field with Dr. Aurelia Brezeanu. She developed this aspect bringing important novelties in laboratory techniques aimed at *in vitro* plants micropropagation.

The desire for constant improvement and the innovation of the topic of plant cell cultures led her to enrich her professional experience by participating in a series of trainings, among which we mention: specialization in Horticultural Biotechnologies, Gembloux, Belgium (1992–1993) and a Fulbright scholarship on genetic engineering, *in vitro* cultures and biotechnologies, at the University of Illinois, Urbana – Champaign, USA (1993–1994).

Since 1989, being an excellent communicator, along with a solid knowledge of laboratory techniques, she was co-opted as a scientific researcher III in the Faculty of Horticulture, UASVM, as coordinator for scientific research and responsible for the professional training of young researcher. Research activities included *in vitro* embryo-culture techniques; somatic embryogenesis; protoplasts, *in vitro* stress-selection; cloning. This new work involved theoretical lectures and professionally supported laboratory work which was supplemented by the graduation of a practical course on plant genetic transformation carried out at the International Center for Genetics and Biotechnology, New Delhi, India.

The year 1997 provided new challenges and professional expertise for the studies of mycorrhizae symbiotic associations. In this context, I collaborated with Associate Professor Ana Roșu, the mycorrhizal problems being an absolute novelty in Romania, she proposed a collaboration with the Institute of Biology, Bucharest. The mycorrhizal associations represent the theme of my future PhD thesis, to which she brought an important contribution having many interactive

dialogues, advice and experience, sharing laboratory techniques, interpretation of transmission electron microscopy or scanning electron microscopy images. All this knowledge was shared with me, after she graduated a course on mycorrhiza interactions held at the Mircea Center, Ain Shams University, Cairo, Egypt, and this stimulated me to approach synthetically this subject of my future PhD thesis. She offered me support in the achieving of PhD thesis with guidance in the experiment design focused on the modalities of establishing mycorrhiza symbiosis, the mechanisms of initiating mycorrhizal fungal inoculation, and the use of commercial mycorrhizal inocula which she generously offered me. The completion of the doctoral thesis was an emotional meeting, as Associate Professor Ana Roșu was declared official reviewer in the committee for the public defense of the work.

Her further development work continued with research fellowships in TEMPUS programs on new trends in biotechnology university education at several prestigious universities in Europe: Superior Industrial Institute of Gembloux, Belgium; Faculty of Agricultural Sciences, Gembloux, Belgium; Wye College, University of London, U.K.; University of Tras-os-Montes, Vila Real, Portugal; University of Crete, Greece; University of Perugia, Italy.

She actively participated by drafting many memorandums to the Ministry of Education, at that time, for the establishment of a new faculty, the Faculty of Biotechnologies, within UASVM Bucharest, being the founder of the biotechnology school. Due to her prodigious activity, she was tenured lecturer in the Department of Agricultural Biotechnology where she was teaching several disciplines: Cell Crop Technology; Plant Breeding by Biotechnological Methods; Biotechnologies in Vegetable and Flower Growing; Modern Applications of Biotechnologies in Agriculture. She was also scientific coordinator of some projects within the Center for Microbial Biotechnologies, Faculty of Biotechnologies, UASVM, Bucharest.

She was a member of numerous professional associations such as: National Society of Cell Biology; Romanian Association of Plant Crops and Tissues; International Association of Plant Biotechnology; European Society for New Methods in Agricultural Research; European Federation of Biological Societies, Association of Friends of the Roses in Romania, International Society of Horticultural Sciences.

Mrs. Associate Professor Ana Roșu published books in prestigious publishing houses, such as Technical Publishing House (three books) or publishing houses recognized by the Ministry of Education, an impressive number of articles (over 125 scientific articles) in journals with impact factor or accredited by CNCSIS, presented scientific papers at national and international events, participated as director or executive member in many important research projects.

This scientific work has been complemented by mentoring, guiding with professionalism undergraduate or graduate students/graduates of the Faculty of Biotechnologies, UASVM or researchers from the Institute of Biology, Bucharest, Romanian Academy, colleagues from the Plant and Animal Cytobiology Department.

She was the promoter of the ESNA – European society for new methods in Agricultural research and the scientific secretary for Romania, organizing the congress of the association in Buşteni, at international standards.

Along her life, she was confronted with many attempts and challenges, being considered a conqueror. She accepted all of them smiling, without regrets, her personal qualities, persevering work and tenacity to achieve scientific goals propelling her in the elite scientific world. She was appreciated and esteemed by students and colleagues alike, and remains a model of professional dedication for present and future generations. Her fluent and elaborate scientific discourse, her thorough knowledge of the English language, often being a guide for University guests from abroad, have recommended her as a scientist of dialog, a rigorous teacher in all her endeavors.

I remember with pleasure the anniversaries of her birthdays or name days, when her collaborators honored her with respect and gratitude, when her office and the work tables in the laboratory were full of flower bouquets. For each collaborator she had a good word, an advice and encouragement.

The sadness of her passing is hard to express, words are too poor to convey the sorrow of this loss for all of us, her collaborators and the scientific world, a good soul has left us to enter in the eternal world beyond life.

God rest her soul!