

## Prof. Dr. Rayna Dilkova at 90<sup>th</sup> years old



Prof. Dr. Rayna Dilkova is a Bulgarian soil scientist and a long-term leader of the Bulgarian Soil Science Society. Rayna Dilkova was born on December 20<sup>th</sup>, 1930, in Sofia. She graduated from the faculty of Agronomy at the Higher Institute of Agriculture in Sofia. Prof. Dr. Dilkova has spent her career at the Department of Soil Physics at the Institute of Soil Science “Nikola Poushkarov”, where she worked from 1949 until 1999.

Rayna Dilkova defended her PhD thesis in 1971 on “Soil aeration regime of leached smolnitza and leached cinnamonic forest soil and possibilities for its improvement by artificial structuring”. She was habilitated as a Professor of Soil Science in 1986 after a habilitation thesis on “Structure and aeration of the main Bulgarian soil units”.

Her long-term research activity includes outstanding work on important problems in agriculture, melioration, and ecology, in which she examined the natural, intrinsically genetic physical, hydraulic, and mechanical properties of soils in Bulgaria and their change as a result of anthropogenic activity. Prof. Dilkova is a lead author for some of the new methods for soil compaction prevention and improvement of soil quality. The scientific advantages of implementation of those methods in practice were acknowledged by a copyright certificate (1987).

Prof. Dr. Dilkova is author of new quantitative criteria for scientific investigations that objectively measure and assess: a) water stability of aggregates and soil structure; b) decreased productivity of the main agricultural crops due to difficult aeration in compacted soil root zones and seasonal soil waterlogging. For the latter, Prof. Dr. Dilkova defined critical thresholds for water and air-filled pores restricting the oxygen root supply. By applying common methodology for determination and evaluation of physical soil properties under non-cultivated and cultivated conditions, Prof. Dr. Dilkova assessed the susceptibility and degree of the anthropogenic physical deterioration of Bulgarian soils. The latter was her major national contribution to the “Global assessment of soil degradation (GLASOD)” project (ISRIC-UNEP-ISSS-FAO) for the preparation of the World Map of Human-induced Soil Degradation (1990).

Prof. Dr. Dilkova has published 113 scientific papers and research reports. Her monograph “Structure, physical properties, and aeration of Bulgarian soils”, published in

2014, presents the most complete database and assessment of the soil physical properties of the main virgin and cultivated soils in Bulgaria.

Prof. Dr. Dilkova was a long-term member and acting secretary (1997-2004) of the Scientific Council for Soil Science, Agrochemistry, and General Agriculture, at the Higher Attestation Commission in Bulgaria. She has participated in many national and international soil science forums. Prof. Dr. Dilkova was a lecturer at the Center for Qualification of Agronomists and at the Higher Institute of Agriculture and an advisor of national and international PhD candidates. Prof. Dr. Dilkova has also been a referee for many PhD and habilitation theses.

During the period of 1980-2013, Prof. Dr. Rayna Dilkova was the secretary, vice-president and president of the Bulgarian Soil Science Society. She significantly contributed to the successful organization of many national soil science conferences in which international scientists were also invited to participate. She is member of IUSS and the European Confederation of Soil Science Societies.

## Happy Anniversary Prof. Dilkova

*Prof. Metodi Teoharov*  
*President of Bulgarian Soil Science Society*