

*IN MEMORIAM*  
**DANGUOLĖ IRINA RAKLEVIČIENĖ**  
(1951–2013)

Danguolė Irina Raklevičienė (Bendoraitytė), a prominent researcher of plant physiology and space botany passed away suddenly on 26 April 2013 in Vilnius after a prolong fight against severe illness, at the age of 61.

Dr Danguolė Raklevičienė, a senior researcher and a chief of the Laboratory of Experimental plant ecology of the Institute of Botany of the Nature Research Centre was an expert in plant physiology and morphogenesis, specialized in space botany. She worked at the Institute of Botany almost the entire period of her scientific carrier – was profound researcher and responsible scientific administrator.

Danguolė Raklevičienė was born on 5 October 1951 in Kaišiadorys. She studied at Vilnius University, the Faculty of Natural Sciences and received a diploma of biologist and chemist (biophysicist) in 1974. In the same year, she began her scientific carrier as postgraduate student at the Laboratory of Plant Mutagenesis of the Institute of Botany and continued at the Institute of Common Genetics (SSSR, Moscow). D. Raklevičienė was conferred a degree of Doctor of biomedical sciences in 1979 for the thesis *Influence of gamma-rays and etilenimine on barley mitotic cycle and structural mutations of chromosomes*. After the work as a senior laboratory assistant at the Laboratory of Plant Mutagenesis, D. Raklevičienė started her scientific activity in space botany at the Laboratory of Plant Physiology as a junior researcher in 1980–1981, and since 1984 – as a senior researcher at the Sector of Gravitational Physiology of the same laboratory. In 1984–1999 she participated in agreements of mutual activities with the Institute of Space Research (Moscow, SSSR) and the Institute of Botany (Bonn University, Germany). Using different experimental models *in vivo* and *in vitro*, D. Raklevičienė ascertained a range of important growth responses of plants to real microgravity conditions in space and simulated on the ground. At that time, Danguolė's



findings were especially substantial for understanding of plant growth and development in altered gravity environment.

In 2000, D. Raklevičienė took a leadership of the Sector (it was named the Laboratory of Experimental Plant Ecology in 2010) and headed up it till the last day of her life. Under her leadership, the Laboratory's core research mission was to investigate mechanisms underlying the cellular, physiological and developmental responses of plants to the absence and/or altered gravity and to develop the mode for optimization of plant growth and sustaining of high production rates by light of different spectral quality

in microgravity environment. During the last decade, D. Raklevičienė was concentrated on the study of plant leaf responses (gravitropisms, phototropisms, growth, photosynthesis) to light signals composed from monochromatic spectrum components (ultraviolet-A, blue, red and far-red light) and the alterations of the gravity force modelled by a centrifuge-clinostat and horizontal clinostat. Raklevičienė's data supplement a conception of ecological functions of tropisms; highlight the relationships between tropisms and effects of light, and gravity. Besides, she initiated and led a series of research projects carried out on the initiative of scientists, participated in Joint Activities (Partnership) Agreement with different scientific institutions for implementation of research projects in the frame of National programmes commissioned by Research Council of Lithuania and Lithuanian State Science and Studies Foundation. D. Raklevičienė summarized research data in more than 100 scientific publications, participated regularly at the international and national conferences.

Danguolė Raklevičienė also showed a successful educational activity. She was repeatedly a scientific supervisor and advisor of doctoral dissertations, scientific opponent and a member of the Defence Council of doctoral dissertations. She lectured on plant physiology and morphogenesis, was the supervisor of Bachelor and Master Students.

In addition to research interests, D. Raklevičienė was involved in a scientific administrative activity. She directed the Scientific Council of the Institute of Botany for several last years of its autonomy, headed the Institute of Botany during a painful 2010–2012 period of its integration into the Nature Research Centre, was elected to the Scientific Council of Nature Research Centre and worked as its member till the last day.

Those of us who were fortunate to know D. Raklevičienė personally will always remember her calm manner in dealing with anything, whether a confusing question of science administration or that of private relations between colleagues. Danguolė was warm, kind and generous person to everybody who had work and rest collectively. She left behind a huge gap in Lithuanian gravitational physiology studies and undying memory of her colleagues and friends.

### Selected publications of Danguolė Raklevičienė

- RAKLEVIČIENĖ D., LOSINSKA R., ŠVEGŽDIENĖ D., 2011: Clinorotation effect on response of cress leaves to red and far-red light. – *Microgravity Science and Technology*, 23(2): 227–233.
- ŠVEGŽDIENĖ D., KORYZNIENĖ D., RAKLEVIČIENĖ D., 2011: Comparison study of gravity-dependent displacement of amyloplasts in statocytes of cress roots and hypocotyls. – *Microgravity Science and Technology*, 23(2): 235–241.
- RAKLEVIČIENĖ D., ŠVEGŽDIENĖ D., 2009: Temperature-dependent effects of UV-B radiation on leaves of garden cress seedlings. *Acta Physiologiae Plantarum*, 31(Supl.1): S107–S108.
- RAKLEVIČIENĖ D., ŠVEGŽDIENĖ D., LOSINSKA R., 2008: Light spectrum related responses of 1-g and clinorotated cress. – *Journal of Gravitational Physiology*, 15(1): 177–178.
- GAINA V., ŠVEGŽDIENĖ D., RAKLEVIČIENĖ D., KORYZNIENĖ D., STANEVIČIENĖ R., LAURINAVIČIUS R., 2003: Kinetics of amyloplast movement in cress root statocytes under different gravitational loads. – *Advances in Space Research*, 31(10): 2275–2281.
- LAURINAVIČIUS R., ŠVEGŽDIENĖ D., RAKLEVIČIENĖ D., KENSTAVIČIENĖ P., 2001: Ontogeny of plants under various gravity conditions. – *Advances in Space Research*, 28(4): 601–606.
- RAKLEVIČIENĖ D., ŠAULIENĖ I., 2001: Morphogenetic competence of tobacco and asparagus *in vitro* related to phytohormonal treatment and lighting conditions. – *Proceedings of Latvian Academy of Sciences, Section B*, 55(5/6): 225–260.
- MERKYS A.J., LAURINAVIČIUS R.S., ŠVEGŽDIENĖ D.V., RAKLEVIČIENĖ D.P., JAROŠIUS A.V., RUPAINIENĖ O.J., 1989: Evaluation of experiments involving the study of plant orientation and growth under different gravitational conditions. – *Advances in Space Research*, 6(12): 71–80.
- MERKYS A., LAURINAVIČIUS R., BENDORAITYTĖ (RAKLEVIČIENĖ) D., ŠVEGŽDIENĖ D., RUPAINIENĖ O., 1986: Interaction of growth-determining systems with gravity. – *Advances in Space Research*, 6(12): 71–80.
- MERKYS A.J., LAURINAVIČIUS R.S., RUPAINIENĖ, O.J., SAVIČIENĖ E.K., JAROŠIUS A.V., ŠVEGŽDIENĖ D., BENDORAITYTĖ (RAKLEVIČIENĖ) D.P., 1983: The state of gravity sensors and peculiarities of plant

- growth during different gravitational loads. – *Advances in Space Research*, 3(9): 211–219.
- RAKLEVIČIENĖ D., ŠVEGŽDIENĖ D., LOSINSKA R., 2009: Gravity and light spectrum related effects on tropistic and morphogenetic responses of garden cress leaves. – *Botanica Lithuanica*, 15(3): 181–187.
- RAKLEVIČIENĖ D., ŠVEGŽDIENĖ D., LOSINSKA R., 2008: Photomorphogenic responses of garden cress to light in altered gravity. – *Sodininkystė ir daržininkystė. Mokslo darbai*, 27(2): 65–74.
- RAKLEVIČIENĖ D., ŠVEGŽDIENĖ D., 2004: Changes in morphogenesis of cucumber *Kauniai* regenerated *in vitro* under altered gravity. – *Sodininkystė ir daržininkystė*, 23(2): 113–124.
- RAKLEVIČIENĖ D., ŠVEGŽDIENĖ D., LOSINSKA R., STANEVIČIENĖ R., 2007: Integrated effects of ultraviolet-B, temperature and carbon dioxide on cress growth. *Acta Physiologiae Plantarum*, 29 (Supl.1): S98.
- RAKLEVIČIENĖ D., ŠVEGŽDIENĖ D., STANEVIČIENĖ R., LOSINSKA R., 2007: Effects of illumination on the growth and histogeny of garden cress seedlings under altered gravity. – *Biologija*, 53(2): 55–58.
- RAKLEVIČIENĖ D., ŠVEGŽDIENĖ D., LOSINSKA R., 2007: Influence of blue and red light on growth of *Lepidium sativum* and root gravisensors under simulated weightlessness. – *Botanica Lithuanica*, 13(2): 123–129.
- RAKLEVIČIENĖ D., ŠVEGŽDIENĖ D., LOSINSKA R., STANEVIČIENĖ R., 2006: Ultravioleto-B spinduliuotės ir ozono kompleksinis poveikis sėjamosios pipirnės augimui ir morfogenezei. – *Sodininkystė ir daržininkystė. Mokslo darbai*, 25(2): 61–73.
- RAKLEVIČIENĖ D., ŠVEGŽDIENĖ D., KORYZNIENĖ D., 2006: Ultravioleto-B spinduliuotės poveikis sėjamosios pipirnės lapų genezei. – *Sodininkystė ir daržininkystė*, 25(2): 190–200.
- ŠAULIENĖ I., RAKLEVIČIENĖ D., 2002: The influence of cytokinin on morphogenetic competence in non- or blooming *Nicotiana* thin layer and leaf tissue cultures. – *Biologija*, 1: 87–90.
- ŠAULIENĖ I., RAKLEVIČIENĖ D., 2003: Fotoperiodo įtaka žiedų regeneracijai *Nicotiana* žiedkočių audiniuose. – *Botanica Lithuanica*, 9(3): 235–242.
- ŠAULIENĖ I., RAKLEVIČIENĖ D., 2004: The effect of the photoperiod and phytohormonal impact on organ regeneration *in vitro*. – *Sodininkystė ir daržininkystė*, 23(2): 55–64.
- RAKLEVIČIENĖ D., ŠVEGŽDIENĖ D., RANČELIENĖ V., STANEVIČIENĖ R., KORYZNIENĖ D., 2002: Agurkų *Kauniai* ir *Trakų pagerintieji* somatinė embriogenezė *in vitro* – *Sodininkystė ir daržininkystė*, 21(4): 139–148.
- RAKLEVIČIENĖ D., ŠAULIENĖ I., 2002: The dependence of floral and embryogenic response of *Nicotiana* tissues *in vitro* on phytohormonal impact and photoperiod. – *Biologija*, 1: 69–71.
- RAKLEVIČIENĖ D., KNEŽIENĖ J., ŠAULIENĖ I., 2000: Modification possibilities of somatic embryogenesis with phytohormones in tissue cultures. – *Sodininkystė ir daržininkystė. Mokslo darbai*, 19(3): 390–400.
- ŠAULIENĖ I., RAKLEVIČIENĖ D., 2000: Influence of native auxin and its physiological analogues on regeneration processes in thin layer tissue cultures of tobacco *Nicotiana tabacum* L. – *Sodininkystė ir daržininkystė. Mokslo darbai*, 19(3)-1: 409–418.

Danguolė Švegždienė  
Nature Research Centre, Institute of Botany,  
Žalioji Ežerų str. 49, LT-08406 Vilnius,  
Lithuania