



Prof Dr Sc Tomislav Lovrić, *professor emeritus*
(10 December 1925 – 2 March 2020)

When we think about the life and work of Tomislav Lovrić, *professor emeritus*, we reminisce about the man who touched our lives in many ways. In fact, we respect him and recognize in our own way, although we may have met him at different times of his rich life.

Dr Sc Tomislav Lovrić was born on 10 December 1925 in Baška on the island of Krk (Croatia). He attended elementary school in Crikvenica and Baška, and high school in Zagreb, Šibenik, Krk and Sušak (Rijeka). He graduated from the Faculty of Agriculture and Forestry in 1952 and from the Faculty of Technology (Food Department) in 1959 at the University of Zagreb, where he received his doctorate in 1964. From 1952 to 1957 he worked in the food industry ('Mirna' and 'Packaging Factory' both in Rijeka, 'Bodulka', a tomato processing plant in Baška), and then at the Faculty of Technology, later changing name to the Faculty of Food Technology and Biotechnology, in Zagreb, where he held various positions.

He was appointed assistant professor at the Faculty of Technology in 1957. After the introduction of the course 'Technology of Fruits and Vegetables', he became full-time lecturer of that course in 1960. In 1964 he was appointed senior lecturer of the same course. On two occasions (academic years 1961/62 and 1965/1966), he attended the training offered by the 'Stazione Sperimentale per Industria delle Conserve Alimentari' in Parma (Italy), where he stayed in 1961/62 and completed most of his doctoral dissertation, while in 1965 he began research on the lyophilization of food products.

In March 1966, he was elected associate professor of the course 'Technology of Fruits and Vegetables' at the Faculty of Technology, Zagreb, and re-elected in July 1971. On 25 May 1972, he was elected full professor. In 1972 he was elected Vice-Rector of the University of Zagreb, to which position he was re-elected for another mandate in 1974.

In the 1973/74 academic year, he started teaching at the newly founded Department of Food Technology of the Faculty of Agriculture in Osijek. He had taught at postgraduate studies in Food Technology at the Faculty of Technology, Zagreb, from 1970 on the courses 'Selected Chapters in Food Science' and 'Selected Chapters in Food Engineering'. Since the 1977/78 academic year, he was entrusted with part of the course 'Basic Processes of the Food Industry' at the Faculty of Technology in Zagreb, and of the course 'General Food Technology' at the Faculty of Food Technology in Osijek.

On the basis of an agreement between the Faculty of Technology in Zagreb and the Faculty of Food Technology in Osijek, he temporarily established a working relationship with the Faculty of Food Technology in Osijek, where he was Dean from 23 October 1976 to 31 September 1979.

In 1980 he was elected full professor of the course 'Processes in the Food Industry with the Basics of Food Engineering' and 'Food Engineering' at the Faculty of Technology in Zagreb. At the same time, he was entrusted with teaching the same courses at the Faculty of Food Technology in Osijek.

Professor Tomislav Lovrić taught several undergraduate and postgraduate courses at faculties in Ljubljana, Slovenia and Tuzla, Bosnia and Herzegovina. In addition, he taught courses 'Design of Food Processes' and 'Food Preparation Processes' at the undergraduate study, and the course 'Product Development and Processes of the Food Industry' at the postgraduate study at Faculty of Food Technology and Biotechnology in Zagreb and Faculty of Food Technology in Osijek. He was a mentor in the preparation of a large number of bachelors' theses, over 20 masters' theses and 18 dissertations.

After the establishment of the Faculty of Food Technology and Biotechnology in Zagreb (by separating the Biotechnology Department from the Faculty of Technology), in 1980, he was elected Dean of the Faculty of Food Technology (until 31 September 1984). He was subsequently appointed director of the Food and Biotechnology Institute, the position he held until 1989.

Professor Tomislav Lovrić was a member of the Project Council for Agriculture, Food Industry and Forestry, Planning Commission for Scientific Work IV, Coordinator of the 'Food Technology and Biotechnology' project, a member of the 'Program Council for Directed Education in the Field of Agriculture and Nutrition' and a member of the Program Council of the Program 'Food' and project coordinator of the project 'Food Technology'.

From the constitution of the Board for election to scientific and education titles, he was a member of the Commission for the field of agronomy, forestry and biotechnology until 1999.

Professor Tomislav Lovrić was one of the organizers of many scientific and professional meetings. He was chairman of the Organizing Committee of the 5th Meeting and of the 1st and 2nd Congress of Food Technologists, Biotechnologists and Nutritionists of Croatia.

He was one of the first members of the Editorial Board, and after his retirement of the Advisory Board, of 'Food Technology and Biotechnology' and an editorial board member of many other national and international journals.

Following his retirement in October 1996, professor Lovrić continued his post as Head of the post-graduate study in Food Technology at the Faculty of Food Technology and Biotechnology in Zagreb, and took part in several courses at the faculties in Zagreb, Tuzla and Osijek.

In 1998, PhD Tomislav Lovrić was elected *professor emeritus* of the University of Zagreb.

Professor Tomislav Lovrić's scientific research work was closely related to his professional work, and largely focused on solving some of the key process problems of interest to the food industry, especially fruit and vegetable processing and the production of the so-called prepared, semi-prepared and easily prepared foods ('convenience food'). His work can be divided into several areas: the development of the canning process, especially modern dehydration processes, such as freeze-drying (lyophilization), foam drying, sterilization, concentration, freezing and membrane processes; study of the stability of canned foods, predominantly dehydrated products, depending on the composition of the atmosphere and temperature, the sorption properties of water, and products preserved by freezing; study of the mechanisms of colour degradation in fruit and vegetable products from the aspect of degradation of specific plant pigments (anthocyanins, carotenoids, chlorophylls, betaine) and the appearance of so-called enzymatic and non-enzymatic browning in these products and wines; study of the phenomenon of retention and/or loss of flavouring substances in fruit and vegetable products during technological processes and storage; study of thermophysical properties of food and phase transition at low temperatures; study of chemical reactions relevant to colour and aroma in wine production processes; study of rheological properties and use of hydrocolloids in various food products; and application of 'mild' or so-called minimal processes to extend the shelf life of food products.

The expertise of Professor Tomislav Lovrić was diverse and appropriate to the profile of a recognized and one of the leading technologists in the field of food technology. It covers project activities related to all phases of investment construction of plants (processing facilities), primarily in the fruit and vegetable processing industry, production of semi-prepared and prepared food and construction of food processing equipment. Under his leadership, many projects were implemented in the country and abroad, and he worked with teams of young professionals on a continuous basis. In this category of works, the modern technological achievements were applied, which required a high degree of knowledge of the theory and practice in the processes of the food industry and food process engineering. He was a project leader of more than 50 major projects, investment programs and studies.

Professor Lovrić's professional expertise was evident through many years of cooperation with many design organizations and process equipment manufacturers (such as 'Jedinstvo', Zagreb, once a successful and well-known factory in the world of process equipment industry) in the food industry and packaging manufacturers for the needs of the food industry. He had repeatedly visited Italy, Algeria, Germany, Denmark, Sweden and Venezuela to design and build plants for processing fruits, vegetables and prepared foods (e.g. Vardar, Vitaminka from Banja Luka, PIK Vinkovci, fruit processing factory in Irig, Vojvodina, etc). Professor Lovrić was a very capable manager and chief designer who would lead a whole team of specialized experts (e.g. mechanical and electrical engineers, economists and food technologists) and integrated their tasks, approaches and results in line with the overall concept of the projects.

In addition to projects, he also acted as a reviewer and expert for various institutions (ministries, chambers of commerce, banks, courts, etc.) and working organizations.

He wrote over 100 original scientific papers and over 50 professional papers with his associates and colleagues, two books, many book chapters and monographs, a student's manual and many projects, feasibility studies and device designs.

Memberships of esteemed organisations include: Croatian Academy of Engineering; Scientific Council for Agriculture and Forestry of Croatian Academy of Sciences and Arts (HAZU); Agricultural Products Processing Section; Croatian Society of Food Technologists, Biotechnologists and Nutritionists; Institute of Food Technologists (IFT, Chicago, IL, USA); and fellow of IAFOST (International Academy of Food Science and Technology, USA, 2009).

Through his life, professor Lovrić had earned great merit for introducing, disseminating and promoting food science and food technology in the Republic of Croatia. His awards include: National/State Science Award Nikola Tesla in 1982; Certificate of Appreciation, USDA, USA; USDA Scientific Recognition Award for the project 'Freezing and handling of pelletized foodstuffs' in 1988; Award for Scientific Achievement with the Image of Ruđer Bošković in 1995; Podravka – 'Gold badge and golden rooster' for many years of cooperation, HAZU Award (Biotechnical Sciences, 1996); acknowledgments for work in higher education at the Universities of Zagreb, Osijek (2001) and Ljubljana, National/State Annual Award for Lifetime Achievement (Biotechnical Sciences) in 2007; and Croatian Chamber of Commerce: Golden Kuna in 2007.

Professor Lovrić spent 44 years of service until retirement, and 13 years in post-retirement employment, a total of 57 years of work in industry, higher education and science.

It is difficult to compare Tomislav Lovrić, *professor emeritus*, to anyone before him, because before him there was no food technology profession in the region in the 1960s, when he paved the way for all his students and future associates at the faculties/departments where he worked as a professor and prominent expert in the processing food industry in Croatia and in the world.

And last but not least, professor Lovrić was a great fan of classical music (he had completed three years of music academy), and a sports enthusiast (he was the long-time president of Mladost, an academic sports society from Zagreb), a man of wide knowledge, one might say an ordinary and approachable man and a great friend.

We say goodbye to an excellent engineer, educator, researcher, who was with his ideas ahead of his time, a mentor, intellectual and loyal friend that we will not forget.

May God have him in his glory.

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