Preface

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In tribute to 150 years of viticultural research in the Zagreb area, the international conference "Prospects for Viticulture and Enology" took place in Zagreb, Croatia on November 22-24, 2000. The meeting was organized by the Faculty of Agriculture, University of Zagreb, conceived and coordinated by its convener Professor Nikola Mirošević, in association with the International Society for Horticultural Science (ISHS), and under the auspices and support of the Ministry of Agriculture and Forestry and Ministry of Science and Technology of the Republic of Croatia. More than 170 participants from 19 countries and four continents participated in three panel discussions and three scientific sessions (for details please visit http://www.agr.hr/150ve/). The main goals of the conference were to assemble a large number of scientists dealing with viticulture and enology, and to present recent scientific and practical problems and encourage their solution through future scientific projects, especially between developed and transition countries. A further objective was to review recent technological advances in viticulture and enology and evaluate what could be expected in the near future. The conference program was planned to fit these rather wide goals, so the Organizing Committee used its competence to invite very distinguished speakers who gave comprehensive overviews of technological advances in viticulture and enology. In this thematic issue we present the invited (review) papers and several selected additional papers that attracted a lot of attention among the participants. I believe they represent the spirit of the conference very well.

The conference was considered to be very successful and it yielded several conclusions important both to Croatian and international viticulture and enology. In the area of viticulture: (1) More attention has to be paid to increasing grape quality associated with more sustainable technology; (2) A complex management system, ranging from manual operations, training systems, nutrition to genetic-aided solutions, has to be established to reduce the transmission and spread of grapevine diseases and pests; (3) Highly productive viticulture over the last few decades has decreased soil stability and fertility in many viticultural regions. New biological cropping systems that produce economically acceptable results have to be examined; (4) More attention has to be paid in using the potential of native grapevine cultivars. They offer a shift to original quality and region-specific products, but at the same time require urgent action to preserve still-available germplasm; (5) Recent achievements of molecular biology and development of new genetic methods offer great potential for future detection and monitoring of grape

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pathogens, especially phytoplasmas. Molecular markers are seen to be very useful in breeding for quality and disease resistance, and as a useful tool for genotype identification in the production of plant material. Although systems for genetic transformation are already developed in grape and they have enormous potential, so far they are accompanied by negative public perception and environmental risks. More advanced techniques that will ensure more control over the expression of introduced genes must be developed prior to commercial use.

The current contribution of scientific and technological achievements in enology and microbiology of the wine to the modern winemaking is substantial. Wine is a product that has to be distinguishable by its ecology, grape cultivar and winemaking technology. Thus, (1) more sophisticated methods for determining and defining wine authenticity are sought; (2) Consumers' general knowledge (presumption) about applied technology in winemaking might influence wine consumption in the future; (3) Even the modern biotechnological achievements in the wine microbiology are substantial and offer more control in making wines of specific characteristics. It is concluded that they must be applied very prudently, in conjunction with appropriate regulations and consumer education. However, this kind of research is essential and revolutionary for getting new basic knowledge and further progress in winemaking; (4) Due to significant re-composition of the global market and progress that science and technology have already made in enology it will be difficult in the future to find a balance between advanced technology and traditional ways in winemaking. The role of science should be directed to preserve wine authenticity no matter what approach will be used.

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