NEW PERSPECTIVES IN CROATIAN WINE PRODUCTION, ANALYTICS AND EDUCATION

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The Department of Viticulture and Enology, University of Zagreb Faculty of Agriculture, has played a pivotal role in shaping Croatian wine production for over a century through scientific research, education, and innovation. Building upon its experimental station and advanced analytical and sensory laboratories, the Department contributes to the preservation of native grape varieties and the development of modern enological technologies. Current projects such as *CroVitiRestart* focus on revitalizing indigenous cultivars through tailored winemaking technologies [1], while *VitiResist* applies metabolomics and molecular tools for breeding disease-resistant varieties. In education, the *MERGO* Erasmus+ project introduces game-based olfactory learning and tangible user interfaces to modernize wine sensory training. The most recent project applies DOSY-NMR spectroscopy and Deep Reinforcement Learning [2], to create reliable database for wine authenticity, varietal classification, and origin verification. By merging tradition with innovation, Croatian enology strives to enhance wine quality, authenticity, and market value while ensuring sustainability and global learning opportunities.

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REFERENCES

[1] A.-M. Jagatić Korenika, B. Kozina, D. Preiner, I. Tomaz, J. Volarević, A. Jeromel, *Applied sciences* **2023**, 9; 5411, 12.

[2] A.-M. Jagatić Korenika, A. Jeromel, I. Tomaz, T. Jednačak, S. Rončević, I. Nemet, I. Primožič, T. Hrenar, P. Novak, *Food Chem.: X* **2024**, 21, 101162.