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### Questions of Winegrape Irrigation in Hungarian Wine Regions

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Global warming is one of the most important topics for all agricultural sectors, as it brings more and more extreme weather conditions, unpredictable changes in temperature and unequal rainfall distribution. The increasing number of floods, inland waters and droughts may cause serious damages in agricultural production, which, besides the natural and production problems, may also have a ripple effect in economic and social aspects.

The climatic conditions and the water supply and water distribution features of Hungary have caused several problems in the Hungarian agriculture in the past years. These problems could be avoided by the enhancement of the efficiency of water management. Although the irrigation is not general in the Hungarian wine-growing sector, in some wine regions this question should not be ignored.

Our study focuses on the role and the questions of irrigation in different Hungarian wine regions. In our research, we examined the role of irrigation in different wine regions, how the rainfall surpluses affected the sugar content of grapes in irrigated areas.

In our paper, we reviewed the relevant literature sources and collected the international experiences of irrigation in wine growing sector. We collected statistical data for exploring the area and the territorial distribution of irrigated and non-irrigated wine regions. We examined the relations between irrigation and yield increase and between irrigation and the sugar content of grapes and the alcohol content of wine. For data processing and calculations, we used descriptive statistic methods, correlation analyses and ANOVA using SPSS software. We also carried out in-depth interviews by Hungarian grape growers.

Our results may call the attention for the special need for irrigation in some Hungarian wine regions, which may be an important factor for decreasing the fluctuations of yields and quality, and which may be a tool that improves predictability of wine grape production and may help to keep the market position of the producers and wine producing companies.

**Keywords:** irrigation, wine region, yield increasing effect, quality

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