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Identification of physiological and quality aspects by applying different nitrogen forms on grapes

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Nitrogen (N) is the most common soil-borne macronutrient and simultaneously the most limiting factor in grapevines [1]. It plays an important role in many biochemical and physiological processes in the plant. Especially in viticulture, N is an important factor in many fermentative microorganisms that optimizes must composition. The N translocation and its utilization within the plant depends on the applied dose, as well as on the used N form. As a result, nitrogen nutrition has a high potential to affect high-quality components such as secondary metabolites, *e.g.* resveratrol and phenolic compounds, including beneficial substances in the grape and the resulting wine. These metabolites are very important for the vinification process including fermentation and formation of aromatics.

The final aim of this study is to detect the impact of different nitrogen forms such as ammonium, nitrate, urea, glutamine and arginine on yield, N uptake, N use efficiency and metabolites in leaves, berries and finally in the resulting wine. First results indicate a huge impact of rootstocks on N uptake and plant growth besides the given N- form.

Literatur

[1] BELL, S-Y., HENSCHKE, P.A. (2005) Implications of nitrogen nutrition for grapes, fermentation and wine, Au. J. Grape Wine Res. (2005), 11, S. 242-295