

DETERMINATION OF 2-AMINOACETOPHENONE IN RIESLING WINES BY SPME-GC-MS

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The unpleasant odor quality of an off-flavor is mostly caused by only one, sometimes several volatile compounds with very low odor threshold values and the typical unpleasant odor taint of the spoiled food product. 2-aminoacetophenone is an aroma compound which causes the untypical aging off flavor in *Vitis vinifera* white wines.[1] Wines showing this note, described as acacia blossom, naphthalene note, furniture polish, fusel alcohol, damp cloth, have caused a considerable amount of rejection during 1980s in Germany. UTA can be developed in young wines within a few months after the end of fermentation.[2] It can be realized organoleptically in wine at 0.5 to 1.5 $\mu\text{g L}^{-1}$. Tryptophan (Trp) and its metabolites, especially the phytohormone indole-3-acetic acid (IAA) are considered to be potential precursors of 2-aminoacetophenone (2-AAP). Ultrasound assisted headspace solid phase microextraction (UAE-HS-SPME) and direct immersion solid phase microextraction (DI-SPME) coupled with gas chromatography-mass spectrometry (GC-MS) were tested and optimized for determination of 2-aminoacetophenone in Riesling wines fermented by different yeast strains. Divinylbenzen/Caboxen/Polydimethylsiloxane (DVB/CAR/PDMS) 50/30 μm fiber was used. Both methods, DI-SPME and UAE-HS-SPME are quantitative (recoveries in the range 39-63% and 59-83%, respectively) and sensitive (limits of detection were 0,01 $\mu\text{g L}^{-1}$ and 0,03 $\mu\text{g L}^{-1}$, respectively). Ultrasonic assisted headspace SPME showed significantly reduced time of extraction. 2-AAP was detected only in two samples below odour treshold.

References:

[1] Rapp A. et al., *Vitis* 34 (1995) 193.

[2] Hoenicke K. et al., *Anal. Chim. Acta* 458 (2002) 29.