

# Development of measures to prevent wine indispositions

November 7 2012

---



Credit: Institute of Microbiology and Wine Research

Biogenic amines may be one of the factors responsible for symptoms such as headaches, gastro-intestinal disorders, shortness of breath, fall in blood pressure, and even unconsciousness and cardiac arrhythmia in severe cases. Histamine, one of the best known members of this group, can cause serious physical problems. Biogenic amines can be produced in the body by natural metabolic activities but are also ingested in larger quantities with food. They play a special role in microbiologically produced food such as wine, beer, cheese, and sauerkraut. In a joint project Johannes Gutenberg University Mainz (JGU) and the Dienstleistungszentrum Ländlicher Raum Rheinpfalz (DLR) have developed measures to identify and reduce biogenic amines in wine, where they can be of particular risk to human well-being.

The goal of these investigations was to avoid high concentrations of biogenic amines in wine. The corresponding investigations were performed in the Institute of Microbiology and Wine Research at Mainz University and the Dienstleistungszentrum Ländlicher Raum Rhenish Palatinate in Neustadt in a joint project sponsored by the Research Association of the German Food Industry (FEI). "It is important to make efforts in order to reduce biogenic amines in wine, since this problem shall increase in future," predicts Professor Dr. Helmut König of the JGU Institute of Microbiology and Wine Research (IMW). Compared to other microbiologically [processed food](#) such as cheese the concentration of biogenic amines in wine may be low. However, their effect on sensitive human beings may be strongly increased during simultaneous ingestion of wine and other problematic food since alcohol significantly impairs the body's ability to metabolize biogenic amines.

Therefore, Helmut König's team and the enologists of the working group of Ulrich Fischer in Neustadt have developed "Practicable Milestones" in order to enable wine-makers to lower the risk of the production of biogenic amines. There currently is no regulatory requirement regarding the upper limits for biogenic amines in wine. However, in view of the health risks and the need to prevent the development of off-flavors that can be caused by some bacteria, wine-makers shall take measures in respect to cellar and wine producing techniques now. The addressed problems may increase in future as a result of climate change, because higher temperatures will promote the growth of undesirable bacteria on the grapes. It has been shown that the production of biogenic amines will be enhanced due to elevated pH values. An earliness of the ripening period of the grapes may lead to an increase of the pH value of the grape juice.

Preventative and curative measures include the use of tested starter cultures, the early detection of the presence of biogenic amine-forming bacteria by molecular methods and procedures to prevent their growth,

for example the application of flash pasteurization or the removal of biogenic amines with the help of bentonite or yeast cell walls. The most economic preventive measure is to lower the pH value by adding tartaric acid. This is already permitted in the warmer climate zones of the EU and in non-European countries, but German [wine](#)-makers are currently prohibited to apply this measure. However, in the last years an exemption to this regulation was granted.

**More information:** Wigand P., Blettner M., Saloga J., Decker H.: Prevalence of wine intolerance: results of a survey from Mainz, Germany. *Deutsches Ärzteblatt International* 2012; 109(25): 437-44  
[doi:10.3238/arztebl.2012.0437](https://doi.org/10.3238/arztebl.2012.0437)

Provided by Universitaet Mainz

Citation: Development of measures to prevent wine indispositions (2012, November 7) retrieved 24 April 2024 from <https://medicalxpress.com/news/2012-11-wine-indispositions.html>

<p>This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.</p>
--