Czech Journal of FOOD SCIENCES

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Czech J. Food Sci.

Totušek J., Lefnerová D., Kyseláková M.,

Balík J., Veverka J., Tříska J., Vrchotová N.:

Antimutagenic activity of raw materials and by-products by production of grape wines

Czech J. Food Sci., 26 (2008): S55-S59

The inhibition of mutagenicity was assessed by Ames test by bacterial strains *Salmonella typhimurium* TA98 and TA100 using two mutagens and methanolic extracts of healthy fresh berries of blue grapevine varieties – St. Laurent, Portugal, André and white varieties – Chardonnay, Welschriesling, Pinot Gris and berries infected with *Botrytis cinerea* fungus. As model mutagens, two compounds whose presence in food is real, 2-amino-3-methyl-3H-imidazo-(4.5-f-)-quinoline (IQ), arising from certain heat treatments of meat and acting as indirect mutagen after

metabolic activation, and N-nitroso-N-methylurea (MNU) acting as a direct mutagen, were applied. An increased risk of MNU is due to its possible endogenous formation. Fermentation sediment after vinification of the varieties Chardonnay, Welschriesling and André was tested by similar experimental system. All extracts showed strong positive inhibition of mutagenicity, berries infested with Botrytis cinerea also in diluted extracts. Positive inhibition was demonstrated also by fermentation sludge.

Keywords:
wine; grape berries; polyphenolic compounds; antimutagenicity

[fulltext]