Alternative possibilities of wine fining with novel yeast derivates in organic quality

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Introduction

The aim of this work was to compare the adsorption power and the quantitative statement of organic yeast cell walls against a conventional product. The organic product are specially prepared yeast cell walls of organic quality, the other product however, is conventionally produced. We tested three different kinds of substances with negative influence on wine were tested: fatty acids, total phenols and pesticides.

Method

Fatty acids and pesticides were analysed using gas chromatography and mass spectrometry (GC-MS). Total phenolics were determined photometrically using Folin-Ciocalteu.

Results

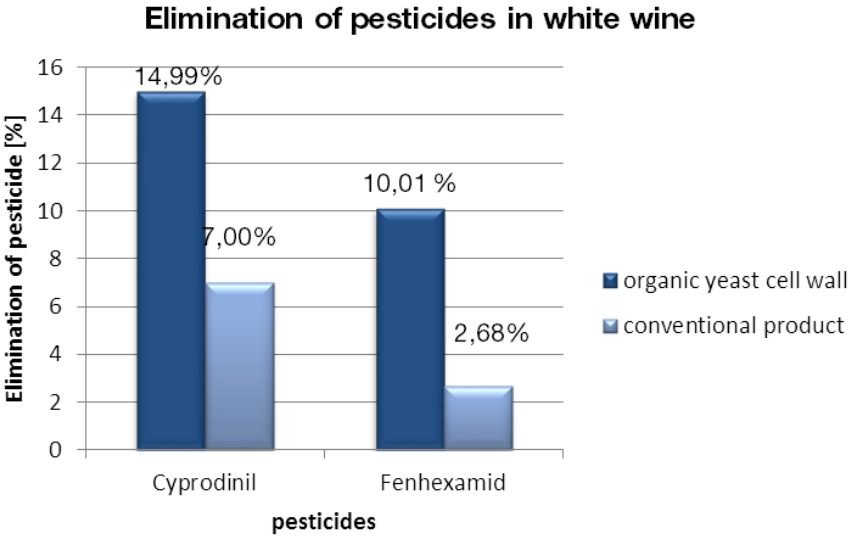

Diagram 1: Elimination of pesticides in white wine

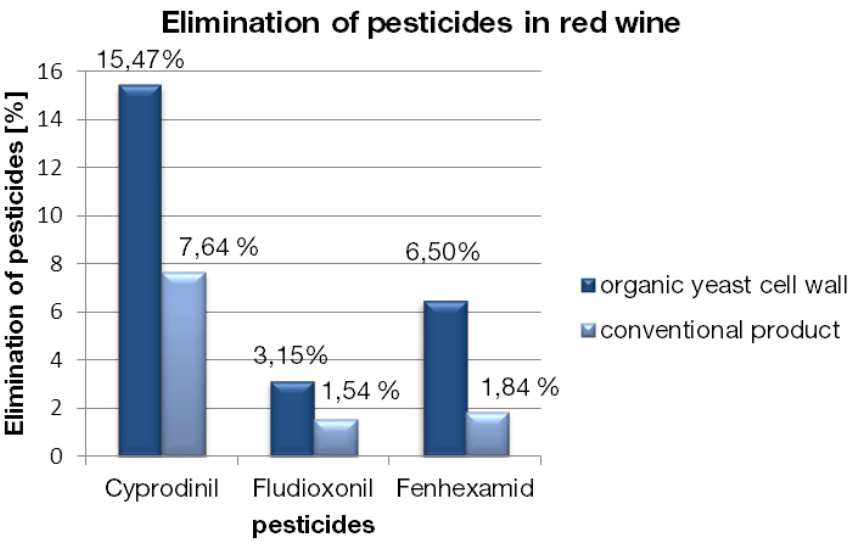

Diagram 2: Elimination of pesticides in red wine

Pesticide reduction of **organic yeast cell walls** (graph 1 and 2**)**: The organic product shows an excellent adsorption power across a range of the pesticides. Significant differences in reduction of the pesticides Fenhexamid (73,2%) and Cyprodinil (53,3%) were shown in white wine treated with **organic yeast cell walls** and the conventional product, respectively. Similar results were obtained for three pesticides in red wine. Adsorption differences were 71,7% (Fenhexamid), 51,1% (Fludioxonil), and 50,6% (Cyprodinil), respectively.

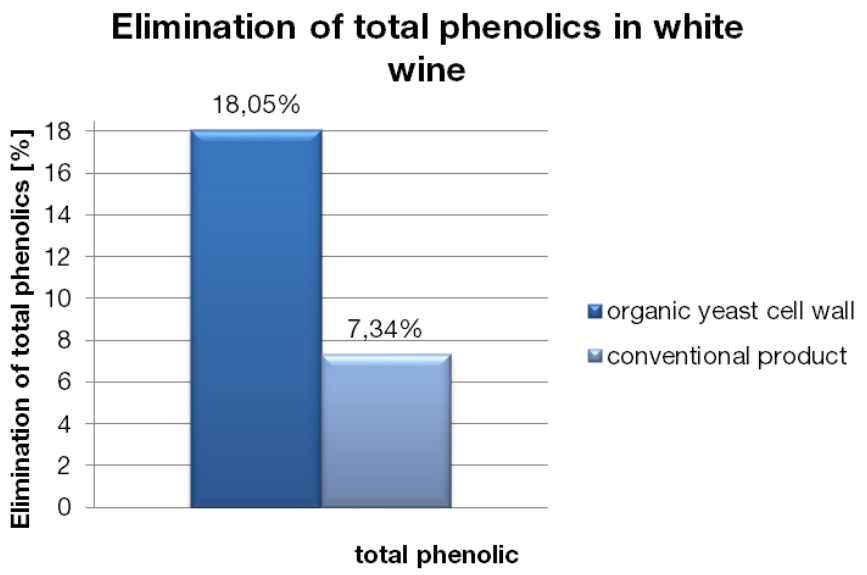

Diagram 3: Elimination of total phenolic white wine

Total phenolics (graph 3): **the organic yeast cell walls** show an adsorption of phenolics that is by 59.33% higher than that of the conventional alternative.

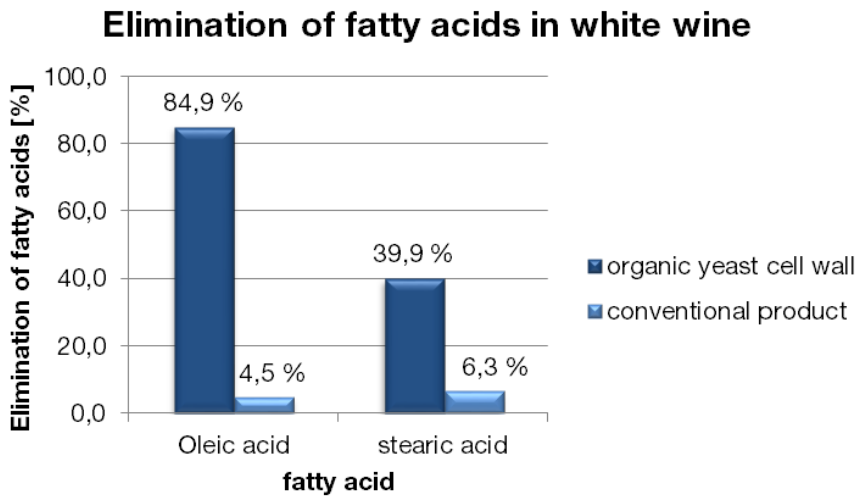

Diagram 4: Elimination of fatty acids white wine

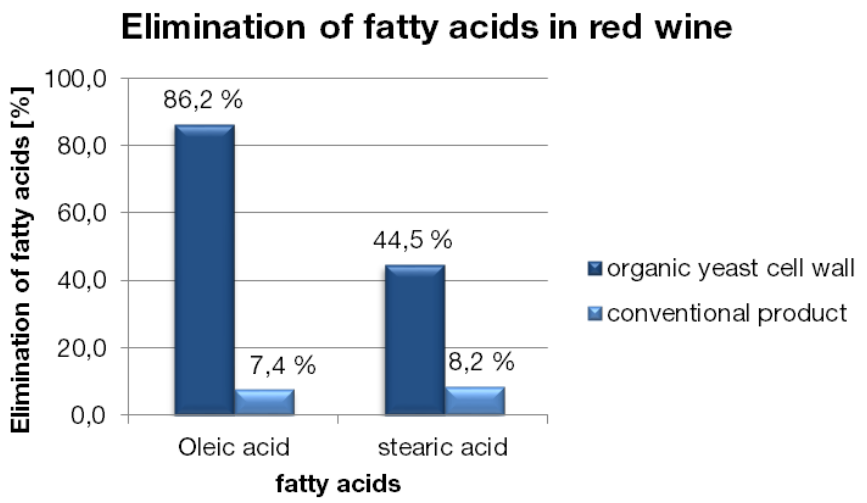

Diagram 5: Elimination of fatty acids in red wine

Reduction of fatty acids: The biggest difference of performance of **organic yeast cell walls** vs. an alternative was shown when analyzing fatty acid reduction in white and red wine. As shown in graphs 4 and 5 the organic yeast cell walls worked equally well for red and white wine. Reduction of oleic acid was almost 95% (94.7% in white wine, 91.5% in red wine) more efficient with **organic yeast cell walls** than with the conventional product, for stearic acid efficiency of reduction was more than 80% higher (84.2% white wine, 81.5% red wine) for **organic yeast cell walls** compared to conventional product.