

ELIMINATING THE PINKING EFFECT IN WINES USING ACTIVATED CHARCOAL

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The use of reducing technologies in the production of white wines, aimed at preserving varietal aromas, fruitiness, and freshness while preventing their oxidation, may have an unexpected impact on their visual appearance - pinking. Although the mechanism of this phenomenon is not yet well understood, it is believed to be caused by the oxidative transformation of certain colorless proanthocyanidins into their respective red-colored cyanidins. Pinking can occur in wines stored in tanks as well as bottled wines. In the pre-bottling stage, pinking can be removed through various methods such as treatment with sorbents, addition of SO₂, etc.

As a sorbent for eliminating the substances responsible for pinking, activated charcoal CA-M30 obtained from peach pits, waste from canning factories, was tested in the Ecology Laboratory of the Institute of Chemistry at the State University of Moldova. The concentrations of proanthocyanidins were determined in over 20 white wines of various varieties produced in different regions of the Republic of Moldova using different techniques. Their content varies widely, ranging from 0.9 mg/l (Sauvignier Gris) to 230.8 mg/l (Alb de Onțcani). The oxidizability does not correlate with the concentration of proanthocyanidins or with the total phenolic content. Neither does the Pinking-test correlate with these parameters. CIELa*b* analysis demonstrated a significant increase in the a* coordinate, an indicator of the red component, in most wines subjected to the test. The anthocyanin content in wines with pinking was also determined, ranging from 0.1 to 2.7 mg/l, with Sauvignon Blanc from the skin maceration variant being the most sensitive to pinking.

Additions of activated carbon CA-M30 completely eliminated pinking, just like additions of PVPP and SO₂. The pigments adsorbed by CA-M30 were recovered in a hydroethanolic solution (10% v/v, pH 3.60) using ultrasonication (20 kHz) and studied spectrophotometrically, including by second-derivative analysis.

The elimination of pinking in wines most susceptible to this effect was efficient when treated with CA-M30 at concentrations of up to 200 mg/l, with concentrations of 80 mg/l being sufficient in most cases.

Keywords: white grapes, must, polyphenol oxidase, browning, activated charcoal

Acknowledgements: The research was funded by State Project 20.80009.7007.21 „Reducing the impact of chemical, toxic substances on the environment and human health through the use of absorbents and catalysts obtained from domestic raw materials” running at the Technical University of Moldova.