

## REDUCTION OF THE IMPACT OF GRAY ROT OF CABERNET-SAUVIGNON AND PINOT GRIS GRAPES ON THE FERMENTING MUST WITH THE HELP OF ACTIVE CARBON AC-C

Iury SCUTARU<sup>1\*</sup>, ORCID: 0000-0002-9199-5183

Aliona SCLIFOS<sup>1</sup>, ORCID: 0000-0002-6070-0936

Vasile ARHIP

<sup>1</sup>Technical University of Moldova, Faculty of Food Technology, Department of Oenology and Chemistry, Chisinau, MD-2045, Republic of Moldova

\*Corresponding author: Scutaru Iury, [iurie.scutaru@enl.utm.md](mailto:iurie.scutaru@enl.utm.md)

Gray rot is a frequent disease in vineyards in our country, which produces the most significant losses in yield and quality in favorable years, with rainy and warm autumns. The disease is caused by the fungus *Botrytis Cinerea*, which attacks all the organs of the vine: leaves, shoots, bunches, berries, as well as vine cuttings placed in stratification. The most frequent attack occurs on grains, whose susceptibility increases as they ripen and accumulate sugars [1;]. *Botrytis Cinerea* is also dangerous because it generates the oxidizing enzyme Laccase.

Gray rot in the 2021 harvest year affected the Pinot Gris variety because it is denser in the grains and juicy, with a thin grain skin, as well as the Cabernet - Sauvignon variety.

In some critical years with rainy autumns, gray rot can affect up to 80-90% of the harvest, it can even completely compromise grape production. However, in years with sunny autumns the given fungus develops its noble form, i.e. noble rot. Thus, the grains become botrytized by cracking the skin of the grain, evaporating the water and accumulating a high amount of sugars. Then we lose in quantity, but gain in quality [1]. Noble rot is of great importance in the production of Cotnari, Tokay wines, etc.

In this article, the impact of the additions of experimental active carbon AC-C on the gray rot of Cabernet-Sauvignon and Pinot Gris grapes in the fermentation must was investigated, using different doses, allowed by the OIV. Fermentation kinetics and some important physico-chemical parameters were monitored. AC-C has been shown to be effective in removing mold and related green pigments from wine. Doses of 1 g/l reduced the content of these pigments by about 58% - a result very close to that demonstrated by the commercialized activated carbon Granucol GE (Germany).

The activated carbon, as a rule, in high concentrations negatively influences the natural aromatic profile of the wine, so it is recommended to use the minimum effective concentrations, calculated strictly based on the experimental results.

**Keywords:** must, wine, AC-C carbons, rot, noble, variety, grapes, organoleptic and physico – chemical parameters

### References:

1. Dumitriu I.C. Viticultura. Editura CERES, București -2008

**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.