

## STORAGE STABILITY, ANTIOXIDANT AND ANTLIPID ACTIVITY OF SEED EXTRACT FROM PINOT NOIR GRAPE<sup>1</sup>

**Assoc. Prof. Yavor Ivanov PhD**

Department Biotechnology, University "Prof. d-r A. Zlatarov"  
Burgas, Bulgaria  
Email: qvor\_burgas@abv.bg

**Abstract:** The seed extract from Pinot Noir grape (GSE) was prepared. Extraction yield (12%) and total phenolic content (111.22 mg GAE/mg DW matter) of GSE was evaluated. The antioxidant capacity of GSE was determined by ABTS and DPPH methods. The effect of storage conditions of GSE on its TPC values has been investigated. It was found that when GSEs kept at 31%, 52% and 71% relative humidity for 60 days at 25 °C, the TPC values decreased from 111.22 to 86.83, to 83.00 and to 62.00 mg GAE/g DW, respectively. For that period TPC value of the sample stored at 4 °C decreased slightly to 109.50 mg GAE/g DW and TPC value of lyophilized sample retained. The lipid oxidation of extracted fats from ground pork without and with added GSE and a synthetic antioxidant (butylated hydroxyl toluene) was studied at 40 °C, 4 °C and -18 °C. It was found that at 4 °C for 48 hours there was no lipid oxidation of the fat samples with added antioxidants (AO), in contrast to the sample without AO. After 48 hours at -18 °C, no lipid oxidation was observed in all samples - without and with added AO.

**Key words:** grape seed extract, storage stability, fat, lipide oxidation

### REFERENCES

Amin, R., Edris, S. (2017) Grape seed extract as natural antioxidant and antibacterial in minced beef. *PSM Biol Res*, 2(2) 89-96.

Di Stefano, V., Buzzanca, C., Melilli, G. M., Indelicato, S., Mauro, M., Vazzana, M., Arizza, V., Lucarini, M., Durazzo, A., Bongiorno D. (2022) Polyphenol Characterization and Antioxidant Activity of Grape Seeds and Skins from Sicily: A Preliminary Study. *Sustainability*, 14, 6702.

Emmulo, E., Ceccantoni, B., Bellincontro, A., Mencarelli, F. (2021) Use of water and ethanol extracts from wine grape seed pomace to prepare an antioxidant toothpaste. *J Sci Food Agric*, 10, 5813–5818.

Guaita, M., Bosso, A. (2019) Polyphenolic characterization of grape, skins and seeds of four Italian red cultivars at harvest and fermentative maceration. *Foods*, 8, 395-418.

Krasteva, D., Ivanov, Y., Chengolova, Z., Godjevargova, T. (2023) Antimicrobial Potential, Antioxidant Activity and Phenolic Content of Grape Seed Extracts from Four Grape Varieties. *Microorganisms*, 11, 395.

Mora-Garrido, A.B., Cejudo-Bastante, M.J., Francisco, J. Heredia, Escudero-Gilete, M.L. (2022) Revalorization of residues from the industrial exhaustion of grape by-products, *LWT-Food Sci Technol*, 156, 113057.

Munekata, P.E.S., Gullón, B., Pateiro, M., Tomasevic, I., Domínguez, R., Lorenzo, J.M. (2020) Natural Antioxidants from Seeds and Their Application in Meat Products. *Antioxidants*, 9, 815.

Rockenbach, I.I., Gonzaga, L.V., Rizelio, V.M., De Souza, A., Gonçalves, A.E.S.S., Genovese, M.I., Fett, R. (2011) Phenolic compounds and antioxidant activity of seed and skin extracts of red grape (*Vitis vinifera* and *Vitis labrusca*) pomace from Brazilian winemaking. *Food Res Int*, 44(4) 897-901.

<sup>1</sup> Reports Awarded with "Best Paper" Crystal Prize - 62th Science Conference of Ruse University, Bulgaria, 2023, as a hard copy (ISBN 978-954-712-826-2) and on-line on the Conference Website