

## PESTICIDE RESIDUES IDENTIFIED IN GRAPE VARIETIES

Georgiana-Diana DUMITRIU GABUR<sup>1</sup>, Carmen TEODOSIU<sup>2</sup>, Iulian GABUR<sup>1</sup>,  
Valeriu V. COTEA<sup>1</sup>

e-mail: diana.gabur@uaiasi.ro

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### Abstract

As the human population continues to grow there is an ever-increasing demand for food production, which means that more and more pesticides will be required to meet these needs. This trend is the same in the winemaking industry with pesticides being used in higher quantities year after year. As pesticides can produce harmful effects on human beings and the environment it is crucial to accurately understand how pesticides travel through the winemaking process. This research sought to monitor the pesticides from two grape varieties. The following six pesticides were analysed: oxathiapiprolin, myclobutanil, iprovalicarb, tebuconazole, chlorantraniliprole, and acetamiprid. Samples were extracted using the QuEChERS (quick, easy, cheap, effective, rugged, and safe) method and analysed for the residues of pesticides by liquid chromatography-tandem mass spectrometry. Results indicated that pesticides content in the grape samples ranged between 0.89 ng/g and 18.92 ng/g for Feteasca neagra grape variety. Similar for Cabernet Sauvignon grape values ranged between 0.66 ng/g and 8.24 ng/g. Overall, the recorded levels of pesticides were significantly below the EU maximum residue levels (MRL's).

**Key words:** pesticide residues, grapes, QuEChERS, LC-MS/MS.