THE INFLUENCE OF ATMOSPHERICAL NOXES EVACUATED BY S.E. CRAIOVA II UPON THE VITICULTURAL AGRO-ECOSYSTEM

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SUMMARY

The study was done in the period of time between 2005-2006 in the bordering area S.E. Craiova II and had as a target the influence of atmospheric pollution substances evacuated in the environment upon the viticultural plantation belonging to SDE Simnic, respectively SO₂, NOₓ, CO, CO₂ and powders. The determinations were done on three types of vineyard: The Royal Feteasca, Merlot and Italian Reisling. As for the chemical substances emissions, 2005 has proved to be an year of fluctuated values, especially in the winter months, the whole value being of 36782 tones in the case of SO₂ emission, the NOₓ and CO₂ emissions are important, respectively 4700 t NOₓ and 2286027 CO₂, the content in powders being of 510 tones/year. In comparison with 2005, in 2006 there can be observed a substantial lowering of all the chemical substances (29992 t SO₂, 3850 t NOₓ, 187556 t CO₂, 304 t powders/year), this diminution being owed to the retechnologization, though without touching the parameters of the imposed norms. There have been determined the values of the photosynthesis intensity at the three types, finding higher values in the case of the Italian Riesling (3,1 µmoli/m²/s) in comparison with Merlot (2,9 µmoli/m²/s) and the Royal Feteasca (2,6 µmoli/m²/s). The intensity of transpiration presents superior values, the medium one being between 5,5-5,7 moli H₂O m²/s, at Merlot type being recorded at 6,8 moli H₂O m²/s, at Reisling 6,4 moli H₂O m²/s and Royal Feteasca 6,5 moli H₂O m²/s. The Merlot type is marked with a higher resistance at the emissions of sulf dioxide and azote and also at the content in solid particles in suspension. Thus, at Merlot sort, this conductibility presents values of 0,2 gs, 0,17 gs at Italian Reisling and at the Royal Feteasca of 0,15 gs. In what concerns the particles in suspension, the conductibility of the stomates lowers under 0,01 gs. Of all the types studied and discussed previously, the Merlot one presents a higher tolerant resistance towards the noxes, being followed by the Italian Reisling and the Royal Feteasca. The chemical substances studied here, together with the climate have influenced, from the physiological-biological point of view, the metabolic processes that happen on the studied plants. The effect of the chemical substances that remain on the leaves is manifested in two ways: on one hand, it acts as a mechanical screen disturbing the photosynthesis, and on the other one, entering the general metabolism of the plant through foliar absorption.

REFERENCES