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The compost from the wine industry as a source of nitrogen in vulnerable areas

Raquel Villena Gordo

UPM, Química y Tecnología de los Alimentos - E.T.S.I.A.A.B, Madrid, Spain (ra.villena@upm.es)

The compost from the wine industry as a source of nitrogen in vulnerable areas

Raquel Villena¹, M. Teresa Castellanos¹, M. Carmen Cartagena^{1,2*}, Ana M. Tarquis² and Augusto Arce^{1,2}.

¹ Departamento de Química y Tecnología de Alimentos. ETSIAAB-UPM. Avda. Puerta de Hierro 4. 28040 Madrid

² CEIGRAM-UPM. Senda del Rey 13. 28040 Madrid

*mariacarmen.cartagena@upm.es

Abstract

The use of organic waste in agriculture, from the agri-food industry, is one of the most important outlets for this type of waste. Once that it is stabilized, it plays an important role in the context of circular economy. The application of this in vulnerable areas, where it is produced, is a possible substitute for traditional fertilization (fertirrigation) avoiding continuous contamination of aquifers.

Spain is the third world producer of wine. This industry generates between two and three million tons of organic waste annually being more than half generated in Castilla - La Mancha. The residues of the wine industry, can be valued in many ways. One of them could be the agricultural application as a source of organic matter and nutrients, given its chemical characteristics. These residues aerobically treated can be used in horticultural crops in the same area, as a source of nitrogen substituting traditional inorganic fertilization.

In this work, a three years' field experiment was carried out in a drip-irrigated melon crop,

traditionally grown in the area where also, these wastes are generated in Mediterranean climatic conditions in Castilla – La Mancha. The area is designated as “vulnerable zone” by the Nitrates Directive (91/676/CEE). The objective was to compare the behavior environmental and nutritional of organic fertilization versus fertirrigation. Due to the slow rate of mineralization of these residues in the soil, it is essential to know their residual effect on it. This effect was studied using wheat as a capture crop.