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PROMOTING ENVIRONMENTAL TECHNOLOGY USING SANITARY TAX: THE CASE OF AGRO-FOOD INDUSTRIAL WASTEWATER IN SPAIN

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Abstract

The discharge of industrial effluents is a growing concern for companies, policy makers and the sanitary water system due to the possible damage to environment. In Spain, wastewater discharge made into the sewer network is regulated locally by the Sanitary Tax (ST). Consequently, for the latter, regulation and cost differences exist. In this paper, the role of Spanish STs to promote environmental protection through the treatment of industrial wastewater (IWW) is analyzed. The study is focused on agro-food industry as example of common industrial effluent. To that effect, the STs in the regions that consider pollution parameters for IWW discharges are studied: Asturias, Aragón, Cantabria, Cataluña, Galicia, La Rioja, Madrid, Murcia, Navarra and Valencia. Pollution parameters are examined and a sensitivity analysis of the ST with regard to the chemical oxygen demand (COD), nitrogen and phosphorus concentrations is carried out. Results show that COD is the pollution parameter which has the greatest effect on the ST and the cost to be paid depends highly on the IWW. Therefore, the ST is applied to five Mediterranean agro-food IWW models and a comparison of the resulting tax amount with treatment costs is made in order to determine if in situ wastewater treatment would be environmental and economically recommended. It was also concluded that there is no relationship between the treatment cost, the significance of pollution parameters given by each ST equation and the environmental benefit due to pollution removal.

Key words: pollution parameters, sanitary tax, sensitivity analysis, wastewater taxation models, wastewater treatment

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