WATER MICROBIOLOGICAL QUALITY IN THE LIS IRRIGATION DISTRICT, PORTUGAL

I.M. Duarte[1*], H. Marques[2], M. Araújo[3], M.P. Amador[1], T.M. Vasconcelos[1], R. Eugénio[4], H. Damásio[5], J.M. Gonçalves[2]

[1] *Instituto Politécnico de Coimbra, Escola Superior Agrária (IPC/ESAC), CERNAS, Bencanta, 3045-601 Coimbra, Portugal*; (iduarte@esac.pt)

[2] *IPC/ESAC, Bencanta, 3045-601 Coimbra, Portugal*

[3] STUDENT ???*IPC/ESAC, Bencanta, 3045-601 Coimbra, Portugal*

[4] *Associação de Regantes e Beneficiários do Vale do Lis, Leiria, Portugal*

[5] *Lis Valley Irrigation District Water User's Association, Leiria, Portugal*

* Corresponding author

ABSTRACT

The society demands for the preservation of water resources have led to major developments on technological and agricultural management, to limit the negative the impacts, favour the socio-economic development and promote the natural resources conservation. Improving irrigation is a key determinant factor of the promotion of sustainable agriculture systems, with the challenges of saving water, reducing pollution risks, reducing costs and increasing productivity a constant challenge. These challenges are placed in a framework of greater technological demand and business competitiveness, in which innovation projects for the improvement of irrigation management are crucial. This communication presents a case study in the Hydro-Irrigation Project of the Lis Valley, located in the Coastal Center of Portugal, in the municipalities of Leiria and Marinha Grande, with an area of *ca*. 2000ha, with high potential for sustainable agricultural productivity. The project includes monitoring the physical-chemical and microbiological quality of water supply and drainage, in the sub-surface zone, aiming its improvement and the consequent minimization of risks regarding the conservation of groundwater and surface water bodies of the Valley. Sampling was essayed for spatial and temporal representativeness, with particularly during the irrigation campaign. The preliminary results obtained in 2018 and 2019 are presented and their analysis is made in order to evaluate situations of microbiological risk of contamination and to obtain information to support the diagnosis and resolution of problems, that is, to support management.

Keywords: Lis Valley Irrigation Project; impact of irrigation; water resources; water quality; microbiological water monitoring