

The problem of olive mill wastewater in Turkey and some solution alternatives

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Abstract

Turkey is the fourth largest olive producing country in the world, and fifth in terms of olive oil production. Olive, as a fruit, cannot be consumed directly due to the oleuropein substance contained in it. It therefore needs to be processed into either table or olive oil through various production technologies. The process through which olives are extracted results in olive oil as the main product, as well as two by-products. One of these by-products is the brown coloured Olive Mill Wastewater (OMWW), which is composed of water (83–96%), organics (3.5–15%) and mineral salts (0.5– 2%), has no direct use and is generally disposed into soil or rivers, resulting in potential contamination of the environment. The dark color of OMWW disturbs the bright appearance of water and prevents the sun light absorption of organisms growing on photosynthesis, such as water plants and algae. All olive producing countries acknowledge OMWW as a problem and consider various alternatives for its solution. Turkey produces approximately 1,200 thousand tons of olive for oil per year, which implies 1,200 thousand m³ of OMWW under the current mill production technologies, and hence is having to face, as others, the problem of OMWW as one of the significant olive oil producing countries in the world. This study proposes and discusses various solution alternatives to overcome the problem of OMWW in Turkey, including the use of treatment facilities. The results of this study contribute to the ongoing efforts in resolving the problem of OMWW by the olive industry and aid in policy making by the government to tackle this important issue.

Key words: Olive mill wastewater; problem, solution alternatives, Turkey.

Acknowledgement

Acknowledgement. This talk is based on an ongoing project between the Department of Agricultural Economics at Adnan Menderes University (Turkey) and School of Management at the University of Southampton (United Kingdom) and received financially support from The Scientific and Technological Research Council of Turkey (TUBITAK) in 2010.

sa2011_a0911