Undergraduate Internship Project #2 of 12 for FY10

Intern Stephanie Hahn’s project, sponsored by the DWRC, was titled “The Use of Recycled Water for Irrigation of Turf and Landscape Plants.” She was advised by Dr. Anastasia Chirnside of the UD’s Department of Bioresources Engineering.

Abstract

Water scarcity and water quality issues across the country are increasing the demand and acceptance by consumers for the use of recycled water. Agricultural and landscape irrigation is the largest user of water resources. Therefore, it is not surprising that the most common type of water reuse has been for crop irrigation and landscape irrigation in urban areas. As the demand for recycled water increases, the need for regulations and recommendations to ensure human safety and to minimize adverse environmental impacts becomes apparent. At the federal level, the Environmental Protection Agency has issued voluntary guidelines that suggest the level of treatment, the minimum quality for reuse, and the type of monitoring required.

Because of the increased use of recycled water, many states have begun to develop water reuse regulations. Due to severe water shortages and the increased use of recycled water, such states as California, Florida, Texas, and Arizona are leading the way in the development of water reuse regulations. California’s regulations regarding the use of recycled water are outlined in Title 22, Code of Regulations on Water Recycling Criteria of the California Administrative Code. These regulations address the quality of the reclaimed wastewater as well as the type of equipment required to produce compliant water. Ultimately, it is the end use of the recycled wastewater that determines the level of treatment. The objective of this project is to develop a comprehensive literature review that defines, from a nation-wide perspective, where the research is at present and outlines what areas of research are needed in order to promote the use of recycled water in the future.