

Project Title: Efficiency of *Vetiveria Zizanioides* and *Phragmites Australis* on Municipal Waste Water Treatment as Plant Materials for Subsurface Flow Constructed Wetland

Research Area	Soil and Water Resources
Research Program	Irrigation Water Quality and Effective Use of Water
Executive Institute	International Agricultural Research and Training Center (IARTC)
Supporting Institute/s	-
Project Leader	Dr. Selçuk GÖÇMEZ, Agricultural Engineer, M.Sc
Other Researchers	Yıldırım KAYAM, Agricultural Engineer, M.Sc Z. Lamia BİLİR, Chemical Engineer
Research Period	2005 - 2011

Project Summary: With this Research, the efficiency of constructed wetlands to treat municipal waste water was investigated, and two marsh plants were tested to adapt the local climatic conditions. The Çukur village, where located in Menemen-İzmir district, waste water had been used in the experiment. In the project, some objectives were aimed as follows; The effects of two aquatic plants on removal of pollution parameters in the treated waste water by constructed wetland, monitoring of fluctuations in system performance of the wetland according to the seasons, evaluation from the point of hydraulic behavior, determination of the nutrients removal by plants, analysis of effluent water from the point of irrigation water quality. In this research, two aquatic plants, called as *Phragmites australis* and *Vetiveria zizanioides* which have different root systems, were investigated to determine their waste water treatment performances with aims mentioned above. Thus, the facility was set as 2 x 12 x 50 = 1200 m². This area is divided into two equal parts of 600 m². Water samples were taken twice a month from the year of 2006 to 2010, and the results were evaluated by analysis.

Key words: Natural Treatment, wetlands, *Vetiveria zizanioides*, *Phragmites australis*, Menemen