

Project title: **Determining Sedimentation and Flow Performances of Different Drain-Envelope Material Combinations Under Laboratory Conditions.**

Research Area	A-13 Sustainable Soil and Water Management
Research Program	P-02 Increasing Water Use Efficiency
Executive Institute	International Agricultural Research And Training Center
Supporting Institute/s	General Directorate Of Agricultural Research And Policies, Hidroluis Drainage Pipe Sys. Co., Ege Universty
Project Leader	Ümit ALKAN – Agriculture Engineer
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Research Period	2018-2019
<p>Project Summary: Sand-gravel envelope materials which have been used for many years in subsurface drainage facilities are now being replaced by geo-textile envelope materials due their cost and lack of feasibility. Although new generation geo-textile materials have still been developed, the logging problems have persisted in time and thus forced the related scientists to come up with new solutions. The project aims to find out the optimum drain-envelope combination for the drainage systems to be installed in intensive agricultural lands with drainage and salinity problems. The Project will be carried out with two different soil type (heavy and light) in two horizontal drainage experiment tank. Experiment plots will be four combinations of different envelope materials wrapped around drain pipes, as follows; D1: Control (No Envelope), D2: Sand-Gravel Envelope Material, D3: Geo-textile Wrapped Drain Pipe, D4: Hidroluis Wrapped Drain Pipe. D5: Crushed Aggregate. The systems will be put to the test under equal conditions in order to determine the differences flow, sedimentation loads and entrance resistances, these differences will also be statistically analyzed. Additionally, there will also be a cost analysis of the above mentioned envelope systems depending on their costs and life time.</p> <p>Key words: Drainage, Envelope Material, Sand-Gravel, Jeotextile, Hidroluis.</p>	