Golnaz Asghari-Ezzati

ESR 11, Work Package 4

Project Title: Sustainable treatment technologies using mixed waste media to mitigate agricultural contaminants in land drainage

Beneficiary, Host research institute: Teagasc, Johnstown Caste, Co. Wexford, Ireland

Host organisation for secondment: T.E Laboratories (TelLab), Tullow, Ireland

Duration: April-June 2017 (60 days)

"This report has been prepared for INSPIRATION (Managing soil and groundwater impacts from agriculture for sustainable intensification) Marie Skłodowska-Curie Innovative Training Network (Grant agreement no. 675120)" as a report on completed secondments.

Introduction

In order to fulfil the requirement of attending secondment(s) at one of the partner research organizations/institutes within the INSPIRATION ITN project, the first secondment for ESR 11 in work package 4 was undertaken with TelLab during April-June 2017 for total duration of 60 days. The aim of this report is to present the outcome in view of the collaboration within Work Package 4 (ESR 11 and 12).

The working plan was to:

Investigate different locally sourced media to be used as a nutrient interceptor in drainage waters with a view toward comparing the media selection between partner countries, conduct a preliminary media test, and select the most efficient ones for my specific project.

Progression

1- Scientific Progress

- Regular meeting with participants in work package 4 (from Teagasc and TelLab) to develop a framework for collaboration between ESR 11 and ESR 12.
- Review existing media-based water remediation techniques and consider how to incorporate a sustainable technique into EU farming systems and provide solution for water degradation issue (due to excess nutrient losses) in surface and groundwater.
- Study the possibility and potential of use of locally sourced media across different partner countries to remediated mixed contaminants.

- Preliminary testing of selected media
- Discussion on how to incorporate the use of same media between ESR 11 and 12 and conduct greenhouse experiment.
- Investigating the possibility of recycling the saturated media (which has been used as a nutrient interceptor) as a fertiliser or soil amendment.
- Investigating the possibility of using passive samplers in Johnstown Castle ditches (my study site) to provide a different type of data (accumulated concentrations) in addition to grab sampling

2- Career development

The opportunity of visiting a private research company active with a wide range of activity including development of environmental sensors and water protection/safety equipment was very interesting. I was mostly impressed by the R & D unit active in developing state of the art techniques and innovative solutions which gave me very good insight into how a private company could promote precision agricultur.