



# Riga



## MICROIRRIGATION PLASTIC PIPES AND DRIPPERS WITH ANTI-MICROBIAL AND ANTI-ROOTS FUNCTIONALITIES

**RIGA** project aims at implementing new irrigation systems based on standard polyolefin grades with new functionalities such as anti-microbial and anti-roots. Such innovative properties allow increasing their functionality up to the end of their shelf-life and contribute to water saving in comparison with the current systems in the market.

### COORDINATOR:



**AIMPLAS** - Plastics Technology Centre  
Contact: Itziar Carracedo, Dr. Nuria Lopez  
e-mail: [icarracedo@aimplas.es](mailto:icarracedo@aimplas.es);  
[nlopez@aimplas.es](mailto:nlopez@aimplas.es)  
[www.aimplas.es](http://www.aimplas.es)

### PROJECT PARTNERS



#### GALLOPLAST

Contact: José Lucena, Xavi Mateu  
e-mail: [jlucena@galloplast.com](mailto:jlucena@galloplast.com);  
[xavier.mateu@gllgrup.net](mailto:xavier.mateu@gllgrup.net)  
[www.galloplast.com](http://www.galloplast.com)



#### IRRITEC

Contact: Roberto Pellegrino,  
Francesco Quagliozi  
e-mail: [francesco.quagliozi@irritec.com](mailto:francesco.quagliozi@irritec.com);  
[roberto.pellegrino@irritec.com](mailto:roberto.pellegrino@irritec.com)  
[www.irritec.com](http://www.irritec.com)



**PCG** - Vegetable Research Centre East-Flanders  
Contact: Elise Vandewoestijne  
e-mail: [elise@pcgroenteteelt.be](mailto:elise@pcgroenteteelt.be)  
[www.pcgroenteteelt.be](http://www.pcgroenteteelt.be)



**PCS** - Research Centre for Ornamental Plants  
Contact: Joachim Audenaert  
e-mail: [joachim.audenaert@pcsierteelt.be](mailto:joachim.audenaert@pcsierteelt.be)  
[www.pcsierteelt.be](http://www.pcsierteelt.be)



**Ce.R.S.A.A.** - Centre for Agricultural Experimentation and Assistance  
Contact: Dr. Federico Tinivella  
e-mail: [federico.tinivella@alice.it](mailto:federico.tinivella@alice.it)  
[www.cersaa.it](http://www.cersaa.it)

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**eco-innovation**  
WHEN BUSINESS MEETS THE ENVIRONMENT





### Specific objectives of RIGA project

- ✓ Set up of suitable additives to plastic pipes and drippers with anti-microbial and anti-roots properties;
- ✓ Assessment of the functionality and the duration effect of the new additives;
- ✓ Evaluation of treated pipes and drippers properties, with regards to correlated aspects such as soil quality, water quality and plant growth;
- ✓ Study of the possibility to recycle both pipes and drippers with positive side effects on the environment.

### Main environmental objectives of RIGA project

- ✓ Reduction of agricultural plastic wastes;
- ✓ Reduction of greenhouse gas emission thanks to the expected extension of the shelf life of the innovative pipes and drippers;
- ✓ Elimination of toxic substances from superficial water (herbicides);
- ✓ Reduction of water consumption (reduced pipe maintenance and clogging).

### Actions and means involved

- ✓ Main features of micro-irrigation products will be improved through optimization and adjustment of their compounds. Several characterizations will be done by AIMPLAS and GALLOPLAST to understand the additives properties in order to adapt them to the industrial equipment. Optimized masterbatches will be scaled up with the help of GALLOPLAST.
- ✓ Thanks to the information collected, flat pipes and drippers will be obtained. The extrusion process will be tested and optimized at industrial level in IRRITEC facilities to obtain the pipes. New drippers will have the same characteristics as the actual drippers to ensure their functionality.
- ✓ The final products will be validated in soil by CERSAA, with the help of PCG and PCS, through cultivation trials of different crops to verify that the functional characteristics remain stable throughout their lifetime.

### Expected results

- ✓ Study and definition of the requirements of PE masterbatches with suitable anti-algae and anti-microbial additives;
- ✓ Production of pipes and drippers with innovative properties at both pilot and industrial level;
- ✓ Drafting of technical data sheets for a correct use of pipes and drippers during crop cultivation;
- ✓ Validation of pipes and drippers in field conditions through dedicated demonstrative trials;
- ✓ Set up of guidelines for the cultivation of vegetable and ornamental crops, that envisage the adoption of the innovative micro-irrigation pipes and drippers;
- ✓ Quantification of the environmental and economical impact deriving from the adoption of the innovative pipes and drippers;
- ✓ Support of the market introduction of the obtained innovative products in order to assure the most effective use of the developed pipes and drippers by growers.

### Duration and budget

Riga Project started on July 1st 2014 and will last until December 31st 2016.

#### Total Budget

European Commission contribution  
Beneficiaries' contribution

**1.282.647 €**

641.322 €

641.325 €