

RichWater

First application and market introduction of combined
wastewater treatment and reuse technology for agricultural purposes

Start date of the project: February 2016

Duration of the project: 24 months

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www.richwater.eu

GENERAL INFO


There is a growing concern throughout the EU regarding **water scarcity** and the significant impacts on water resources by agricultural activities. Especially in Southern Europe, water scarcity already leads to severe conflicts between different water users. In some Mediterranean areas, irrigation water is estimated to account for up to 80% of total water abstraction.

The European agricultural sector is also facing **serious risks** such as **nutrient availability**, the **growing demand for food and biofuels** and the increase of **extreme weather** events due to climate change. Meanwhile, nutrient-rich wastewater runs untreated and unused in our surface water bodies causing environmental damages (e.g. eutrophication or groundwater pollution) and health risks.


Therefore, the use of **“reclaimed water”** (i.e. treated wastewater) can be an alternative water resource for agriculture. Water and nutrients contained in reclaimed water can be used for different purposes instead of being discharged to the environment. The technology developed in RichWater project is a **ready to market** advancement of the Treat&Use system, a successful EU research project (FP7) approaching the **safe and economic reuse of wastewater in agricultural production**.



OBJECTIVES



Demonstration of a modular ready to market wastewater reuse system producing a **pathogen-free** (99% of E. Coli removal) and **nutrient-rich effluent** (presence of NPK according to crop needs) for direct application in a real fruit and vegetable production-site in a water scarce region (Southern Spain).



Tackle market entrance barriers by standardisation and certification of the RichWater modules within the ETV Pilot Programme, and by developing in depth market assessment and business plans for Spain, Greece, Turkey, Italy and the MENA region and designing competitive marketing and finance strategies.



Assessment of potential benefits and risks of the near-market prototype for the environment and human health.



Ensure that **crops irrigated with reclaimed water** have sufficient **quality standards** for farmers and customers.



Reducing the environmental impacts of untreated wastewater (e.g. eutrophication).




Reduction of freshwater and fertilizer consumption in water scarce areas of the Mediterranean.





Reaching low energy costs for water treatment and reclamation.


TECHNOLOGY

RICHWATER TECHNOLOGY is based on the complementary action of **4 modules**:

 **Wastewater treatment:** The core is an adapted low-cost MBR water treatment system, which provides a safe but nutrient rich effluent adequate for irrigation.

 **Monitoring and control unit:** Soil sensors are placed in the root zone, constantly analyzing moisture content and nutrient concentration. The data is digitalised and transferred to the Automatic Monitoring and Control Station.

 **Mixing unit:** The mixing module ensures demand driven irrigation adopting the appropriate concentration of nutrients by mixing clear water and treated wastewater according to the information received from the monitoring module.

 **Fertigation station:** The irrigation unit is integrated in the system so that the effluent of the MBR can be directly used in agriculture with an adapted technology optimized for the use of treated wastewater.



Richwater is a “Fast Track to Innovation” project which aims to demonstrate an innovative technology for wastewater reclamation in agriculture



Circular
Economy



Irrigated Water
Resources Management



Sustainable
Development



Closing the loop of
water and nutrients

RichWater technology is a cost effective and environmentally sound solution which increases agricultural production in water scarce regions by making available a complementary source of water and nutrients.

A few keys about RichWater...



The membrane bioreactor provides a high quality, nutrient rich effluent



Automated system with sensors for constant monitoring



An exhaustive agronomic study will verify safety and quality of fruits and vegetables

...and a few figures:

Recovery rate of treated water: **100%**

Escherichia Coli removal: **100%**

Recovery rate of Nitrogen: **80%**

Recovery rate of Phosphorus: **68%**

Costs savings: **20%**

Potential turnover increase: **20%**

CONSORTIUM

BIOAZUL S.L.
Spain

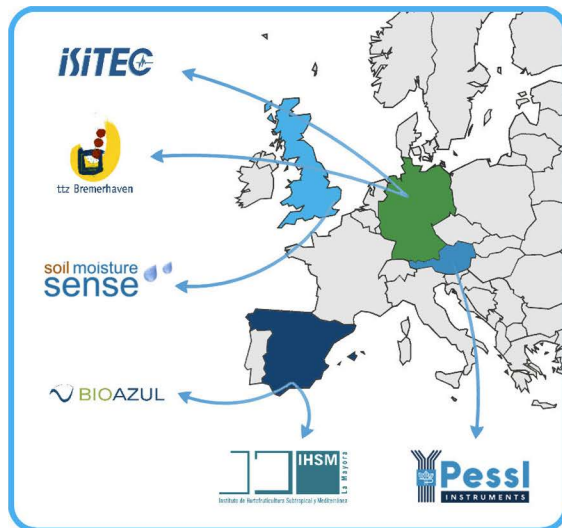
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Germany

CSIC- IHSM LA MAYORA
Spain

PESSL INSTRUMENTS GMBH
Austria



CONTACT

Coordinator: Rafael Casielles
BIOAZUL S.L. (Málaga, Spain)

+34 951 047 290

rcasielles@bioazul.com

www.bioazul.com



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