

# Safe and efficient treatment and reuse of wastewater in agricultural production schemes

## TREAT&USE - Erfahrungsbericht eines Projektpartners

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# Short Introduction of Pessl Instruments and iMETOS

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# What are we working for?

- Climate Information for Farming decisions
  - How favorable is the weather for a specific crop, variety ...
  - Talking about the weather
- Disease progress or disease pressure information as an output of plant disease models
  - May there be disease problems, high pressure, unusual diseases..
  - What are the important treatments
  - Does my product fit to the disease situation..
- Train farmers for better understanding of diseases
- Give Evapotranspiration data to farmers for better irrigation
- Use soil moisture measurement in irrigation trials for better understanding in soil water behavior
- Use soil salinity sensors
- Making Irrigation designs simpler
- Making Irrigation Control more comfortable to use



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## Company Profile

**Founded:** 1984 by Gottfried J. Pessl

**Site:** Weiz - Austria

**Distribution:** Worldwide

**Products:** Weather Stations, Soil Moisture Monitoring Equipment, Agricultural Tracking Tools, Storage Monitoring, Green House Monitoring, Sensors and Software, Activators

**Staff:** 18 Persons (Production: 4 Technician 1 Engineer, Development: 4 Electronic Engineer, 4 Software Engineer, 1 Agricultural Engineer, Marketing and Administration: 3 Economists, 1 Engineer)

**Verkaufte METOS<sup>®</sup> Systeme:** ca. 18.000 since 1990

## Mission

We want to produce reliable and economic monitoring devices for the world of agriculture helping to reduce resource use.



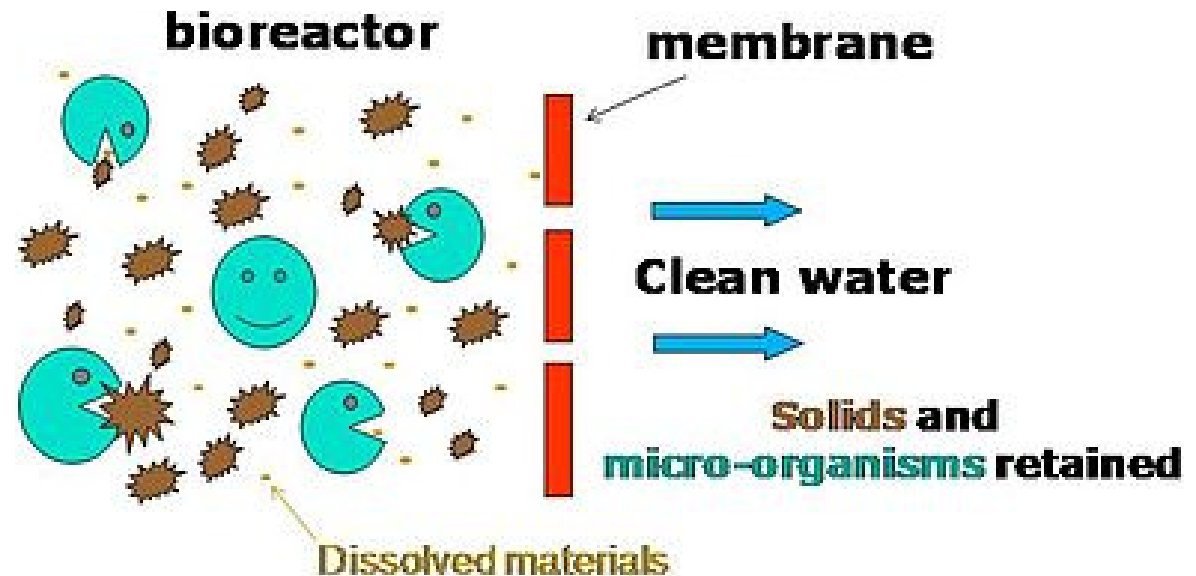
The TREAT&USE project aims at building on the results of the former EU research projects PURATREAT and WACOSYS.

In PURAREAT several promising low-energy consuming MBR systems have been developed, adapted and tested with the objective to treat communal wastewater in low cost way for reuse options.



Most promising membrane bioreactor investigated during PURATREAT

**Membrane bioreactor** (MBR) is the combination of a [membrane process](#) like [microfiltration](#) or [ultrafiltration](#) with a suspended growth [bioreactor](#), and is now widely used for municipal and industrial [wastewater](#) treatment with plant sizes up to 80,000 population equivalent (i.e. 48 MLD)



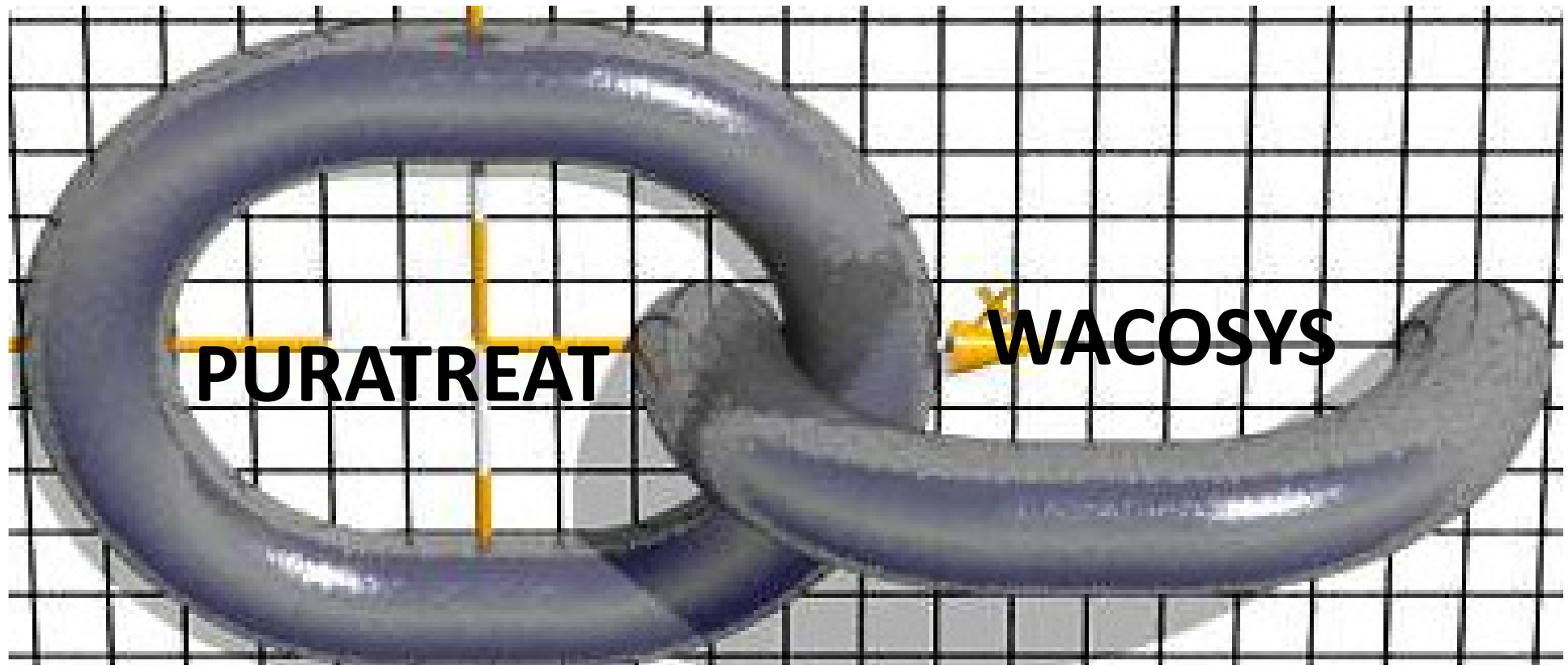
When used with domestic wastewater, MBR processes could produce effluent of high quality enough to be discharged to coastal, surface or brackish waterways or to be reclaimed for urban irrigation.

The European Research project **WACOSYS** (Monitoring and Control System for Wastewater irrigated Energy Plantations – Contract number: COOP-CT-2004-512877) did develop, test and optimize a monitoring and control system (WACOSYS-system) for wastewater irrigation of agricultural production schemes (biomass production).



Short rotation plantation with wastewater tank and container (containing mixer installation to mince larger parts) in the foreground at the location in Spain and one of the applied soil sensors before implementation in the ground

# TREAT&USE



Will give an integrated solution from waste water cleaning to the production of bioenergy irrigated with purified waste water.



# Core Competence of Pessl Instruments

- Give Evapotranspiration data to farmers for better irrigation
- Use soil moisture measurement in irrigation trials for better understanding in soil water behavior
- Making Irrigation designs simpler
- Making Irrigation Control more comfortable to use

# What are we working for?

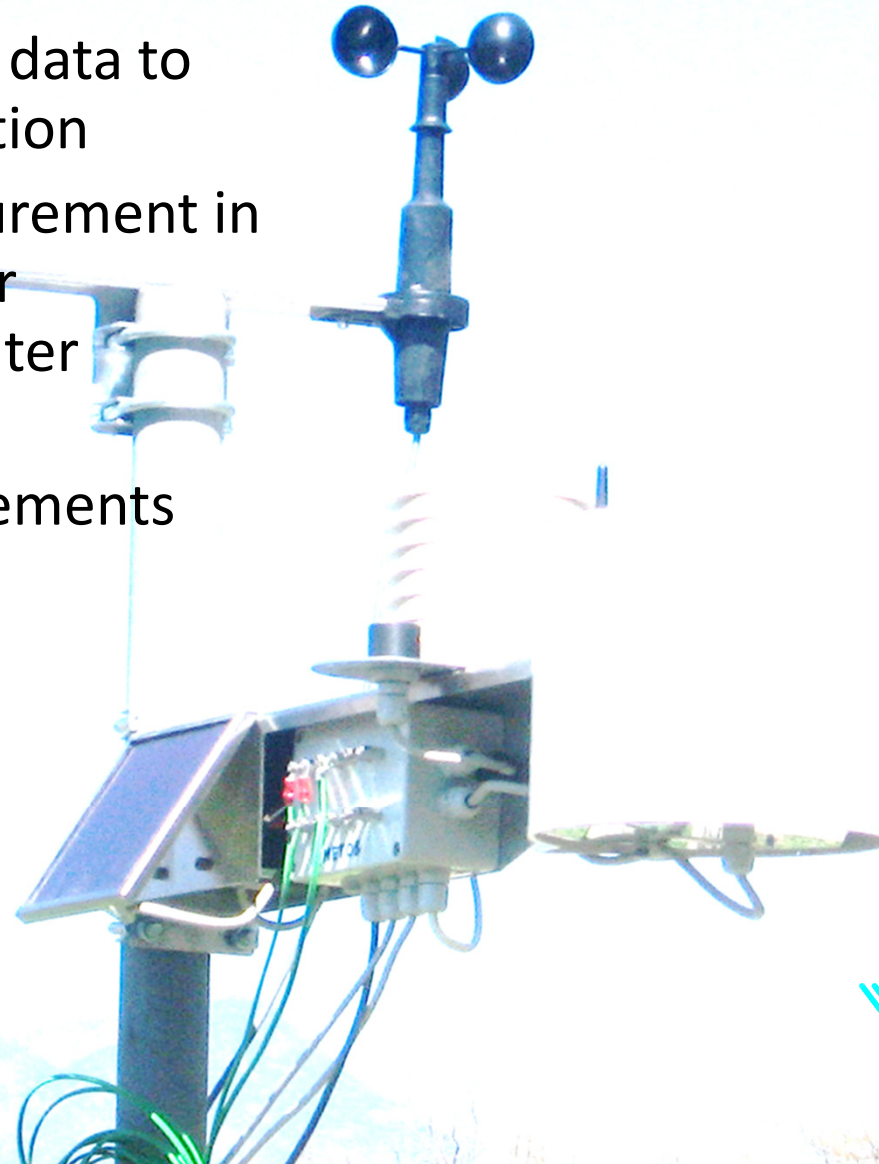
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Give Evapotranspiration data to farmers for better irrigation

Use soil moisture measurement in irrigation trials for better understanding in soil water behavior

Use soil salinity measurements

...



# What are we working for in Treat&Use?

The positive economic impact for the SME partner PESSL lies in the new market application for its advanced soil sensor systems. In order to control the quality of the reused wastewater and in order to have a groundwater protection system, the application of soil sensors in TREAT&USE are obligatory.

- Increase in experience in the use of salinity sensor
- Market Access to Environment Management
- Ability to test and improve sensors and equipment.
- Ability to get a new application for our logistic system which we develop in parallel.

