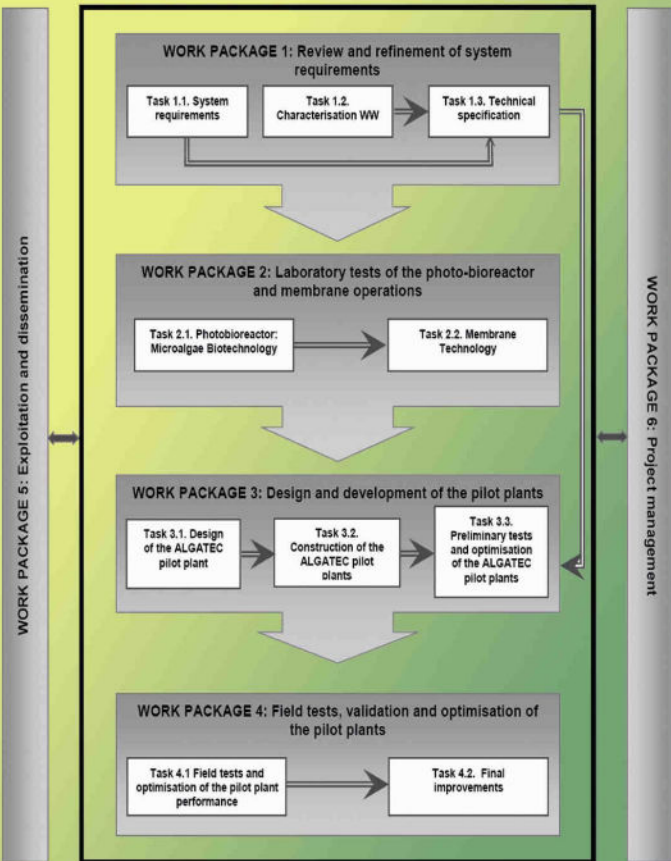


The main activities of ALGATEC project will be devoted to:

- Definition of the system requirements including: end-users needs, legal framework and required treatment level.
- Laboratory scale test and optimisation of the system.
- Desing, construction and installation of two pilot plants in two olive oil mills: one in Andalucia and one in Crete.
- Test and optimisation of the ALGATEC system under real conditions.
- Dissemination activities in particioating countries of the project and its results.
- Administrative, financial and IPR management.



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# Biotechnological recycle of olive mills washing water by microalgae

[www.algatec.net](http://www.algatec.net)



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EC Contribution  
 1,070,162.00 €

Duration: 24 months from 15th April 2009.

## PROJECT DESCRIPTION

The current methods of wastewater disposal increase the overall production costs, and additionally they are also environmentally unacceptable and extremely inefficient in terms of water use.

ALGATEC is a Research for SME project that aims to propose a cost - efficient system for the on-site treatment and reuse of washing water generated in small olive oil mills, with high pollutant content, by means of a affordable and compact photobioreactor using microalgae followed by a membrane technology module, capable to recover and recycle the majority of the drinkable water used in the process of olives washing. Furthermore, the problem of the disposal of wastewater from olive oil mills will be reduced because the reutilisation of the washing water will diminish the overall volume of wastewater, with both economical and environmental benefits.

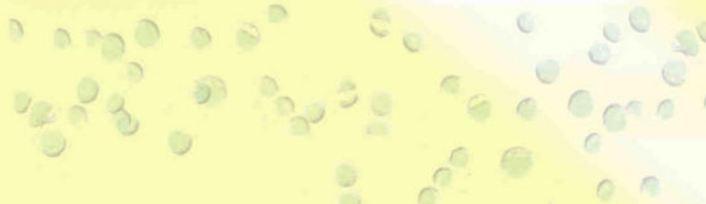
The main advantages of the ALGATEC system application are:

- It provides a decentralised, safe and cost-efficient wastewater treatment and water reuse system, especially applicable for small and medium sized olive oil producers.
- It reduces water consumption of the process by 90%.
- It is easy to control, easy to maintain and adjustable.



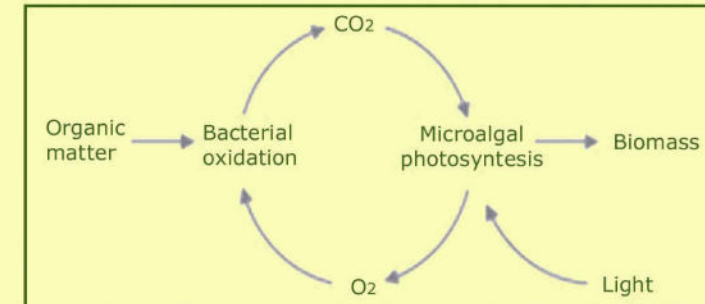
## OBJECTIVES

- To provide an affordable technical solution for reducing the consumption of drinkable water in the olives washing process by 90% and increasing the overall water efficiency of the process by 80%.
- To diminish the overall effluent of polluted water produced in olive oil mills, reducing the wastewater management costs and the environmental impact of wastes.
- To increase the competitiveness of the participant SMEs and the European olive oil industry through a cost-effective WW treatment and an improved water management.
- To answer to the current need of increasing the sustainability of European agricultural sectors by implementing a solution that will enhance the current water and wastewater management systems
- To enable the olive oil producers in Europe keep its leadership in the olive oil market, with non-European countries entering the market.
- To increase employment in the sector by capacity building in state - of - the - art technologies and creation of new jobs in the design and construction of the proposed systems.



## ALGATEC SYSTEM

The patented concept of a photobioreactor using algae intends to use the free and nearly unlimited available source sunlight in order to reduce the water consumption, and to improve its quality by algae nutrient uptake. In addition, the system captures CO<sub>2</sub> from the atmosphere for the biological processes.



Oxygenation principle in BOD removal processes

To achieve the project objectives, ALGATEC will create a procedure for the treatment and reuse of washing water from the olive cleaning process. The ALGATEC system will include the pre-treatment of the washing water (preliminary filtration with a laminar settlement tank), the main treatment with a photobioreactor using microalgae and the post - photobioreactor treatment based on membrane filtration.

