

Descriptive sheet

# DEMO SITE DE LA CANOURGUE Lozere - France

Industrial pilot site for fish farming effluents  
treatment through **lumbricomposting**

Located at  
**Frezal Source  
Aquaculture Farm**  
- High school Louis Pasteur -



**Phase 2**  
Lumbricomposting  
of mixed sludge

**Phase 1**  
Sludge recovery  
and thickening

[www.innoqua-project.eu](http://www.innoqua-project.eu)

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Horizon 2020 research and innovation programme



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# INNOQUA pilot sites

The **INNOQUA** project gathers 20 partners' multidisciplinary expertise with the aim to demonstrate the new modular wastewater treatment system effectiveness based on the natural purification capacity of biological macro and microorganisms (earthworms, zooplankton and microalgae).

**INNOQUA** has installed two pilot sites and 11 demonstration sites in 11 countries around the world operating in real conditions.

These pilot sites provide a platform for scientific research and training and serve as a basis for local dissemination activities.

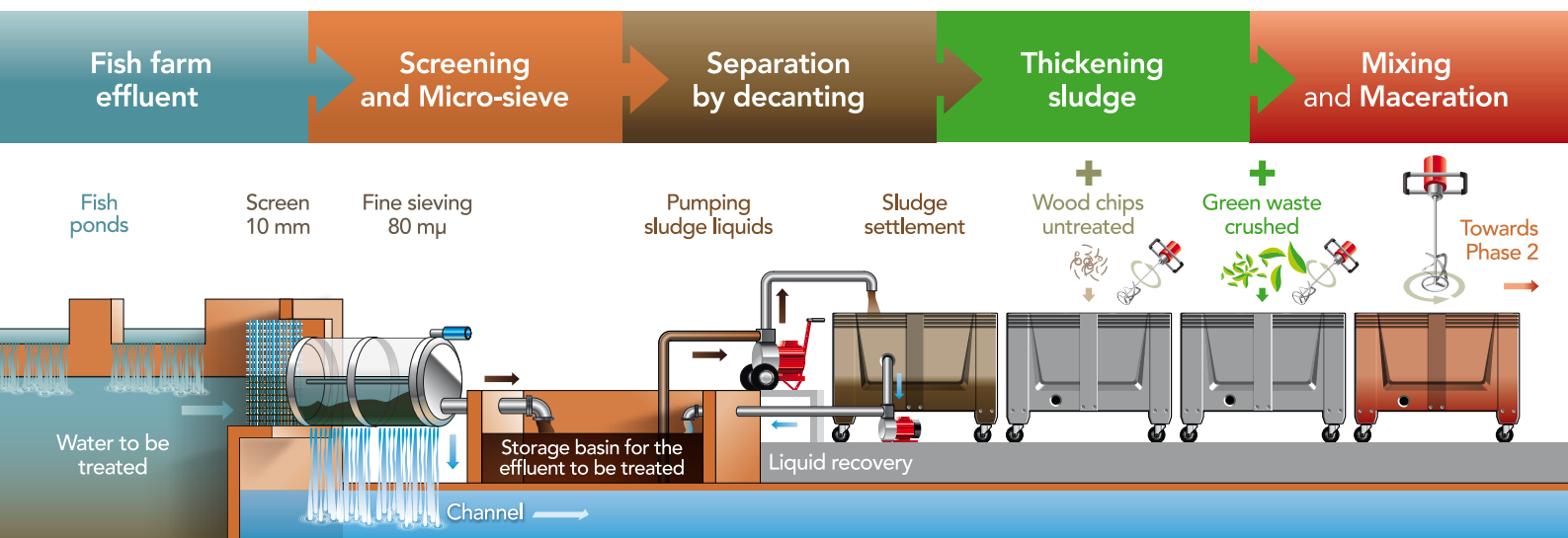
« **LombriTek association** » located in the metropolis of Montpellier (France), member of the European project, provides all players with its know-how in lumbrifiltration wastewater treatment material and lumbricomposting.

At **La Canourgue**, a demonstration on the ecological role of earthworms in the processing and valorization of agro-industrial sludge is carried out as part of a freshwater fish farm.



## Demo site LA CANOURGUE

- La Canourgue is a French commune, located in the department of Lozere and the Occitanie region.
- The city is crossed by canals and has preserved a historic centre consisting of narrow streets and historic buildings.
  - It has a population of 2100 people.
- It is located 160 km north of Montpellier (South of France).
- The minimum and maximum altitude of La Canourgue are respectively of 521 m and 1008 m.
- The surface area of the commune is 104.29 km<sup>2</sup> or 10,429 hectares.
  - The demonstration site is located at an altitude of 571 m.



## Innovative ecological process

- **Compact system and low operating cost**
- Landscape **integration**
- **Absence** of odour nuisance
- Awareness-raising site with an **educational objective**
- **Adaptable** to any type of climate
- **Economic recovery** of treated sludge: in agriculture and gardening
- **Qualification objective** for lumbricompost in accordance with NFU 44-051 standard (organic farming)
- Circular bioeconomy process for the **valorization of bioresources**
- **Possibility of eco-financing** for this type of ecological construction

# The issue of sludge

Sludge management is a major issue for inland fish farming facilities. Disposal of this sludge is generally done by tractor + tonne of slurry (carbon impact and disposal price).

Agricultural spreading is currently the main way to reduce the impact of the disposal (without treatment) for aquaculture sludge.

From a legislative and regulatory perspective, the aquaculture producer is responsible for the sludge it produces, but not being a landowner, he actually only control a part of the cycle of this waste and as a result, he cannot guarantee their traceability and safety for the environment.

The solution proposed by **INNOQUA** presents the triple advantage of :

**1 - Overcoming the problem of evacuation** and enable joint recovery of waste on a scale of a territory, (sludge, green waste ...).

**2 - Controlling the sludge's full life cycle** and neutralizing it as waste.

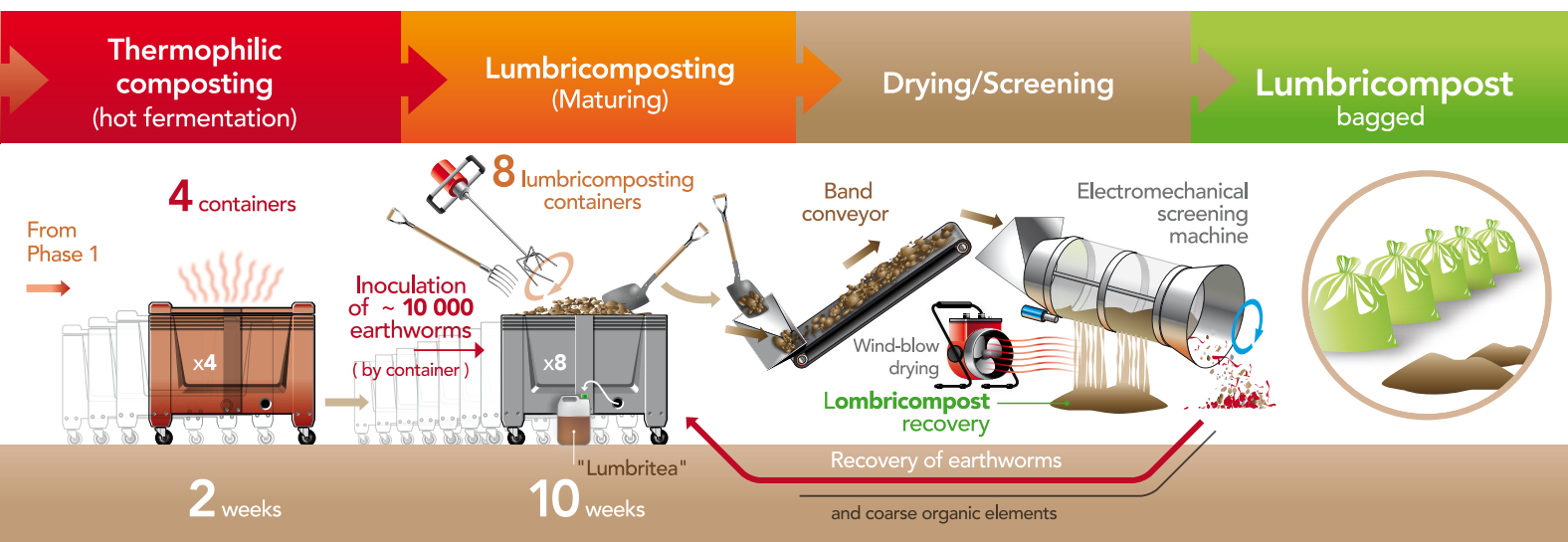
**3 - Transforming waste into products:** lumbricompost, "lumbritea", without emitting new garbage.

## Configuration

Two-phase sludge treatment system for the Aquaculture Farm :

**Phase 1** - Shelter: pumping of liquid sludge, thickening with untreated wood chips, then mixing with crushed green waste and maceration on site for two weeks.

**Phase 2** - Barn: thermophilic composting (hot fermentation) without earthworms for 2 weeks, lumbricomposting (maturation) with earthworms for 10 weeks, then recovery of the lumbricompost by screening (5 mm mesh size).



### Beneficiary

Lozere EPLEFPA  
La Canourgue Aquaculture site

### Location

LEGTPA Louis Pasteur - Chemin Fraissinet  
48500 - La Canourgue - France

### Design Capacity

60m<sup>3</sup>/year (agro-industrial sludge)

### Wastewater Source

Frezal Source Aquaculture Farm

### Scientific Research Objectives

Installation in France of a first permanent site for fish and aquaponics waste treatment, with an educational vocation and national and international influences.

# The ecological and agronomic role of earthworms

## The main players in lumbricomposting

These earthworms are able to digest per day an amount of organic matter equivalent to their weight (0.3 to 0.5 g).

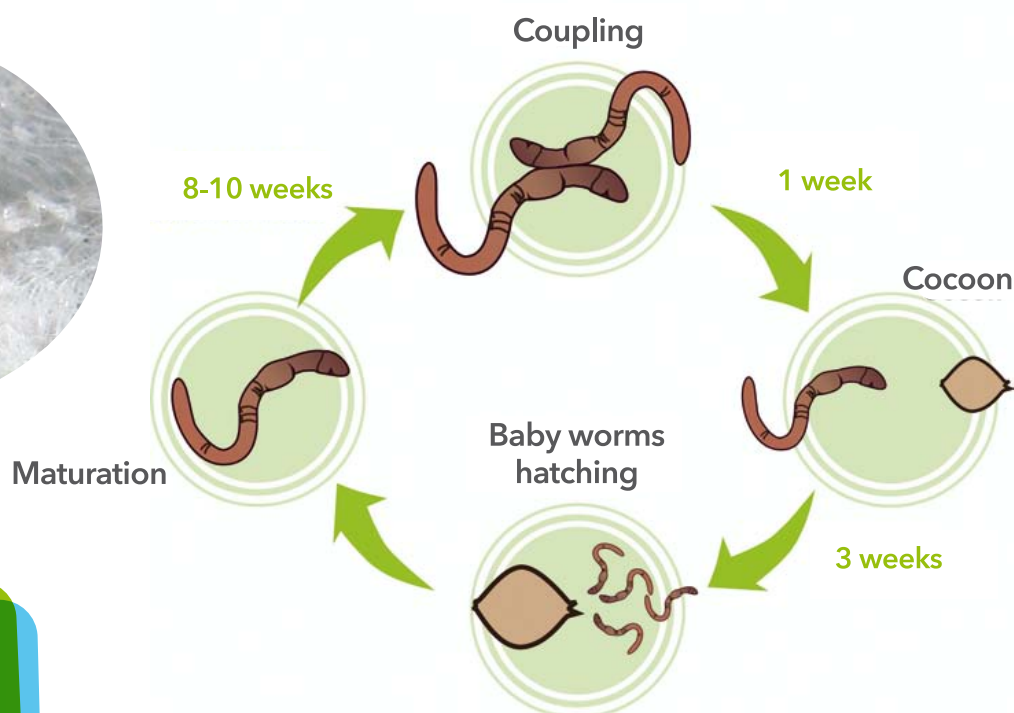


Two species of earthworms specifically selected and bred for lumbricomposting organic waste



## The reproductive cycle

of earthworms used in lumbricomposting of organic waste is **3 months**.



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contact us :



M. Patricio SOTO  
President LombriTek association  
p.soto@lombritek.com  
[www.lombritek.com](http://www.lombritek.com)



M. Philippe LEROY  
Director of Operations  
philippe.leroy@educagri.fr  
[www.epl-lozere.fr](http://www.epl-lozere.fr)