

Partners:



Duckweed technology for improving nutrient management and resource efficiency in pig production systems

<http://www.life-lemna.eu>



Contact:

Andrés Pascual Vidal
apascual@ainia.es
AINIA CENTRO TECNOLÓGICO
C/Benjamin Franklin, 5-11
Parque Tecnológico de Valencia



Disclaimer

The information and views set out in this [report/study/article/publication...] are those of the author(s) and do not necessarily reflect the official opinion of the European Union. Neither the European Union institutions and bodies nor any person acting on their behalf may be held responsible for the use which may be made of the information contained therein.



Lemna project is being developed under the support of the Life Programme of the European Commission

LIFE15 ENV/ES/000382

The main objective of **LIFE LEMNA Project** is to demonstrate the **technical feasibility and sustainability** of a system for **nutrient recovery** from the anaerobic digested swine manure **based on the production of duckweed**

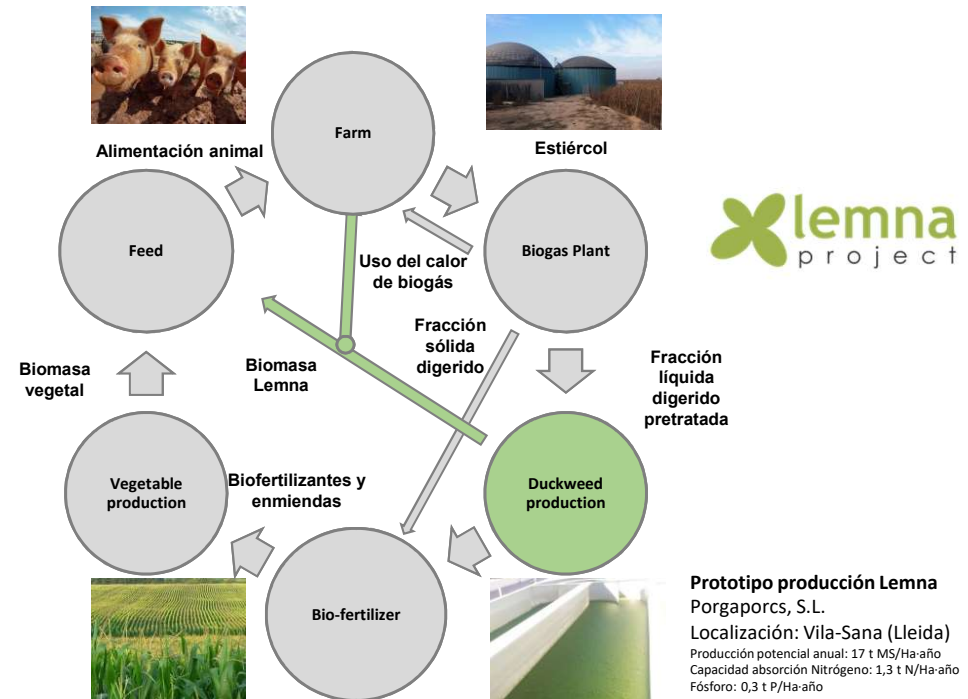
Duckweed (water lentils)

- Small free-floating macrophyte with worldwide distribution.
- Lemnaceae family with 4 main genera in Europe (*Lemna*, *Landoltia*, *Spirodela* y *Wolffia*).
- relatively simple morphology with no stems or true leaves
- In the environment, it grows in still or slow-moving fresh water.
- High biomass production rate and easy to harvest.
- High capacity for removing dissolved nutrients from water, especially nitrogen and phosphorous compounds.
- **Biomass composition:**
 - ✓ High protein and carbohydrates content.
 - ✓ High nutritional value of the amino-acids.
 - ✓ Low content in lignine y variable en starch and cellulose.



Proposed model

LIFE LEMNA Project has built the first full scale in EU innovative system for nutrient recovery from swine manure based on the combined AD and duckweed systems.



Expected results

- Collection of 25 duckweed strains from 3 duckweed species native of Europe.
- Construction of a prototype for duckweed production at demo scale
- To improve the efficiency of nutrient recovery in intensive pig farms.
- To reduce the pollution caused by the surplus of nutrients (Nitrogen and Phosphorous) from pig manure.
- Production of a bio-fertilizer with high concentration of amino-acids.
- Production of vegetable protein with a low carbon footprint.
- e-LEMNATOOL for a preliminary assessment of applicability of LEMNA model in pig farms.