THE SYMBIOSIS PROJECT: BRINGING ANAEROBIC DIGESTION TECHNOLOGY TO RURAL AREAS OF SPAIN AND PORTUGAL FOR WASTES VALORIZATION

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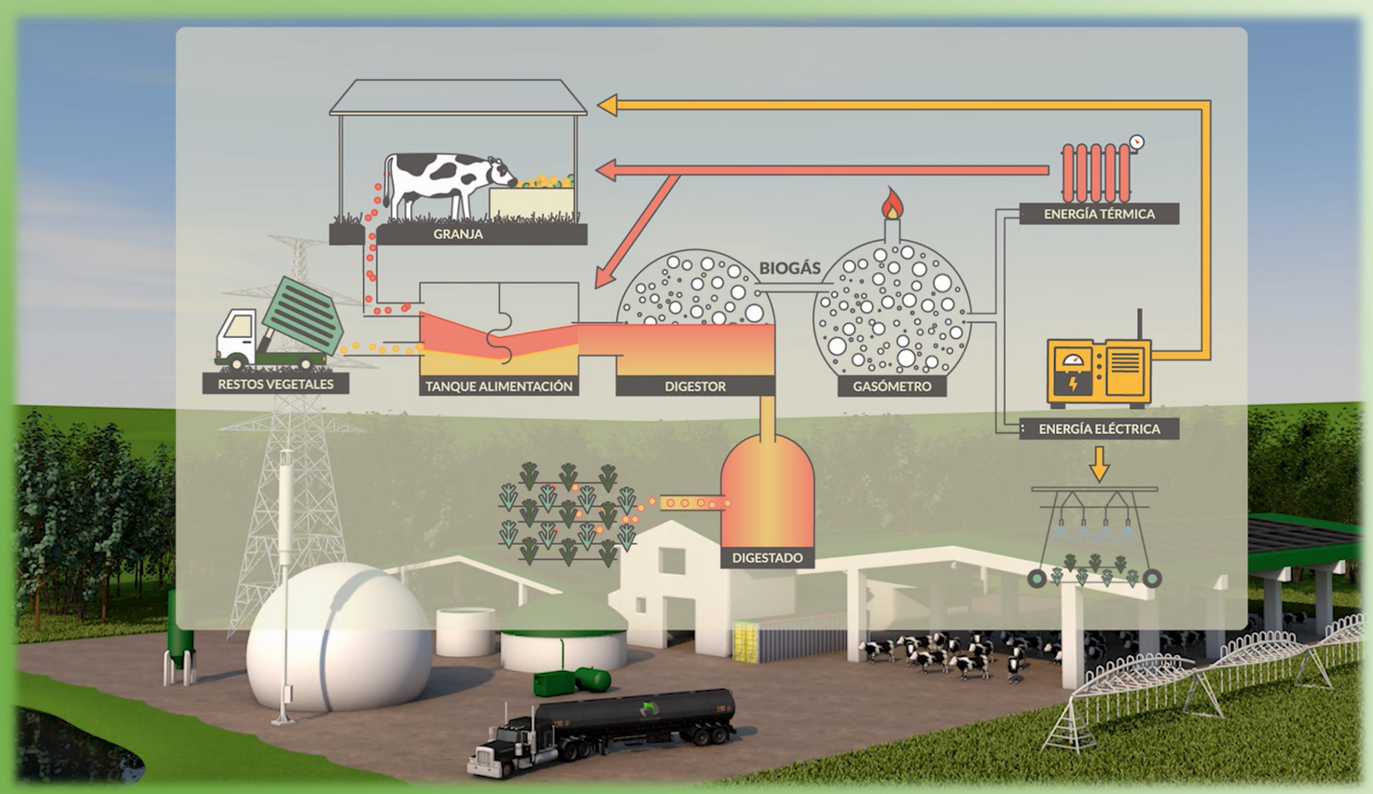
Project main objective:

To promote the efficient management of agricultural holdings in the Spain-Portugal Cooperation Area in order to provide them with greater profitability and competitiveness through the increase of technological development and innovation, contributing to the fixing of rural population in the cross-border area between both countries. Moreover, this work aims to demonstrate that on-farm scale biogas plants are suitable for wastes treatment in rural areas to valorize manure and plant residues to produce electric and thermal energy, promoting job creation, and strengthening these rural areas.

Background

- Rural areas, disperse population.
- Aged population, mostly men, population lost.
- Economy based on agriculture and livestock production.
- No primary products transformation.
- Small and dispersed villages, bad infrastructures.
- Intensive livestock production, land availability.
- High fertilizers consumption.



Project location

Spain-Portugal Cooperation Area of the Castilla y León Region (Salamanca and Zamora NUTS III) and the Central Region of Portugal. Interreg V-A (Poctep 2014-2020).

ITACyL activities

- Analysis and characterization of co-substrates.
- Identification of optimal co-substrates.
- Biodegradability assays (Figure 1).
- Optimization of biogas production.
- Nutrient recovery and digestate valorization.
- Biogas pilot plant design.
- Determination of energy savings.
- Optimization on-farm water management.

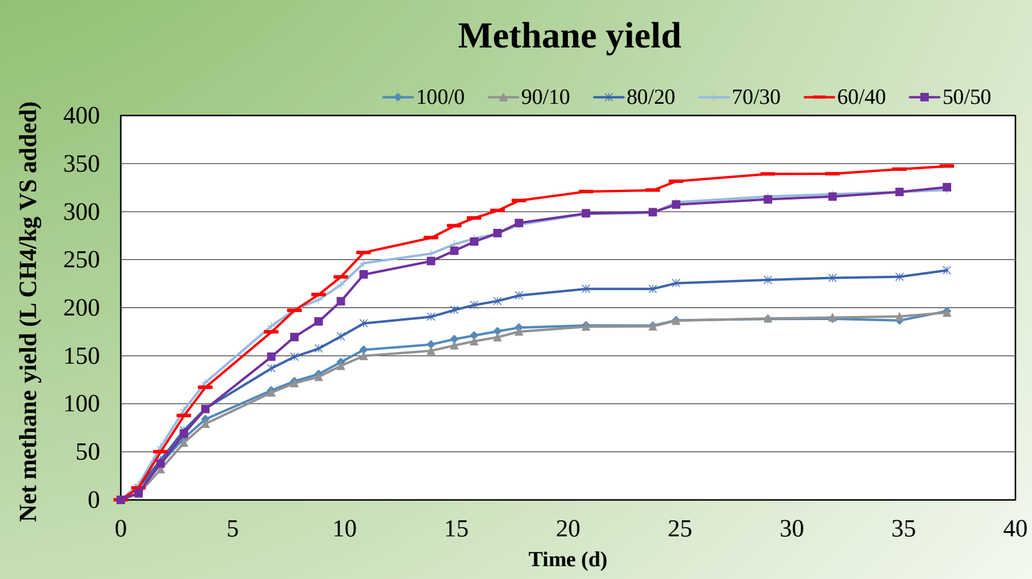


Figure 1. Accumulated methane yield in the evaluated treatments for different mixtures of cattle manure/rye silage (VS/VS) at a substrate-inoculum ratio of 1.

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