

Who is the main beneficiary

These tools are targeted towards two types of potential end-users:

- Owners of biogas plants who want to know the economic consequences of using different mixtures of substrates and changes to the plant operating parameters.
- Farmers and owners of agricultural facilities, who are considering investment in a biogas plant and need a first economical evaluation. Their interest is to know the context of the Biogas production in their area and having the most complete and up-to-date information regarding production potentialities, legal obligations and also technical advice for biogas plant operation and finally a first overview of economical interest of biogas production.



European Agricultural AD Helpdesk

The Helpdesk has the objective of providing the evaluation of the technical-economical and legislative situation of several European countries, including: Belgium, Spain, Germany, Slovakia, Greece, Italy, France, and Denmark. You can contact biogas experts that will provide you with advice and solutions regarding Anaerobic Digestion from Agricultural Residues.

www.adhelpdesk.eu

Project description

This project is based on research for finding the best source and composition of agricultural wastes that would normally be disposed of, at considerable cost to the farmer, for the production of biogas. The project looks into the potential of how this can be avoided and how to turn a waste into a resource.

The waste goes through a process of anaerobic digestion (AD) (decomposition in the absence of oxygen), using established technology to produce the biofuel - biogas (~60 % methane).

The project involves 24 expert partner organisations throughout Europe who will gather knowledge and data about financial, legal and technical requirements to develop AD treatment options under different local conditions in Europe.

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Project coordinators



DAAS
Dansk Landbrugsrådgivning Landscentret
www.landscentret.dk



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SIXTH FRAMEWORK
PROGRAMME



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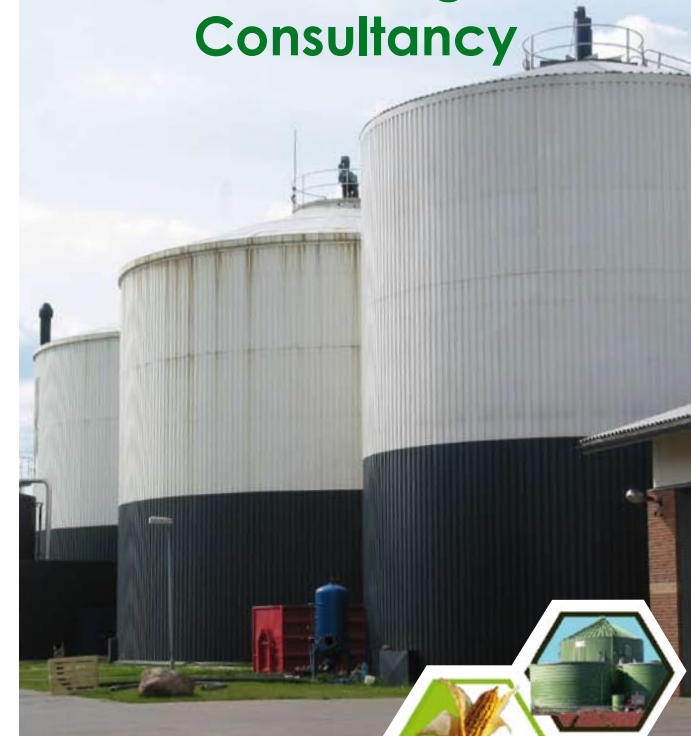
AGROBIOGAS

"An integrated approach for biogas production with agricultural waste"



EU-funded research project

European Agricultural Anaerobic Digestion Consultancy



www.agrobiogas.eu

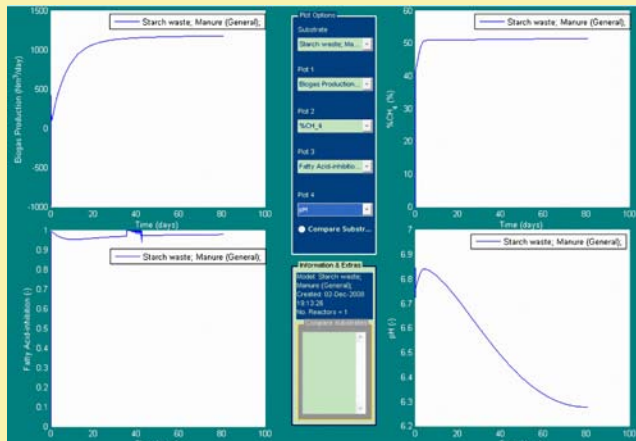
Anaerobic Digestion Simulation Tool

Description of the Tool

The ARGROBIOGAS AD model is a useful tool that would be operative over a large range of agricultural substrates. This tool is an easily accessible, user-friendly software programme that will link dynamically with the AD model to support the final goal of evaluating biogas production based on the selected mono- or co-digestion input.

Main Results and Benefits

After running the simulation, the outputs of the model may be visualized graphically and compared with previously simulated scenarios. Profiles, such as those shown below, are obtained and can be selected for each of the variables including the engineering and additional state variables used by the model.



Example of different profiles obtained after model simulation

Investment Decision Tool

The investment Decision Tool (IDT) is aimed at helping the investors evaluate the economical benefits of a biogas plant, in conditions where the necessary inputs (substrates) and plant operating conditions are provided.

The IDT shall incorporate the following functions:

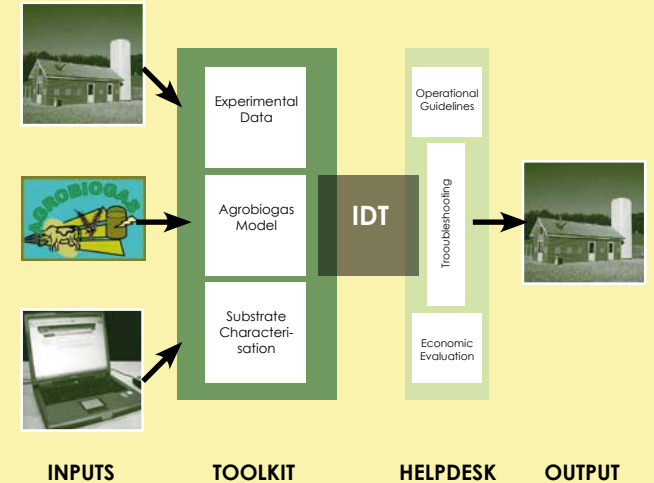
- estimation of biogas production and concepts for the different biogas utilisation routes (e.g. electricity generation and sales)
- a list of biogas technology suppliers
- a checklist for the necessary approval/permits issued by the respective authorities (if required)
- an economic evaluation for the specific case-studies considered.



Guidelines for utilisation of AD digestate as biofertiliser

The recommendation guideline for utilisation of digestate as a biofertiliser aims to define quality criteria and indicators for the use of digestate as a bio-fertiliser by the end-users (mainly farmers). The recommendations define minimum standards for utilisation of the AD sludge as fertiliser in agriculture and horticulture. This study devotes special attention to environmental & socio-economic impacts related to:

- agricultural mechanisation
- use of biomass, farm effluents vs. external biomass, analyses & controls required.
- necessary post-treatment for hygienisation, odour reduction and stability in storage
- agronomic properties and contamination contents with proposal of limit values
- fertilising recommendations



Schematic of the flow of information between all elements of the Agrobiogas Toolkit and Helpdesk

Operational Guidelines

The Operational Guidelines provide information on troubleshooting in case of the inhibition of biocenosis, due to the intake of toxic substances, substrate overload and malfunctioning due to non optimal substrate compositions (e.g. C:N ratio). Additional descriptions relate to retention time optimisation, temperature and moisture variation, modifications in co-substrates and their influence on the biogas yield and methane concentration.

Essential for a successful and efficient consultancy, the operator must have a minimum pool of information.

Long-term experiences, especially with low-budget, small-scale biogas plants, have shown that from the point of view of the operator, there is sometimes a great lack of information concerning the biogas plant. Although in the short term it is not always possible to provide information and data for every substrate in the database or the toolkit. This document describes the basics of a successful plant operation and gives a classification of substrates in groups according to the typical pros and cons of different substrate characteristics.