



## Trial for Vanex treatment at an AD plant

### GOALS OF THE TRIAL:

- A reduce/eliminate H<sub>2</sub>S and foul odours to undetectable levels
- B increase biogas production up to 650L/kg of organic load biodegradable introduced and % of methane up to 72%
- C reduction of dewatered sludge to evacuate, in some cases up to 70%

### Introduction

The design of treatments involves introducing into the digester a bacterial inoculum whose composition, dose and time of application is determined following a study of specific data for each particular case. Every single treatment has different specifications. Weekly maintenance is required after initial daily treatment over 25-30 days.

The treatment can be used from feed from the industries listed below:

- Wastewater Treatment Plants
- Slaughterhouses
- Agricultural businesses
- Biogas plants
- Distilleries, wineries, breweries, dairy

### Benefits:

With the application of our treatment in anaerobic digesters, the result will be lower running costs due to:

- lower consumption of iron salts in the anaerobic digestion
- increased amount of biogas (up to 650 l / kg of volatile matter biodegradable introduced)
- increased percentage of methane in the biogas produced (up to 72%)
- decreased production of hydrogen sulphide (H<sub>2</sub>S) in the biogas
- less digested sludge that is more mineralized, odourless and more stable
- increased rate of alkalinity, high stability of digestion, pH around 7.2



If we increase the production of biogas and methane concentration, the production of electrical energy increases as a result. With the production of electricity from waste, we obtain a valuable green energy source, reducing dependency on carbon fuels, and the Greenhouse Effect.

**PROFITABILITY**

The following table shows data for production at a 1,200m<sup>3</sup> AD plant at Font de la Pedra , Spain.

Figures show how improvements & savings can be made using our treatment:

AD Plant at Font de la Pedra	Before Treatment	After Treatment
Electricity Generated (Kw/h)	249,456	553,536 *
Price Paid per Kw/h – 0.10 Euros	24,945	55,354
Sludge Volume Produced (Tonne)	9,600	4,300 *
Price paid for removal = 18 Euro / Tonne	172,800	77,400

\*(1 year fully treat)

**Income (Euros):**

post treatment = 55,354 - 24,945 = 30,409 Euros

Savings on Sludge = 172,800 - 77,400 = 95,400 Euros

**Total Benefit = 30,409 + 95,400 = 125,809 Euros**

**Costs (Euros):**

Initial Treatment = €12,000, thereafter annual maintenance of €12,000

= €24,000 investment for first year; with Income of €125,809

**Return On Investment = €101.809 for the first year (500% ROI)**

**Subsequent years = €125,809 – €12,000 = €113,809 (1000% ROI)**

This clearly shows the effectiveness of the treatment with regards to costs versus benefits.

The relatively small outlay versus the return is phenomenal.

The results do not show a monetary amount for the reduced H<sub>2</sub>S and foul odours which is invaluable in terms of potential lives saved and nuisance to the neighbouring dwellers.

**NB. Each case is different and results will vary depending on data such as size of plant, feed etc.**