TEST REPORT

Centro Biomasse del Dipartimento di Scienze Veterinarie per la Salute, la Produzione Animale e la Sicurezza Alimentare

OBJECT: Evaluated the yield of biogas in organic matrix treated and untreated with ultrasound

APPLICANT : Weber Entec GmbH & Co. kg

This test report conveys the results of samples on provided matrix, listed below:
1. Sample treated with ultrasound $621,2\ \mathbf{Nm^3/t_{VS}}$
2. Untreated Sample $550,6\ \mathbf{Nm^3/t_{VS}}$

In percentage terms, the treated sample has produced the 11,37% more than the untreated sample

Sample: corn silage with poultry manure (4%) and cattle slurry (20%)
The samples were analysed on the content of total solids (TS, % Wet Basis) and volatile solids (VS, % Total Solids).

Sample	TS (%wb)	VS (%ts)
Treated	$9,6 \pm 0,49$	$82,62 \pm 0,62$
Untreated	$10,40 \pm 1,98$	$82,50 \pm 2,97$
Inoculum[*]	$4,1 \pm 0,10$	$64,49 \pm 0,05$

[*] Digestate from reactor fed mainly with livestock effluents, filtered and kept at 40° C for 5 days before the test.

To start the fermentation the supplied matrix was mixed with inoculum (ratio of TS. Matrix: inoculum of 1:2). The process has been kept at a temperature of $40 \pm 2°$ C and the following results were obtained:
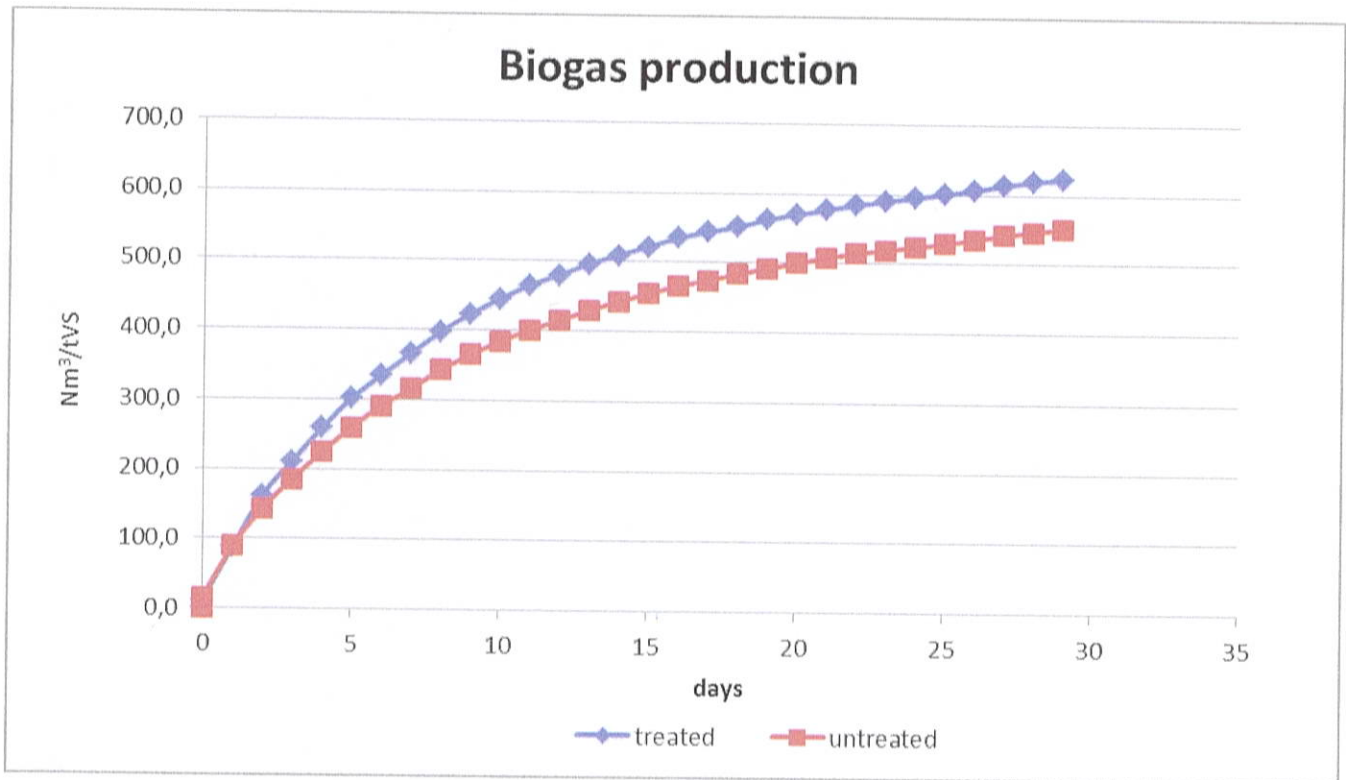
Sample	Total biogas produced (Nm^3/t_{VS})
treated	$621,2 \pm 60,10$
untreated	$550,6 \pm 21,85$

The attached shows the graph of biogas production (**Figure 1**) and the table with the details of the data recorded during the whole test period (21/12/2012-20/01/2013).

Milano, 26/03/2012

Prof. Pierluigi Navarotto

Figura 1 Cumulative biogas production curves (Nm^3/tsv) in function of the time.