TIETJEN
DAS ORIGINAL

THE PATENTED IMPRA SYSTEM

# MORE POWER FOR YOUR BIOGAS PLANT

The Impra system involves a wet treatment process that uses a simple technique to break down solids (e.g. silage) and liquids together in a single processing stage down to their cell structures.

The fibres of a substrate are shortened and separated from one another at the same time and therefore provide the optimum surface for the treated.

Further nutrients are immediately accessible to the microorganisms. The system achieves a complete breakdown of the usable organic material.

The combined mechanical and biological „decomposition“ also allows the utilisation of raw materials seldom used before in biogas systems, such as straw, lucerne, hay, miscanthus or igniscum.

Impra is just as suitable for field crops, such as potatoes or turnips, and for grains, millet, oil crops and other internationally available starch plants. In every case there is a vigorous anaerobic breakdown of the available carbon compounds accompanied by a particularly rapid production of biogas, i.e. an increase in the quality of gas per unit of time.

## YOUR ADVANTAGES WITH IMPRA:

- Lower pump pressures with consequential energy savings
- Shorter stirring intervals for the same throughmixing and therefore energy savings
- Less wear throughout the whole process, especially in the pipework and pumps
- The natural upward movement of gas (bubble formation) takes place even with high organic loading rates
- Scum formation is minimised and therefore e.g. sucking material out of the final storage tank and application on to the fields are simpler

**HIGHER GAS YIELD**

**USE OF ALTERNATIVE RAW MATERIALS**

**LESS WEAR**

Fermentation substrate: More flowable due to IMPRA
(left before, right after digestion)

## THE REDUCED RESIDENCE TIME AND VISCOSITY LEAD TO:

- An improved use of the fermenter volume in existin installations, i.e. more gas from the same digester
- Substantially lower capital costs for tank construction in the case of new systems

## ADVANTAGES OF IMPRA COMPARED WITH OTHER PROCESSES:

- Specified degree of digestion (particle size distribution) in continuous operation
- High tolerance of contaminants, e.g. iron, minerals and plastics. Integrated separator for foreign bodies
- Minimum servicing costs, low down-times, i.e. wear parts can be replaced in a few minutes
- A low specific energy consumption in relation to optimised energy yield from many different input materials (substrates - world-wide), which provides extraordinary flexibility
- Thus the Impra system can be used before the first fermentation or even later in the biogas process and optimised to make the best possible use

| Typ | IMPRA 3M | IMPRA 5M |
|---|---|---|
| Dimensions | 2,7 x 1,2 x 2,5 m | 3,2 x 1,2 x 2,5 m |
| weigth | 1.650 kg | 2.550 kg |
| space required for maintenance | both sides 1 m | both sides 1 m |
| throughput | 10 - 20 $m^3$/h | 15 - 40 $m^3$/h |
| motor power | 37 kW | 75 kW |
| energy consumption | 2 - 4 kW/$m^{3*}$ | 2 - 4 kW/$m^{3*}$ |

* is compensated by energy savings at the pump an agitators of the entire AD plant

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