



**TerraVis**  
The experts in Biogas.

An AGRAVIS Raiffeisen AG Company.



# Healthy biology







Produce the highest Methane yields

## DESULPHURIZATION – BASIS FOR PLANT EFFICIENCY AND PROCESS STABILITY

### Why Desulphurization products?

- Rapid and reliable binding of Sulphides preventing conversion to H<sub>2</sub>S
- A more stable and efficient biology due to the increased trace element availability
- Prevents damage to concrete, steel and parts of the CHP
- Nets and beams are free, sulphur is permanently discharged from the plant.

### The MethaTec® Detox S Portfolio

|  | MethaTec® Detox S Direct   | MethaTec® Detox S Turbo  | MethaTec® Detox S Premium   |
|--|--|--|---|
| Product                                    |     |  |  |
| Sulphide-binding per kg by short retention |    |  |   |
| Buffer effect by long retention            |    |  |   |
| Dispersion in the substrate                |  |  |   |
| Packaging                                  |  | 20 kg bag (fermentable)<br>1,000 kg Big Bag  |   |
| Iron content                               | ca. 35%  | ca. 37%  | ca. 50%   |

All MethaTec® Detox S Products are based on Iron Hydroxide taken from water treatment and are subject to the strict limit values of the fertilisation ordinance (DüMV). MethaTec® Detox S Products are not classified as hazardous substances nor are they subject to special transport or storage conditions. This makes them ideal for desulphurization in your biogas plant.

### Iron is not just Iron – Pay attention to the following!

| Origin                 | Water treatment        | Mining                      |
|------------------------|------------------------|-----------------------------|
| structure              | amorph                 | crystalline                 |
| reactivity             | very high              | weak                        |
| reaction speed         | very quick             | slow                        |
| volume                 | low                    | high                        |
| sedimentation tendency | low, very light weight | sinks quickly, high density |

## PRODUCT RECOMMENDATION – TRACE ELEMENT MIXTURE – OPTIMAL SUPPLY TO THE BIOLOGY

### Why individual trace element mixtures?

- Needs-based supply to the microbiology
- No unnecessary costs due to excessive dosage
- Safe handling taking the health regulations into account

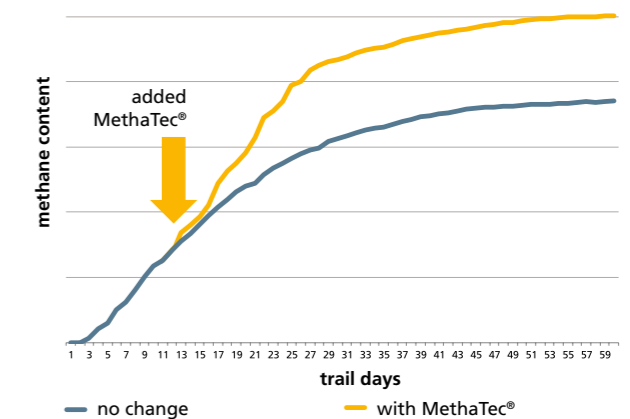


### Powdered Trace elements

#### MethaTec® Essentials

- Solid trace element mixture using Iron Hydroxide as a buffer
- Individual and exactly balanced to the needs of the micronutrient requirements of the biogas system
- Ideal for systems with high amounts of sulphur
- The included Iron Hydroxide binds the sulphide and prevents the conversion to H<sub>2</sub>S
- Maximum availability due to chelated micronutrients
- Cost effective and sustainably effective

Pack size: 5 - 20 kg

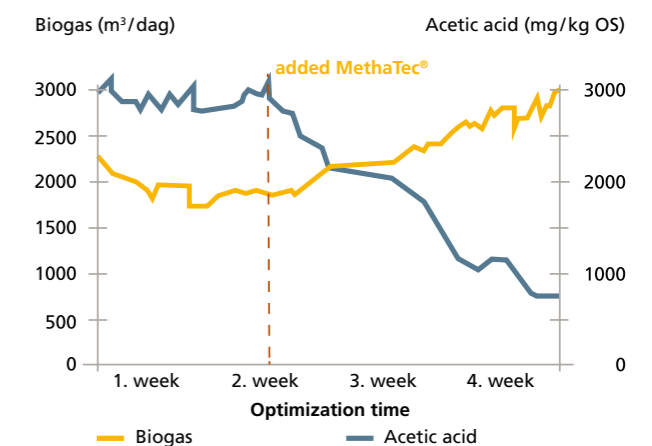


### Liquid Trace elements

#### MethaTec® EcoPlex

- Complex trace element mixture
- Stable to fluctuating pH-values and temperatures
- Individually balanced mixture to the needs of the biogas system
- Maximum availability due to chelated micronutrients

Pack size: 30 kg canister  
65 kg drum  
250 kg drum  
1,250 kg container



#### Results:

- Increased methane content
- Better substrate utilization
- High yield security

# ENZYMES – BETTER SUBSTRATE- AND ENERGY EFFICIENCY



## WHY ENZYMES?

- Promote the breakdown of difficult to ferment substrates
- Increase gas production and reduce retention time
- Better agitation and pumping ability
- Reduction of daily costs and increase revenues

## Particularly recommended: Our All-in-one solution

### MethaTec® Trace n' Zyme

Perfectly mixed combinations of micronutrients, Iron hydroxide and Enzymes

- Reliable top performance thanks to our highly efficient combination of Trace elements and Enzymes
- Ideal for systems with high amounts of sulphur and high fibre substrates
- Iron Hydroxide, Trace elements and Enzymes in one product

**Pack size:** 5 - 20 kg



## Liquid Enzym mixtures

### MethaFerm® Liquifier

- Highly concentrated, specially designed enzyme mixture for breaking down Cellulose, Hemicellulose and other cell wall components
- Outstanding distribution with low application rates
- Suitable for long fibre material and high amounts of manure
- Dissolves sink and floating layers within 1-2 weeks

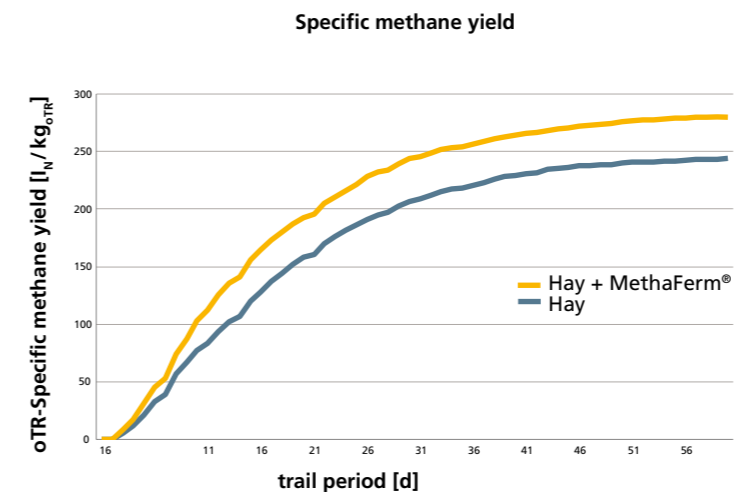
### MethaFerm® Gras liquid

- Optimizing the fermentation of hard to digest fibre components
- Maximum capacity even with difficult substrates
- Stable to fluctuating pH- and temperature changes
- Used for Grass, green rye and whole cereal crop

### MethaFerm® Mais liquid

- Ideal for corn and fresh corn with high proportion of stable starch
- Improves fermentation even with bad ensiled corn
- Stable to fluctuating pH- and temperature changes
- Suitable for corn and sweet sorghum

| Product                | Application   | Package   |
|------------------------|---|---|
| MethaFerm® Liquifier   | - deal for high amounts of manure and floating layers     | 30 kg canister<br>60 kg drum<br>220 kg drum<br>1,000 kg container |
| MethaFerm® Gras liquid | - Grass<br>- Sudan grass<br>- Green rye                   |   |
| MethaFerm® Mais liquid | - Cereal whole plants<br>- Energy corn<br>- Sweet sorghum |   |



## EMERGENCY REMEDIES – QUICK ASSISTANCE IN ACUTE PROCESS DISTURBANCES

### MethaTec® Essentials Basic

- Optimized micronutrient mixture with Iron Hydroxide for emergencies
- Fast reacting for acidification and problems with biology

- Ideal for systems with high sulphur content
- Easy handling due to fermentable bag

**Pack size:** 20 kg bag



### MethaTec® EcoPlex Basic

- Highly effective emergency mixture of complexed trace elements
- Activates the biology and ensured optimum substrate utilization

- Supports the acid reduction for a quick regeneration of the system

**Pack size:** 30 kg canister



### MethaTec® Nmin

- Binds ammonium and prevents the formation of harmful ammonia
- Creates colonization area for the bacteria especially in low fibre substrates
- Added Iron hydroxide support the chemical desulphurization

- Stabilizes and improves the biological process
- Improves the viscosity in the fermenter and prevents foaming

**Pack size:** 20 kg bag  
1,000 kg Big Bag



### MethaTec® Entschäumer

- Quickly dissolves existing foam and stops re-foaming
- Does not contain mineral oil or silicone
- Completely biologically degradable

**Pack size:** 9 kg canister  
27 kg canister  
190 kg drum  
900 kg container



## DOSING STATION – THE NEW GENERATION OF ACURATE DOSING

The exact dosage of trace element mixtures like MethaTec® EcoPlex and Enzyme mixtures like MethaFerm® take place fully automatically with each fermenter feeding.

### Advantage:

- Individual configuration of the TerraVis SpurEn cabinet to your needs
- Remote access and control of the dosing quantity via webserver and LogoApp possible
- Exact dosing of trace element or Enzyme mixtures with each fermenter feeding using the sensor function (without access to the system control)

### Example equipment:

- Lockable cabinet
- Sensor for start detection of the pump
- Membrane pump with potentiometer for fine dosing
- Siemens Logo controller
- 3-colour LED-Signal lamp
- Prepared remote access via Webserver and LogoApp
- A probe to report the system status





## CONTACT

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